

Table of Contents

Table of Contents

A. Introduction

- 1.1 What is the name of this Plan?
- 1.2 What does the Plan seek to achieve?
- 1.3 Where does the Plan apply?
- 1.4 Relationship of this Plan to the LEP and other plans and policies
- 1.5 Repeal of plans
- 1.6 How is the Plan structured?
- 1.7 Where do I find the relevant controls?
- 1.8 What is the date of commencement for the Plan?

B. DCP Principles

- 1.1. Background
 - 1.1.1. Council's Commitment to Sustainability
 - 1.1.2 Sustainability and Development Control
 - 1.1.3 Key Principles for this Plan
 - 1.1.4 How to Use these Principles
- 1.2. Principles

C1 Site Planning and Design Principles

- 1.1 Site Planning
 - 1.1.1 Site Analysis
 - 1.1.2 Key Areas with Scenic and Landscape Values
- 1.2 Design Principles
 - 1.2.1 Application of Certification System
 - 1.2.2 Built Form - Energy Efficiency and Conservation
 - 1.2.3 Building Form - Height, Bulk and Scale
 - 1.2.4. Responding to the Site's Topography and Landform
 - 1.2.5 Safety and Security (Principles of Crime Prevention through Environmental Design).
 - 1.2.6 Maximising Access and Adaptability
 - 1.2.7 Adult Change Facilities

C2 Vegetation Management

- 2.1 Preservation of Trees and Vegetation
- 2.2 Biodiversity Corridors and Areas of Remnant Indigenous Vegetation in Non-Urban Areas
- 2.3 Bushfire Management

C3 Water Management

- 3.1 The Water Cycle/Water Conservation
- 3.2 Catchment Management and Water Quality
- 3.3 Watercourses, Wetlands and Riparian Corridors

- 3.4 Groundwater
- 3.5 Flood Planning
- 3.6 Stormwater Management and Drainage
- 3.7 Water Retention Basins / Dams
- 3.8 Rainwater / Storage Tanks

C4 Land Management

- 4.1 Site Stability and Earthworks
- 4.2 Landfill
- 4.3 Erosion and Sedimentation
- 4.4 Contaminated Lands
 - 4.4.1 Preventing Contamination
 - 4.4.2 Triggers for Contamination Investigation
 - 4.4.3 Stages of Contamination Investigation
 - 4.4.4 Site Audit
 - 4.4.5 Remediation Procedures
 - 4.4.6 Clean Up Notices
 - 4.4.7 Council Records and Community Information
- 4.5 Salinity

C5 Waste Management

- 5.1 Waste Management Plans
- 5.2 General Controls
 - 5.2.1 Site Management
 - 5.2.2 Selection of Building Materials
 - 5.2.3 Designing for Waste Minimisation
 - 5.2.4 Siting and Design of Waste Storage and Collection Areas
 - 5.2.5 Management of Waste Storage and Collection Areas
- 5.3 Development Specific Controls
 - 5.3.1 Residential Development Controls
 - 5.3.2 Mixed Use Development Controls
 - 5.3.3 Non-Residential Development Controls
- 5.4 Hazardous Waste Management
- 5.5 On-Site Sewage Management

C6 Landscape Design

- 6.1 Controls
 - 6.1.1 Development Process
 - 6.1.2 Protection of the Environment
 - 6.1.3 Neighbourhood Amenity and Character
 - 6.1.4 Site Amenity
 - 6.1.5 Construction

C7 Culture and Heritage

- 7.1 European Heritage

Table of Contents

- 7.1.1 Determining the Impact on Heritage Significance
- 7.1.2 Heritage Items
- 7.1.3 Heritage Conservation Areas
- 7.1.4 Design Guidelines
- 7.1.5 Development in the Vicinity of a Heritage Item or Conservation Area
- 7.1.6 Archaeological Sites
- 7.1.7 Potential Heritage Items
- 7.1.8 Demolition
- 7.1.9 Archival Recording
- 7.1.10 Business, Office and Retail Buildings
- 7.1.11 Conservation Incentives and Fee Concessions
- 7.2 Aboriginal Culture and Heritage
- 7.3 Significant Trees and Gardens

C8 Public Domain

- 8.1. Pedestrian Amenity
- 8.2. Street Furniture
- 8.3. Lighting
- 8.4. Outdoor Dining and Trading Areas
- 8.5. Public Art

C9 Advertising and Signage

- Introduction
- 9.1. General Requirements for Signs
- 9.2. Signs in the Vicinity of Heritage Items
- 9.3. Residential, Rural and Environmental Zones (E3 and E4)
- 9.4. Commercial, Mixed Use and Industrial Zones
- 9.5. Open Space Zones (Public and Private Recreation)
- 9.6. Special Event Advertising

C10 Transport, Access and Parking

- 10.1. Transport and Land Use
- 10.2. Traffic Management and Safety
- 10.3. Key Transport Corridors
- 10.4. Roads
- 10.5. Parking, Access and Driveways
- 10.5.1. Parking
- 10.5.2. Access and Driveways
- 10.6. Pedestrian Connections
- 10.7. Bicycle Facilities

C11 Subdivision

- 11.1. General Subdivision Requirements
- 11.2. Rural Subdivision
- 11.3. Residential Subdivision

- 11.3.1. Allotment Orientation
- 11.3.2. Site Frontage
- 11.3.3. Allotment Dimensions
- 11.3.4. Road Network
- 11.3.5. Road Design and Construction
- 11.3.6. Landscaping and Site Design
- 11.3.7. Services
- 11.3.8. Drainage
- 11.3.9. Public Open Space
- 11.3.10. Environmental Site Management
- 11.4. Industrial Subdivision
- 11.4.1. Subdivision – Lot Standards
- 11.4.2. Subdivision – Access Roads
- 11.4.3. Subdivision – Other Requirements

C12 Noise and Vibration

- 12.1. Road Traffic Noise
- 12.2. Rail Traffic Noise and Vibration
- 12.3. Aircraft Noise
- 12.4. Industrial and Commercial Development
- 12.5. Rural Development
- 12.6. Open Air Entertainment
- 12.7. Vibration and Blasting

C13 Infrastructure and Services

- 13.1. Location of Easements for Infrastructure
- 13.2. Utilities and Service Provision
- 13.3. On Site Sewage Management
- 13.4. Engineering Works and Construction Standards
- 13.5. Development adjacent to the Sydney catchment authority controlled areas – the warragamba pipelines

D1 Rural Land Uses

- 1.1. Rural Character
- 1.2. Rural Dwellings and Outbuildings
- 1.2.1. Siting and Orientation of Dwellings and Outbuildings
- 1.2.2. Setbacks and Building Separations
- 1.2.3. Site Coverage, Bulk and Massing
- 1.2.4. Height, Scale and Design
- 1.2.5. Dual Occupancy Dwellings
- 1.2.6. Secondary Dwellings
- 1.2.7. Materials and Colours
- 1.2.8. Land in the Vicinity of Proposed Second Sydney Airport
- 1.3. Farm Buildings
- 1.3.1. Siting and Orientation
- 1.3.2. Floor Space, Height and Design

Table of Contents

- 1.3.3 Materials and Colours
- 1.4 Agricultural Development
 - 1.4.1. Extensive Agriculture
 - 1.4.2. Intensive Livestock Agriculture
 - 1.4.3. Poultry Farms, Piggeries, Feedlots and Dairies
 - 1.4.4. Animal Boarding or Training Establishments
 - 1.4.5. Aquaculture
 - 1.4.6. Horticulture
- 1.5. Non-Agricultural Development
 - 1.5.1. Rural Amenity and Design
 - 1.5.2. Home Businesses and Home Industries
 - 1.5.3. Tourist and Visitor Accommodation
 - 1.5.4. Rural Industries
 - 1.5.5. Retail Premises
 - 1.5.6. Truck Parking Areas

D2 Residential Development

- 2.1 Single Dwellings
 - 2.1.1. Residential Character
 - 2.1.2. Setbacks and Building Envelope
 - 2.1.3. Development on Sloping Land
 - 2.1.4. Landscaped Area
 - 2.1.5. Building Design/Site Works
 - 2.1.6. Solar Planning
 - 2.1.7. Garden Design and Fences
 - 2.1.8. Significant Landscapes
 - 2.1.9. Significant Townscapes
- 2.2. Dual Occupancies
 - 2.2.1. Residential Character
 - 2.2.2. Preferred Configuration for Dual Occupancy Development
 - 2.2.3. Alternative Configuration for Dual Occupancy Development
 - 2.2.4. Urban Form
 - 2.2.5. Front and Rear Setbacks
 - 2.2.6. Building Envelope and Side Setbacks
 - 2.2.7. Driveways and Parking Areas
 - 2.2.8. Landscaped Area
 - 2.2.9. Solar Planning
 - 2.2.10 Significant Landscapes & Townscapes
 - 2.2.11 Corner Sites and Park Frontages
 - 2.2.12 Building Design
 - 2.2.13 Energy Efficiency
 - 2.2.14 Design of Dwellings And Private Courtyards
 - 2.2.15 Garage Design
 - 2.2.16 Garden Design
 - 2.2.17 Paving Design
 - 2.2.18 Fences and Retaining Walls
 - 2.2.19 Visual and Acoustic Privacy and Outlook

- 2.2.20 Safety and Security
 - 2.2.21 Accessibility and Adaptability
 - 2.2.22 Storage and Services
- 2.3 Secondary Dwellings
 - 2.3.1 General
 - 2.3.2 Site Coverage
 - 2.3.3 Siting and Design
 - 2.3.4 Private Open Space
 - 2.3.5 Design and Materials
 - 2.3.6 Facilities
- 2.4 Multi Dwelling Housing
 - 2.4.1 Residential Character
 - 2.4.2 Preferred Configuration for New Dwellings
 - 2.4.3 Development Site
 - 2.4.4 Urban Form
 - 2.4.5 Front and Rear Setbacks
 - 2.4.6 Building Envelope and Side Setbacks
 - 2.4.7 Driveways and Parking Areas
 - 2.4.8 Landscaped Area
 - 2.4.9 Solar Planning
 - 2.4.10 Significant Townscapes and Landscapes
 - 2.4.11 Corner Sites and Park Frontages
 - 2.4.12 Building Design
 - 2.4.13 Energy Efficiency
 - 2.4.14 Design of Dwellings and Private Courtyards
 - 2.4.15 Garage Design
 - 2.4.16 Garden Design
 - 2.4.17 Paving Design
 - 2.4.18 Fences and Retaining Walls
 - 2.4.19 Visual and Acoustic Privacy and Outlook
 - 2.4.20 Safety and Security
 - 2.4.21 Accessibility and Adaptability
 - 2.4.22 Storage and Services
- 2.5 Residential Flat Buildings
 - 2.5.1 Residential Character
 - 2.5.2 Preferred Configuration for Residential Flat Buildings
 - 2.5.3. The Development Site
 - 2.5.4. Urban Form
 - 2.5.5. Landscaped Area
 - 2.5.6. Front and Rear Setbacks
 - 2.5.7. Side Setbacks
 - 2.5.8. Visual and Acoustic Privacy and Outlook
 - 2.5.9. Solar Planning
 - 2.5.10 Significant Townscapes & Landscapes
 - 2.5.11 Corner Sites and Park Frontages
 - 2.5.12 Building Design
 - 2.5.13 Energy Efficiency
 - 2.5.14 Design of Dwellings And Private Courtyards
 - 2.5.15 Garages

Table of Contents

- 2.5.16 Garden Design
- 2.5.17 Paving Design
- 2.5.18 Fences and Retaining Walls
- 2.5.19 Safety and Security
- 2.5.20 Accessibility and Adaptability
- 2.5.21 Storage and Services
- 2.6 Non Residential Developments
- 2.7 Proposed Road Pattern Designs

D3 Commercial and Retail Development

- 3.1. Bulky Good Retailing
- 3.2. Sex Services Premises
- 3.3. Restricted Premises

D4 Industrial Development

- 4.1. Key Precincts
- 4.2. Building Height
- 4.3. Building Setbacks and Landscape
- 4.4. Building Design
- 4.5. Storage of Materials and Chemicals
- 4.6. Accessing and Servicing the Site
- 4.7. Fencing
- 4.8. Lighting

D5 Other Land Uses

- 5.1. Application of Certification System
- 5.2. Child Care Centres
- 5.3. Health Consulting Rooms
- 5.4. Educational Establishments
- 5.5. Parent Friendly Amenities
- 5.6. Places of Public Worship
- 5.7. Vehicle Repair Stations
- 5.8. Cemeteries, Crematoria and Funeral Homes
- 5.9. Extractive Industries
- 5.10 Telecommunication Facilities
- 5.11 Boarding Houses

E Key Precincts

E1 Caddens

- 1.1 About This Section
 - 1.1.1 Land to Which This Section Applies
 - 1.1.2 Aims of This Section
 - 1.1.3 General Objectives
 - 1.1.4 Other Relevant Parts of This DCP
 - 1.1.5 Other Relevant Sources of Information
 - 1.1.6 Concept Plans
- 1.2 Structure Plan
 - 1.2.1 Urban Structure

- 1.2.2 Character Area Design Principles
- 1.2.3 Dwelling Yield and Diversity
- 1.3 The Public Domain
 - 1.3.1 Street Network and Design
 - 1.3.2 Street Furniture and Public Art
 - 1.3.3 Pedestrian and Cycle Network
 - 1.3.4 Public Transport
 - 1.3.5 Open Space, Environmental Conservation and Landscape Network
 - 1.3.6 Biodiversity
 - 1.3.7 Aboriginal and European Heritage
 - 1.3.8 Bushfire Hazard Management
 - 1.3.9 Water Cycle Management
 - 1.3.10 Contamination Management
 - 1.3.11 Salinity Management
- 1.4 Residential Development
 - 1.4.1 Subdivision and Neighbourhood Design
 - 1.4.2 Streetscape, Feature Elements and Roof Design
 - 1.4.3 Dwelling Height, Massing and Siting
 - 1.4.4 Building Setbacks
 - 1.4.5 Development Forms
 - 1.4.6 Private Open Space
 - 1.4.7 Site Cover and Landscaped Areas
 - 1.4.8 Fencing
 - 1.4.9 Garages and Access
- 1.5 Environmental and Residential Amenity
 - 1.5.1 Visual Privacy and Acoustic Amenity
 - 1.5.2 Safety and Surveillance
 - 1.5.3 Sustainable Building Design
- 1.6 The Precinct Centre

E2 Claremont Meadows Stage 2

- 2.1. Introduction
 - 2.1.1. Area Covered By This Section
 - 2.1.2 Aims of This Section
- 2.2 Residential Development
 - 2.2.1 Multi Dwelling Housing
 - 2.2.2 Traditional Residential
 - 2.2.3 Large Lot Residential Adjacent To the M4 Motorway
 - 2.2.4 Gateway Site on The Great Western Highway
 - 2.2.5 Home-Based Business Activities
- 2.3 Areas of Ecological Sensitivity
 - 2.3.1 Remnant Bushland
 - 2.3.2 Watercourse and Riparian Corridors
 - 2.3.3 Water Cycle
 - 2.3.4 Salinity
 - 2.3.5 Contaminated Land
 - 2.3.6 Bushfire Hazard

Table of Contents

- 2.3.7 Air Quality
- 2.4 Community Services and Recreation
 - 2.4.1 Neighbourhood Parks
- 2.5 Recognition of Surrounding Land Uses
 - 2.5.1 Major Roads (Werrington Arterial, Great Western Highway and the M4 Motorway)
 - 2.5.2 Integration with Claremont Meadows Stage 1
 - 2.5.3 South Creek Corridor
 - 2.5.4 Former Gipps Street Landfill Site
- 2.6 Public Domain
 - 2.6.1 Management of the Public Domain
 - 2.6.2 Landscape Design
- 2.7 Infrastructure
 - 2.7.1 Streets and Access
 - 2.7.2 Sewer and Water
 - 2.7.3 Energy Supplies
 - 2.7.4 Telecommunications

E3 Cranebrook

Part A Waterside

- 3.1 Waterside Corporate
 - 3.1.1.1 Purpose of This Section
 - 3.1.1.2 Land to Which This Section Applies
 - 3.1.2.3 General Objectives
 - 3.1.3.2 Catchment Water Quality
 - 3.1.3.3 Water Quantity
 - 3.1.3.4 Management of the Lakes System
 - 3.1.4.1 Site and Building Works
 - 3.1.4.2 Access and Parking
 - 3.1.4.3 Acoustic Requirements
 - 3.1.4.4 Streetscape
 - 3.1.4.5 Building Envelopes
 - 3.1.4.6 Built Form – Corner of Andrews and Castlereagh Roads
 - 3.1.4.7 Built Form – Lateral 1
 - 3.1.4.8 Built Form - Neighbourhood Facilities
 - 3.1.4.9 Landscaping and Open Space
 - 3.1.5.1 Management Principles
- 3.2 Waterside Residential
 - 3.2.1.1 Purpose of the Section
 - 3.2.1.2 Land to Which the Section Applies
 - 3.2.1.3 Vision for Waterside
 - 3.2.1.4 Aims and Principles of This Section
 - 3.2.1.5 Urban Structure and Staging
 - 3.2.1.6 Approval Process
 - 3.2.1.7 Specific Information Relating To the R1 General Residential and E2 Environmental Conservation Zones
 - 3.2.1.8 Wetlands Protection

- 3.2.1.9 Ownership and Management Under The Community Scheme Legislation
- 3.2.2.1 Floodway, Drainage and Site Works
- 3.2.2.2 Urban Design
- 3.2.2.3 Acoustic Requirements
- 3.2.2.4 Landscape Planting and Open Space
- 3.2.2.5 Roads and Car Parking
- 3.2.2.6 Residential Development
 - 3.2.2.6.1 Dwelling Types
 - 3.2.2.6.2 Residential Development Controls

Part B Cranebrook Neighbourhood Centre

- 3.3 Community Land / Group Neighbourhood Centre Cranebrook

Part C Cranebrook Rural Residential Development

- 3.4 Cranebrook Rural Residential Development
 - 3.4.1 Introduction
 - 3.4.1.1 Land to Which This Part Applies
 - 3.4.1.2 General Objectives
 - 3.4.2 Specific Objectives and Policies
 - 3.4.2.1 Access and Roads
 - 3.4.2.2 Subdivision and Layout
 - 3.4.2.3 Built Structures
 - 3.4.2.4 Landscape
 - 3.4.2.5 Community Facilities
 - 3.4.2.6 Services
 - 3.4.2.6.1 Water Supply/Effluent Disposal
 - 3.4.2.6.2 Drainage
 - 3.4.3 Maps

E4 Emu Heights – Blue Mountains Escarpment Siting, Design and Management

Part A – Preliminary

- 4.1 Introduction
 - 4.1.1 Land to which this section applies
 - 4.1.2 Purpose of the Section
 - 4.1.3 Aims and Objectives of this Section
 - 4.1.4 Special Requirements

Part B – Controls

- 4.2 Siting
- 4.3 Construction and Earthworks
- 4.4 Building Design
 - 4.4.1 Roof Form
 - 4.4.2 Building Height
 - 4.4.3 Doors and Windows
 - 4.4.4 Fences

Table of Contents

- 4.5 Building Materials
- 4.6 Building Colours
- 4.7 Services
- 4.8 Access
- 4.9 Landscaping
- 4.10 Bushfire Hazard
- Appendix 1: Maps of Blue Mountains Escarpment Area

E5 Emu Plains

Part A Commercial Area

- 5.1 Introduction
 - 5.1.1 Land to which this Part Applies
 - 5.1.2 Aims of this Part
- 5.2 Controls
 - 5.2.1 Commercial Development
 - 5.2.2 Traffic Management
 - 5.2.3 Parking
 - 5.2.4 Residential Development
 - 5.2.5 Pedestrian Access

E6 Erskine Business Park

- 6.1 Preliminary
 - 6.1.1 Aims And Objectives Of This Section
 - 6.1.2 Land To Which This Section Applies
- 6.2 Subdivision
- 6.3 Site Development And Urban Design
 - 6.3.1 Height
 - 6.3.2 Site Coverage
 - 6.3.3 Setbacks
 - 6.3.4 Urban Design
 - 6.3.5 Signage And Estate Entrance Walls
 - 6.3.6 Lighting
 - 6.3.7 Fencing
 - 6.3.8 Services
 - 6.3.9 Transmission Line Easement
- 6.4 Environmental Quality
 - 6.4.1 Noise Pollution
 - 6.4.2 Air Pollution
 - 6.4.3 Storage, Transportation And/Or Processing Of Chemical Substances
 - 6.4.4 Energy Conservation
 - 6.4.5 Trading/Operating Hours Of Premises
- 6.5 Drainage
 - 6.5.1 Introduction
 - 6.5.2 Western Catchment – South Creek
 - 6.5.3 Eastern Catchment – Ropes Creek
- 6.6 Transport Network
- 6.7 Biodiversity

- 6.7.1 Biodiversity Conservation Area and Landscape Buffer
- 6.8 Landscaping
 - 6.8.1 Objectives
 - 6.8.2 Controls
- 6.9 Landscape Areas
 - 6.9.1 Objectives
 - 6.9.2 Controls
 - 6.9.3 Requirements
 - 6.9.4 Requirements
 - 6.9.5 Landscape Area Requirements – Oakdale South Industrial Estate

E7 Glenmore Park

Part A – Glenmore Park Stage 1

- 7.1 Preliminary
 - 7.1.1 Land to Which This Part Applies
- 7.2 Glenmore Park Town Centre
 - 7.2.1 Preliminary7.2.2 Character Of The Glenmore Park Local Centre
 - 7.2.3 Urban Context
 - 7.2.4 Land Use Controls
 - 7.2.5 Built Form Controls
 - 7.2.5.1 Background
 - 7.2.5.2 Objectives
 - 7.2.5.3 Street Setbacks and Building Alignment
 - 7.2.5.4 Building Height Controls
 - 7.2.5.5 Building Exteriors
 - 7.2.5.6 Interface with Residential Areas
 - 7.2.5.7 Landscape Design
 - 7.2.5.8 Public Domain
 - 7.2.6 Car Parking and Access
 - 7.2.6.1 Vehicle Footpath Crossings and Driveways
 - 7.2.6.3 On-Site Parking
 - 7.2.6.4 Site Facilities and Services
 - 7.2.7 Design Principles
 - 7.2.7.1 Energy Efficiency
 - 7.2.7.2 Water Management and Water Sensitive Urban Design
 - 7.2.8 Waste Management
 - 7.2.9 Safety And Security (Crime Prevention Through Environmental Design)
 - 7.2.10 Site Topography
 - 7.2.11 Other Controls
 - 7.2.11.1 Town Square
 - 7.2.11.2 Community Centre Building
- 7.3 Glenmore Park Major Land Use
 - 7.3.1 Land to Which This Section Applies
 - 7.3.2 Purpose of the Section

Table of Contents

Part B – Glenmore Park Stage 2

- 7.4.1 Preliminary
 - 7.4.1.1 Land to Which This Part Applies
 - 7.4.1.2 Relationship to Other Plans and Documents
 - 7.4.1.3 Supporting Studies
 - 7.4.1.4 How to Use This Section
 - 7.4.1.5 Concept Plans
- 7.4.2 Structure Plan
 - 7.4.2.1 Introduction
 - 7.4.2.2 Urban Structure
 - 7.4.2.3 Dwelling Yield
 - 7.4.2.4 Dwelling Diversity
- 7.4.3 Public Domain
 - 7.4.3.1 Responding to The Site's Natural Features
 - 7.4.3.1.1 Corridors
 - 7.4.3.1.2 Bushfire Hazard Management
 - 7.4.3.1.3 Water Management
 - 7.4.3.1.4 Flood Management
 - 7.4.3.1.5 Trees
 - 7.4.3.1.6 The Northern Road View Shed
 - 7.4.3.2 Access and Movement
 - 7.4.3.2.1 Urban Structure
 - 7.4.3.2.2 Vehicular Movement
 - 7.4.3.2.3 Public Transport
 - 7.4.3.2.4 Pedestrians and Bicycles
 - 7.4.3.3 Streetscapes
 - 7.4.3.3.1 Landscape Character
 - 7.4.3.3.2 Street Furniture and Public Art
 - 7.4.3.3.3 Road Sections
 - 7.4.3.4 Open Spaces
 - 7.4.3.4.1 Active Open Space
 - 7.4.3.4.2 Neighbourhood Parks
 - 7.4.3.4.3 Riparian Corridor Edge Parks
 - 7.4.3.5 Neighbourhood Precinct
 - 7.4.3.5.1 Urban Structure
 - 7.4.3.5.2 Urban Character
 - 7.4.3.5.3 Retail Built Forms
 - 7.4.3.5.4 Primary School
- 7.4.4 Private Domain
 - 7.4.4.1 Subdivision
 - 7.4.4.2 Shared Driveways
 - 7.4.4.3 Site Planning
 - 7.4.4.3.1 Principal Private Open Space
 - 7.4.4.3.2 Garages and Parking
 - 7.4.4.3.3 Building Footprints
 - 7.4.4.4 Solar Planning
 - 7.4.4.5 Dwelling Design
 - 7.4.4.6 Visual and Acoustic Privacy
 - 7.4.4.7 Defining Boundaries
 - 7.4.4.8 Site Facilities

- 7.4.5 Typical Development Forms
 - 7.4.5.1 Apartments
 - 7.4.5.2 Terrace Dwellings And Live – Works
 - 7.4.5.3 Semi Detached Dwellings
 - 7.4.5.4 Studios
 - 7.4.5.5 Built To Boundary Dwellings
 - 7.4.5.6 Detached Dwellings
 - 7.4.5.6.1 Surveyors Creek Catchment
 - 7.4.5.6.2 Mulgoa Creek Catchment
 - 7.4.5.7 Non-Residential Development

E8 Kingswood

Part A Design and Siting of Non-Residential Development on Land Fronting Morley Avenue and the Great Western Highway, Kingswood

- 8.1 Preliminary
 - 8.1.1 Land to Which This Section Applies
 - 8.1.2 Aims and Objectives
- 8.2 Development Controls
 - 8.2.1 Building Setbacks
 - 8.2.2 Signage
 - 8.2.3 Car Parking
 - 8.2.4 Vehicular Access
 - 8.2.5 Loading Areas
 - 8.2.6 Storage Area
 - 8.2.7 Building Design and Layout
 - 8.2.8 Western Rail Line
 - 8.2.9 Landscaping Along the Great Western Highway

Part B The Knoll

- 8.3 Preliminary
 - 8.3.1 Land to Which This Part Applies
 - 8.3.1.1 Relationship to Other Plans and Documents
 - 8.3.1.2 Supporting Studies
 - 8.3.2 Structure Plan
 - 8.3.2.1 Vision for The Knoll
 - 8.3.3 The Public Domain
 - 8.3.3.1 Street Network
 - 8.3.3.2 Pedestrian and Cycle Network
 - 8.3.3.3 Open Space Network
 - 8.3.4 Residential Development
 - 8.3.4.1 Subdivision Design
 - 8.3.4.2 Streetscape, Feature Elements and Roof Design
 - 8.3.4.3 Dwelling Height, Massing and Siting
 - 8.3.4.4 Building Setbacks
 - 8.3.4.5 Development on Sloping Land
 - 8.3.4.6 Studio or Secondary Dwellings
 - 8.3.4.7 Private Open Space

Table of Contents

- 8.3.4.8 Site Coverage and Landscaped Area
- 8.3.4.9 Fencing
- 8.3.4.10 Garages And Access
- 8.3.5 Environmental and Residential Amenity
- 8.3.5.1 Visual and Acoustic Privacy
- 8.3.5.2 Safety and Surveillance
- 8.3.5.3 Sustainable Building Design

E9 Mulgoa Valley

- 9.1 Siting and Built Form controls
- 9.1.1 Heritage Items and Vistas
- 9.1.2 Siting
- 9.1.3 Building Form, Materials and Colours
- 9.1.4 Planting
- 9.1.5 Access, Parking and Services
- 9.1.6 Fences and Entrances
- 9.1.7 Signage
- 9.2 Other Controls
- 9.2.1 Mulgoa Road
- 9.3 Other Relevant Information

E10 Orchard Hills

- 10.1 Siting and built form controls
- 10.1.1 Siting and orientation of dwellings and outbuildings
- 10.1.2 Building form, materials and colours
- 10.1.3 Vegetation and plantings
- 10.1.4 Access, parking and services
- 10.1.5 Fences and entrances
- 10.1.6 Signage
- 10.2 Other relevant information

E11 Penrith

Part A Penrith City Centre

- 11.1 Preliminary
- 11.1.1 Area Included Within the Penrith City Centre
- 11.1.2 Aims and Objectives of This Section
- 11.1.3 Penrith City Centre Precincts and Character Areas
- 11.2 Building Form
- 11.2.1 Introduction
- 11.2.2 Building to Street Alignment and Street Setbacks
- 11.2.3 Street Frontage Heights
- 11.2.4 Building Depth and Bulk
- 11.2.5 Boundary Setbacks and Building Separation
- 11.2.6 Mixed Use Buildings
- 11.2.7 Site Cover and Deep Soil Zones
- 11.2.8 Landscape Design

- 11.2.9 Planting on Structures
- 11.3 Pedestrian Amenity
- 11.3.1 Permeability
- 11.3.2 Active Street Frontages and Address
- 11.3.3 Awnings
- 11.3.4 Vehicle Footpath Crossings
- 11.3.5 Pedestrian Overpasses and Underpasses
- 11.3.6 Building Exteriors
- 11.4 Access, Parking and Servicing
- 11.4.1 Pedestrian Access and Mobility
- 11.4.2 On-Site Parking Options
- 11.4.3 Site Facilities and Services
- 11.5 Sustainable Development
- 11.5.1 Reflectivity
- 11.5.2 Maximising Liveability and Longevity
- 11.5.3 Reduce Resource Consumption
- 11.6 Controls for Residential Development
- 11.6.1 Housing Choice and Mix
- 11.7 Controls for Special Areas
- 11.7.1 Precinct Controls

Part B North Penrith

- 11.8.1 Preliminary
- 11.8.1.1 Purpose of This Section
- 11.8.1.2 Land to Which This Section Applies
- 11.8.1.3 Relationship with Other Planning Documents
- 11.8.2 Concept Plan
- 11.8.2.1 Vision
- 11.8.2.2 Outcomes
- 11.8.3 Residential Development
- 11.8.3.1 Housing Density and Diversity
- 11.8.3.2 Subdivision
- 11.8.3.3 Building Envelopes
- 11.8.3.4 Building Design and Articulation
- 11.8.3.5 Private Open Space and Landscaping
- 11.8.3.6 Fencing
- 11.8.3.7 Garages, Site Access and Parking
- 11.8.3.8 Visual and Acoustic Amenity
- 11.8.3.9 Specific Provisions - Key Sites
- 11.8.3.10 Specific Provisions - Residential Flat Buildings
- 11.8.3.11 Specific Provisions - Ancillary Dwellings
- 11.8.4 The Village Centre
- 11.8.4.1 Built Form Controls
- 11.8.4.2 Access, Parking and Servicing
- 11.8.5 Thornton Hall
- 11.8.5.1 Built Form Controls
- 11.8.6 Industrial Development
- 11.8.6.1 Built Form Controls

Table of Contents

Appendix A – Example Of Building Envelope Plan

Appendix B – Residential Design Palette

Part C 164 Station Street, Penrith

- 11.1 Site analysis and local context
 - 11.1.1 Land and purpose which section applies
 - 11.1.2 Site Vision
 - 11.1.3 Site Objectives
 - 11.1.4 Local Context
- 11.2 Structure Plan
 - 11.2.1 Urban Structure
 - 11.2.2 Landscape Structure
 - 11.2.3 Character Areas and Urban Precincts
 - 11.2.4 Dwelling Density
 - 11.2.5 Indicative Development Staging
- 11.3 The Public Domain
 - 11.3.1 Street Network and Design
 - 11.3.2 Pedestrian and Cyclist Networks
 - 11.3.3 Public Open Space and Landscape Network
 - 11.3.4 Above Ground Basements
- 11.4 Residential Development
 - 11.4.1 Key Design Principles
 - 11.4.2 Building Height, Massing and Siting
 - 11.4.3 Building Setbacks
 - 11.4.4 Private Open Space
 - 11.4.5 Mixed Use Buildings
 - 11.4.6 Housing Diversity
- 11.5 Environmental and Residential Amenity
 - 11.5.1 Visual Privacy and Acoustic Amenity
 - 11.5.2 View Corridors
- 11.6 Access, Parking and Servicing
 - 11.6.1 Vehicle Access
 - 11.6.2 Pedestrian Access and Mobility
 - 11.6.3 On-Street Parking Options
 - 11.6.4 Parking Requirements for Residential Apartments
 - 11.6.5 Service Roads and Emergency Vehicles

E12 Penrith Health and Education Precinct

Part A – Hospital Precinct

- 12.1 Background
 - 12.1.1 Area Included Within the Hospital Precinct
 - 12.1.2 Aims of the Controls for the Hospital Precinct
 - 12.1.3 General Objectives
 - 12.1.4 Character Areas
- 12.2 Land Use Controls
 - 12.2.1 Mixed Use Development Controls

- 12.3 Built Form Controls
 - 12.3.1 Street Alignment, Building Height and Setbacks
 - 12.3.2 Building Depth and Bulk
 - 12.3.3 Boundary Setbacks and Building Separation
 - 12.3.5 Building Exteriors
 - 12.3.6 Landscape Design
 - 12.3.7 Planting on Structures
- 12.4 Other Controls
 - 12.4.1 Public Domain
 - 12.4.2 Pedestrian Amenity
 - 12.4.2.1 Permeability
 - 12.4.2.2 Active Street Frontages and Address
 - 12.4.2.3 Safety and Security
 - 12.4.2.4 Awnings
 - 12.4.2.5 Vehicle Footpath Crossings
 - 12.4.3 Car Parking
 - 12.4.4 Site Facilities and Services
- 12.5 Other Information

Part B – Business Park Precinct

- 12.6 Introduction
 - 12.6.1 Area Included In the Business Park Precinct
 - 12.6.2 General Objectives
 - 12.6.3 Requirements for a Concept Plan
 - 12.6.4 Preparation of a Concept Plan
- 12.7 Built Form Controls
 - 12.7.1 Street Alignment and Setbacks
 - 12.7.2 Side and Rear Setbacks
 - 12.7.3 Building Bulk
 - 12.7.4 Building Separation
 - 12.7.5 Site Coverage and Deep Soil Zones
 - 12.7.6 Architectural Excellence
 - 12.7.7 Active Street Frontages
 - 12.7.8 Pedestrian Permeability
 - 12.7.9 Awnings
 - 12.7.10 Landscaping and Fencing
 - 12.7.11 Water and Energy Efficient Design
 - 12.7.12 Traffic, Parking and Site Access

Part C – South Werrington Urban Village Precinct

- 12.8 South Werrington Urban Village
 - 12.8.1 Preliminary
 - 12.8.1.1 Background
 - 12.8.1.2 Land to Which This Section Applies
 - 12.8.1.3 Aims and General Objectives of This Section
 - 12.8.1.4 Supporting Studies
 - 12.8.1.5 Concept Plans
 - 12.8.2 Structure Plan

Table of Contents

- 12.8.2.1 Vision
- 12.8.2.2 Urban Structure
- 12.8.2.3 Desired Future Character
- 12.8.2.4 Dwelling Yields
- 12.8.3 Public Domain
 - 12.8.3.1 Responding to The Site's Natural Features
 - 12.8.3.2 Transport and Accessibility
 - 12.8.3.3 Streetscapes
 - 12.8.3.4 Passive Open Space and Environmental Conservation Areas
 - 12.8.3.5 Public Facilities
- 12.8.4 Private Domain
 - 12.8.4.1 Subdivision
 - 12.8.4.2 Site Planning
 - 12.8.4.4 Dwelling Design
 - 12.8.4.5 Visual and Acoustic Privacy
 - 12.8.4.6 Fencing
 - 12.8.4.7 Site Facilities
- 12.8.5 Residential Development Forms
 - 12.8.5.1 All Housing Types
 - 12.8.5.2 Integrated Housing
 - 12.8.5.3 Apartments
 - 12.8.5.4 Attached Dwellings
 - 12.8.5.5 Semi Detached Dwellings
 - 12.8.5.6 Studios
 - 12.8.5.7 Detached Dwellings
 - 12.8.5.8 Built To Boundary Dwellings
- 12.8.6 Development for Employment Purposes

Part D - Werrington Mixed-Use Area

- 12.9.1 Preliminary
 - 12.9.1.1 Land to Which This Section Applies
 - 12.9.1.2 Aims of This Section
- 12.9.2 Concept Plans
 - 12.9.2.1 Requirements for a Concept Plan
 - 12.9.2.2 Concept Plan Strategies
 - 12.9.2.3 Adoption of a Concept Plan
 - 12.9.2.4 Form of a Concept Plan
- 12.9.3 Urban Design
 - 12.9.3.1 Land Use and Activities
 - 12.9.3.2 Pattern of Streets, Open Spaces and Community Facilities
 - 12.9.3.3 Pattern of Street-Blocks and Subdivision
 - 12.9.3.4 Pattern of Built Form and Landscaped Areas
 - 12.9.3.5 Public Domain
- 12.9.4 Sustainability
 - 12.9.4.1 Social and Economic
 - 12.9.4.2 Biodiversity: Flora and Fauna
 - 12.9.4.3 Water Cycle
 - 12.9.4.4 Air Quality

- 12.9.5 Site Features
- 12.9.5 Public Transport
- 12.9.6 Site Features
 - 12.9.6.1 Topography and Soils
- 12.9.7 Infrastructure Services
 - 12.9.7.1 Street Networks
 - 12.9.7.2 Principal and Secondary Site Roads
 - 12.9.7.3 Pedestrian and Cycle Access
 - 12.9.7.4 Energy Supplies
 - 12.9.7.5 Community Services and Recreation
 - 12.9.7.6 Landscape Design
- 12.9.8 Residential Development
 - 12.9.8.1 Residential Density
 - 12.9.8.2 Residential Amenity
 - 12.9.8.3 Crime Prevention and Community Safety
 - 12.9.8.4 Population and Housing
 - 12.9.8.5 Home-Based Business Activities
 - 12.9.8.6 Retail and Business Services
 - 12.9.8.7 Parking

E13 Riverlink Precinct

Part A Riverlink Excluding Panthers Penrith Site

- 13.1 Urban Framework
 - 13.1.1 Landscape Structure
- 13.2 Connectivity
 - 13.2.1 Permeability
 - 13.2.2 Pedestrian and Cycle Network
- 13.3 Built Form
 - 13.3.1 Street Alignment and Setbacks
 - 13.3.2 Active Street Frontages
- 13.4 Future Character Strategy for Sub Precincts
 - 13.4.1 River Gateway
 - 13.4.2 Tourism and Recreation Precinct

Part B Panthers Penrith Precinct

- 13.5 Panthers Penrith Site
 - 13.5.1 Background
 - 13.5.2 Riverlink Precinct Plan
- 13.6 Panthers Penrith Precinct Vision
 - 13.6.1 Panthers Penrith Precinct Vision
 - 13.6.2 Precinct Objectives
- 13.7 Urban Framework
 - 13.7.1 Structure Plan
 - 13.7.2 Landscape Structure
 - 13.7.3 Sub Precincts
 - 13.7.4 Views
 - 13.7.5 Public Art Strategy
- 13.8 Connectivity
 - 13.8.1 Street Design and Character

Table of Contents

- 13.8.2 Pedestrian and Cycle Network
- 13.8.3 Public Transport
- 13.8.4 Traffic, Parking and Site Access
- 13.9 Built Form
 - 13.9.1 Street Alignment and Setbacks
 - 13.9.2 Active Street Frontages
 - 13.9.3 Awnings
 - 13.9.4 Building Depth and Bulk
 - 13.9.5 Building Articulation
 - 13.9.6 Architectural Excellence
- 13.10 Delivery
 - 13.10.1 Flooding and Drainage
 - 13.10.2 Utilities
 - 13.10.3 Staging

E14 St Clair

- 14.1 Land at Banks Drive and Mamre Road
 - 14.1.1 Land to which this section applies
 - 14.1.2 Aims of this Section
 - 14.1.3 Development Standards
 - 14.1.3.1 Setbacks
 - 14.1.3.2 Access
- 14.2 Land at Cook Parade
 - 14.2.1 Land to which this section applies
 - 14.2.2 Aims of this Section

E15 St Marys

Part A St Marys Town Centre

- 15.1. Land Use Controls
 - 15.1.1 Residential Development Controls
 - 15.1.2 Mixed Use Development Controls
- 15.2. Built Form Controls
 - 15.2.1 Building to Street Alignment and Street Setbacks
 - 15.2.2 Street Frontage Heights
 - 15.2.3 Maximum Building Heights and Lot Layout Requirements
 - 15.2.4 Building Depth and Bulk
 - 15.2.5 Boundary Setbacks and Building Separation
 - 15.2.6 Site Coverage and Deep Soil Zones
 - 15.2.7 Landscape Design
 - 15.2.8 Planting on Structures
- 15.3. Other Controls
 - 15.3.1 Pedestrian Amenity
 - 15.3.2 Access, Parking and Servicing
 - 15.3.3 Precinct Controls

F. Other relevant information

Appendix F1: Definitions

Appendix F2: Development Process

Appendix F3: DA Submission Requirements

Appendix F4: Technical Information

Table of Contents

A INTRODUCTION	2
1.1. WHAT IS THE NAME OF THIS PLAN?	2
1.2. WHAT DOES THE PLAN SEEK TO ACHIEVE?	2
1.3. WHERE DOES THE PLAN APPLY?	2
1.4. RELATIONSHIP OF THIS PLAN TO THE LEP AND OTHER PLANS AND POLICIES	3
1.5. REPEAL OF PLANS	3
1.6. HOW IS THE PLAN STRUCTURED?	3
1.7. WHERE DO I FIND THE RELEVANT CONTROLS?	4
1.8. WHAT IS THE DATE OF COMMENCEMENT FOR THE PLAN?	5

A Introduction

1.1 What is the name of this Plan?

This Plan is known as “Penrith Development Control Plan 2014”.

It has been prepared in accordance with Section 74C of the Environmental Planning and Assessment Act 1979 and clause 16 of the Environmental Planning and Assessment Regulation 2000.

1.2 What does the Plan seek to achieve?

The purpose of this Plan is:

- a) To provide guidance to people wishing to carry out development within the City of Penrith
- b) To promote development which is consistent with Council’s vision for the City of Penrith, namely, one of a sustainable and prosperous region with a harmony of urban and rural qualities with a strong commitment to environmental protection and enhancement.
- c) To ensure development incorporates the principles of sustainable development through the delivery of balanced social, economic and environmental outcomes.
- d) To encourage development which ‘lifts the bar’ in terms of delivering sustainable and healthy communities in the long term.
- e) To foster development that responds appropriately to the natural and built environment, in particular, vegetation, biodiversity corridors, significant waterways, riparian land, significant buildings and gardens, and scenic landscapes and views.
- f) To provide for an urban environment that is active, attractive and safe for residents and visitors.
- g) To ensure the quality of development in the City of Penrith is of a high standard.

1.3 Where does the Plan apply?

This Plan applies to all land within the Penrith Local Government Area. It covers the Land covered by the following Planning Instruments

- Penrith Local Environmental Plan 2010
- Penrith Local Environmental Plan 1991 (Environmental Heritage Conservation)
- Penrith Local Environmental Plan 1998 (Urban Land)
- Penrith Local Environmental Plan No.201 (Rural Lands)
- Penrith Interim Development Order No.13
- Penrith Interim Development Order No.47
- Penrith Interim Development Order No. 93
- State Environmental Planning Policy (Penrith Lakes Scheme) 1989
- State Environmental Planning Policy (Western Sydney Employment Area) 2009
- Sydney Regional Environmental Plan No. 30 – St Marys

1.4 Relationship of this Plan to the LEP and other plans and policies

This Plan must be read in conjunction with any environmental planning instrument that applies to the land. An environmental planning instrument includes a State Environmental Planning Policy (SEPP) (including Sydney Regional Environmental Plans (SREPs), now referred to as deemed SEPPs) or a Local Environmental Plan (LEP). Applicants should confirm which SEPPs apply and consider them when determining applicable development controls.

The provisions contained in this Plan supplement the provisions of the relevant environmental planning instrument. If there is any inconsistency between this Plan and relevant environmental planning instrument, the provisions of the relevant environmental planning instrument will prevail.

1.5 Repeal of plans

This Plan repeals the following Development Control Plans

- Penrith Development Control Plan 2006
- Penrith Development Control Plan 2010
- Werrington Mixed Use Area Development Control Plan
- Penrith City Centre Development Control Plan 2007
- Orchard Hills Development Control Code No. 1
- Orchard Hills Development Control Code No. 2
- Development Control Code - Orchard Hills subzone C

1.6 How is the Plan structured?

The Plan is divided into six parts:

Part A Introduction

This section provides details on the aims and purpose of the Plan and where and how it applies.

Part B Development Control Plan Principles

This section sets out Council's key sustainable development principles that apply to all development and how these principles should be used.

Part C Controls applying to all Land Uses

This section sets out the requirements for a range of issues that apply across the Penrith Local Government Area, including:

- a) Site Planning and Design Principles
- b) Vegetation Management
- c) Water Management
- d) Land Management
- e) Waste Management

- f) Landscape Design
- g) Culture and Heritage
- h) Public Domain
- i) Advertising and signage
- j) Transport, Access and Parking
- k) Subdivision
- l) Noise and Vibration
- m) Infrastructure and Services.

Part D Specific Land Uses / Activities

This section specifies the requirements relating to various types of land uses, including

- a) Rural Land Uses
- b) Residential Development
- c) Commercial and Retail Development
- d) Industrial Development
- e) Other Land Uses

Part E Key Precincts

This section details additional requirements relating to specific sites or areas in the City.

Part F Appendices

This section provides additional information to assist in the preparation of a development application that meets Council's requirements. This includes definitions of terms used, technical information requirements, notification and advertising requirements, and processes for development applications. Unless separately defined in a specific part of this Plan, terms used in this Plan have the same meaning as those adopted by the relevant environmental planning instrument.

Some sections of this Plan contain 'lifting the bar' requirements. 'Lifting the bar' establishes ways in which applicants can demonstrate additional commitment to the key Development Control Plan principles. Demonstration of this commitment may lead to Council considering variation of development controls.

Other relevant information: provides a list of additional information sources and legislation for consideration.

1.7 Where do I find the relevant controls?

The layered approach of this Plan means that some parts are relevant to all development, some to specific types of development or activities and some to specific land or precincts. Development may be determined as being either minor or major, with a higher level of submission and assessment required for more complex or larger proposals, or sites which are highly constrained.

- Step 1 → Establish the zoning, permissibility and planning controls that apply to the proposed use and the property under the relevant environmental planning instrument.

- Step 2→** Understand and apply the DCP Principles for Penrith in Part B of this Plan. These principles apply to all development.
- Step 3→** Determine which controls or parts of this Plan apply to your development proposal. Remember some City wide provisions such as flooding, salinity and bushfire will only apply if these natural hazards affect your site.
- Sites identified or located in the vicinity of a heritage item, heritage conservation area or archaeological site will need to consider the Culture and Heritage chapter in Part C of this Plan.
- If you are uncertain whether a section of this Plan applies to your development, you should check that section, or ring Council for assistance.
- Step 4→** Understand the development application process and submission requirements. An overview of the application and assessment process, together with the submission requirements, is provided in Appendix F.
- Notification and advertising, and technical information requirements are also provided in Appendix F.
- In addition, you can check any words or terms you may be unsure of in Appendix F.
- Step 5→** Contact Council if you require further clarification on any aspect of this Plan or for advice on preparing your development application or determining whether your proposal is considered minor or major development.

1.8 What is the date of commencement for the Plan?

This Plan was adopted by Penrith City Council on 23 March 2015 and came into effect on 17 April 2015. The following is a list of the amendments to the DCP:

Amendment No.	Chapter	Change	Adopted by Council	Date of commencement
1	E7 Part B, Glenmore Park Stage 2	<ul style="list-style-type: none"> - Lot size range reduced to 450-1000m² - Setbacks reduced - Amending the maximum dwelling yield in Precinct C to 344 dwellings. 	7 December 2015	19 February 2016 (date of commencement of Amendment 6 to LEP 2010)
2	C5 Waste Management	To broaden the objectives relating to waste management and introduce a number of new controls for medium and high density residential developments	27 June 2016	7 July 2016

3	E11 Part A – Penrith E11 Part C – 164 Station Street, Penrith	Introduce site-specific controls for 164 Station Street, Penrith. Remove previous controls for 164 Station Street, Penrith previously located within Part A - Penrith	19 December 2016	12 January 2017
4.1	E6 Erskine Business Park, C10 Transport, Access and Parking	To align the DCP and the State Significant Development (SSD 6917) consent for the Oakdale South Industrial Area and provide consistency of the built form across the site.	28 May 2018	21 June 2018
4.2	C3 Water Management, C6 Landscape Design, C13 Infrastructure and Services, and, F3 DA Submission Requirements	Update references and information in the DCP to be consistent with Council's <i>Stormwater Drainage Specification for Building Developments</i> policy (adopted November 2016).	28 May 2018	21 June 2018
4.5	D2 Residential Development, E5 Emu Plains, E8 Kingswood, and E15 St Marys / North St Marys	To revise controls at affected locations that will clarify Council's position relating to road construction, land dedication and guide development on affected lots.	28 May 2018	21 June 2018
5	D2 Residential Development D5 Other Land Uses	To revise controls for Multi Dwelling Housing and introduce controls for Boarding Houses.	10 December 2018	21 December 2018

Table of Contents

DCP PRINCIPLES	2
1.1. BACKGROUND	2
1.1.1. COUNCIL'S COMMITMENT TO SUSTAINABILITY	2
1.1.2. SUSTAINABILITY AND DEVELOPMENT CONTROL	2
1.1.3. KEY PRINCIPLES FOR THIS PLAN	2
1.1.4. HOW TO USE THESE PRINCIPLES	2
1.2. PRINCIPLES	3

DCP Principles

1.1. Background

1.1.1. Council's Commitment to Sustainability

Penrith City Council has made a firm commitment to building a Sustainable City. This commitment has been clearly articulated in 'Penrith's Principles for a Sustainable City.' These principles have subsequently been reflected in the Sustainable Penrith Program.

The Sustainable Penrith Program commits Council to apply the principles of sustainability in all of its operations. The program aims to ensure that Council's decisions, policies and actions should maintain or improve environmental, social and economic outcomes for future generations. A number of action plans and policies addressing specific sustainability issues have been developed under this program to guide Council's efforts towards a sustainable City.

1.1.2. Sustainability and Development Control

The preparation of this Plan has provided Council with an opportunity to extend its commitment to sustainability and progress the creation of a Sustainable Penrith. In its role as regulator, Council is able to encourage the inclusion of sustainable design principles and land management practices in future development.

To build a sustainable city, Council needs to ensure that development of land is responsive to the needs of current and future generations. The overriding goal of making Penrith a sustainable city is woven into every section of this Plan and has guided the development of the provisions contained within it.

1.1.3. Key Principles for this Plan

Transforming the City of Penrith into a sustainable city will require cooperation between all levels of government, resource managers, the business sector, community groups and all citizens. 'Penrith's Principles for a Sustainable City' have been adopted as the key principles for this Plan to guide our journey towards sustainability. The principles are supported by a series of objectives to help in interpreting these principles. A brief description of the principles and objectives, how they relate to sustainability and how they are reflected in the provisions contained within this Plan appear below.

1.1.4. How to Use these Principles

The principles and objectives set out below should be addressed as part of any development application to Council.

The principles and objectives will be satisfied by ensuring that any proposed development is in accordance with the development controls set out in the remainder of this Plan. Some examples of these controls and the desired outcomes are listed under each of the principles.

If a proposed development is unable to comply with all of the development controls then it will need to justify how non-compliance will be addressed in other ways to satisfy this Plan's principles.

The controls in this Plan are not intended to prevent new and innovative ways of addressing the principles and objectives in this section as long as the objectives can be addressed.

1.2. Principles

Principle 1: Provide a long term vision for cities, based on sustainability; intergenerational, social, economic and political equity; and their individuality.

A. Objectives

- We plan responsibly for now and the future.

The aims of this Plan, together with Council's strategic plans, set a vision for sustainable development, and ultimately, a sustainable city. Objectives within individual sections express the way towards a more sustainable city and should always be read in that context. The exemplar controls outlined in this Plan and supported by Penrith LEP 2010 demonstrate that Council is prepared to recognise developers and individuals who 'lift the bar' and drive the built form of the City closer towards the vision expressed.

This Plan reflects this principle by expressing an overall commitment to sustainability through:

- The format and structure of this Plan;
- Integration of Penrith's Principles for a Sustainable City throughout the document;
- Linking areas of objectives and controls to the overarching principles of sustainability; and
- Including information which explains how individual controls contribute to the creation of a sustainable city.

Principle 2: Achieve long term economic and social security.

A. Objectives

- We have access to what we need.

Environmental sustainability is only one part of the picture. To have a truly sustainable city, economic and social aspects must also be considered as part of the triple bottom line.

This Plan promotes sustainable economic growth through:

- Encouraging innovative and sustainable use of rural, industrial, commercial and residential land;
- Building on the existing strengths of the local and regional economy, by providing guidance for industrial and commercial development within the City;
- Ensuring that industrial and commercial development is responsibly designed and built;
- Helping protect rural lands from fragmentation;
- Helping reduce the negative impacts of necessary activities (such as manufacturing, waste disposal and some agricultural activities);
- Providing specific controls for transport corridors, in recognition of the key role they play in moving people and goods around our city, our region and our state; and
- Encouraging the integration of housing with other land uses which provide employment, social and cultural opportunities.

This Plan promotes social sustainability through:

- Encouraging the use of the principles of universal design, so that the public domain is accessible to people in all stages of life and with all levels of mobility;
- Encouraging buildings to be designed with the health and wellbeing of their future occupants in mind;
- Providing design guidelines for a variety of housing forms to accommodate people in all stages of life and with all levels of mobility;
- Encouraging the development of communities through allowing for (and designing) community spaces, both indoor and outdoor, providing opportunities for meeting and gathering and community interaction;
- Encouraging a range of uses and employment opportunities to create a mixed income and mixed demographic community;
- Providing guidelines to create a range of recreational and leisure opportunities; and
- Adopting the principles of 'Crime Prevention through Environmental Design' (CPTED), to assist in making the public domain a safer place.

Principle 3: Recognise the intrinsic value of biodiversity and natural ecosystems, and protect and restore them.

A. Objectives

- Our natural habitats are healthy

This Plan recognises the value of the surrounding environment and will minimise the impact of development on that environment by:

- Requiring all design to be based on a comprehensive site analysis, to ensure that development on a site reflects each site's unique conditions;
- Ensuring that any modification of the existing land form required to facilitate development is undertaken to minimise the impact on surrounding lands; and
- Including provisions to reduce the likelihood of development or activities increasing the salinity of land.

This Plan promotes biodiversity conservation through:

- Protection of known areas of biodiversity value;
- Protection of threatened species and ecological communities;
- Protection of watercourses, wetlands and riparian corridors;
- Protection of remnant native bushland; and
- Requiring that all significant areas of vegetation be assessed to determine their value prior to any development being designed for the site.

This Plan helps to reverse previous negative impacts on biodiversity conservation through:

- Encouraging replanting of key identified corridors, including riparian corridors; and
- Encouraging the use of plant species native to the area in all forms of landscaping.

This Plan helps to reduce the negative impact of development on air quality through encouraging alternate means of transport (e.g. cycling and walking).

This Plan helps to minimise the impact of poor air quality on amenity through:

- Encouraging the planting of particular species along main roads, which have proven to be effective at absorbing pollutants from motor vehicles; and
- Requiring the provision of buffer zones between polluting land uses and adjacent areas which may be sensitive to reduction in air quality.

This Plan helps to minimise the negative impact of development on water quality through:

- Minimising the risk of accidental pollution of surface and ground water sources through appropriate setbacks of potentially polluting activities from watercourses;
- Requiring soil testing to determine appropriate locations for water treatment activities;
- Encouraging the retention or replacement of vegetation along riparian corridors;
- Requiring that water quality be monitored throughout the construction process, and occasionally during occupation; and
- Requiring responsible use and storage of possible pollutants.

Principle 4: Enable communities to minimise their ecological footprint.

A. Objectives

- We use our resources wisely and take responsibility for our levels of consumption.

The ecological footprint of a city is a theoretical calculation of the land required to support that city in terms of its consumption of resources like food, energy and water, as well as for the disposal of the waste it produces. Reducing our ecological footprint means reducing this theoretical land area and represents an increase in the overall sustainability of the city.

A reduction in the ecological footprint will almost always mean an increase in the efficiency of a city's operation, either through consumption of fewer resources, production of less waste or both. It should not, however, result in a transfer of problems elsewhere.

This Plan assists in the reduction of Penrith's ecological footprint by:

- Encouraging a reduction in the amount of waste going to landfill through the inclusion of provisions relating to responsible waste management, recycling and resource reuse, and materials selection;
- Encouraging increased water re-use, either through harvesting of rainfall or the re-use of grey water, to reduce the demand for potable water;
- Encouraging the use of water efficient and energy efficient appliances; and
- Applying standards for energy efficiency to all forms of development to encourage buildings that minimise the use of electricity and gas as energy inputs.

Reducing the City's ecological footprint through the inclusion of energy efficiency principles will have the added benefits of mitigating the impacts of climate change, through decreased emission of greenhouse gases.

This Plan will also help Penrith adapt to the likely impacts of climate change by:

- Encouraging buildings to be designed to maximise natural ventilation and temperature regulation;
- Requiring drought resistant planting and landscaping;
- Requiring the harvesting and re-use of rainwater through tanks, dams and other means; and
- Requiring that the design of dwellings aims to minimise their vulnerability to extreme weather events and bushfires.

Principle 5: Build on the characteristics of ecosystems in the development and nurturing of healthy and sustainable cities.

A. Objectives

- Our public spaces encourage safe and healthy communities.
- Our physical infrastructure is adaptable and responds to changing needs.

Natural ecosystems are inherently more sustainable than artificial ones. Thus cities as artificial ecosystems can learn from and better reflect the processes and systems of the natural world to improve their sustainability.

The characteristics of natural ecosystems include diversity, an ability to adapt, interconnectedness, resilience, regenerative capacity and symbiosis. In nature all resources are valued – there is no waste. These are all traits which can increase the sustainability of a city and which this Plan will try to encourage in development within Penrith.

This Plan will encourage development in Penrith to learn from natural ecosystems by:

- Including provisions which require development to consider all aspects of the natural environment in their design, including topography and the water cycle;
- Providing standards to guide mixed use development to help provide a diverse urban area;
- Requiring housing to consider the changing life cycle of the occupants in its design;
- Helping to minimise land use conflict through requirements for buffer zones and other measures;
- Requiring the provision of adaptable and inclusive infrastructure which meets the needs of development and is designed to accommodate likely future needs;
- Encouraging innovative responses to the provision of infrastructure, such as car parks, drainage systems, etc. which adapt to changing circumstances and mimic natural ecosystems; and
- Incorporating the principles of Universal Design, adapting our built environments so they are suitable for all.

Principle 6: Recognise and build on the distinctive characteristics of cities, including their human and cultural values, history and natural systems.

A. Objectives

- We build on our strengths, value our heritage, celebrate our cultural diversity and foster

creativity.

Sustainability cannot be achieved if those promoting it ignore the context of the city and the people within it. Penrith City has its own set of unique characteristics, values and history which are all an integral part of where our city has come from and where it is heading. For Penrith to be a truly sustainable city, these characteristics, values and history must be recognised in our past and reflected in our future.

This Plan will help to recognise our past through:

- Including European heritage provisions, which protect our built heritage of the last 200 years and the people who contributed to the framework and fabric of our city;
- Including Aboriginal heritage provisions which recognise the original custodians of the land, their role in protecting it and their ongoing role in providing diversity in our society and a link with the past; and
- Including social planning provisions that seek to recognise and reinforce the cultural and social character of key areas.

This Plan will build on the distinct characteristics of Penrith by:

- Recognising that particular types of land use within the City require specific controls;
- Developing character statements for individual precincts that have unique features or development requirements;
- Including provisions that are aimed at protecting the scenic and landscape character of Penrith; and
- Including provisions that encourage development in Penrith to respond to Penrith's unique environment, particularly climate, soil, topography and natural hazards.

Principle 7: Empower people and foster participation.

A. Objectives

- We have a say in our future.

For a city to be sustainable, it must have the support and commitment of all sections of the community, not just those who have the means to make their voice heard. An increase in sustainability will only be achieved if the majority of the community recognise it as a legitimate goal and work together to achieve it.

This Plan will help to provide people with an opportunity to have a say in their future by:

- Requiring that certain development be advertised, to give neighbours and others that might be affected the opportunity to comment;
- Requiring that all likely affected parties are told about any development which substantially breaches outlined development standards;
- Providing information about the type of development that can be expected in Penrith; and
- Providing people with the opportunity to help guide development in Penrith, through the exhibition of this Plan and any future amendments.

Principle 8: Expand and enable cooperative networks to work towards a common, sustainable future.

A. Objectives

- We play an active role in our communities

Sustainability is a worldwide issue and Penrith cannot hope to achieve it on its own. Other local government areas within Australia and worldwide are also making advances towards sustainability and it is vital that we learn from their experiences.

This Plan will learn from others by being reviewed on a regular basis, taking account of best practice in promoting sustainable development both nationally and internationally. It will also learn from others through seeking and considering comments from the community and developers during the development and ongoing review of this Plan.

This Plan will assist in sharing knowledge through providing links to additional information throughout the text and through being publicly available, free of charge, through Council's web site.

This Plan will assist people to play an active role in their communities through:

- Encouraging the provision of community spaces, both (internal and external) for future developments within the City. Use of these spaces will help to encourage meeting and gathering and help develop a sense of community, which will in turn encourage people to have a say in how their community develops;
- Encouraging development to consider social needs and potential social impacts, to minimise and mitigate against potential impacts within both the existing and future communities;
- Encouraging a diverse community, which in turn helps foster a feeling of inclusiveness;
- Providing opportunities for people to participate in decision making; and
- Encouraging developers to recognise the human need to connect with nature, with their community and with their city, and take this concept into consideration in development design.

Principle 9: Promote sustainable production and consumption, through appropriate use of environmentally sound technologies and effective demand management.

A. Objectives

- We encourage sustainable production and technologies.

This Plan will help encourage sustainable production through:

- Requiring, where appropriate, Waste Management Plans to be prepared that consider all aspects of waste generation, recycling and disposal during design, demolition, construction and operation.
- Encouraging developers to source construction and fit out materials from sustainable sources;
- Encouraging developers and the community to consider the life cycle costs of products installed and used in construction and operation of buildings; and

- Encouraging the adoption of innovative technologies and designs, where they will have a positive sustainability outcome without an adverse impact on the amenity of the surrounding area.

This Plan will demonstrate a commitment to sustainable technologies through:

- Encouraging developers to consider technology at the design stage, so that necessary infrastructure can be installed, regardless of whether or not it can be used to its full effect at the time of construction; and
- Providing controls that, where possible, have flexibility in the way they can be met so new technologies can be adopted as they become available.

Principle 10: Enable continual improvement, based on accountability, transparency and good governance.

A. Objectives

- We demonstrate accountability, transparency and ethical conduct.

Good urban governance requires robust processes towards achieving the transformation of cities to sustainability through continual improvement.

This Plan contributes towards continual improvement through:

- Including within it exemplar provisions which can be measured, to allow benchmarking of the overall change in the level of sustainability measures being implemented by development in Penrith;
- Being subject to ongoing review (as with all planning documents and policies within Penrith), so that achievements can be measured and controls which are not resulting in the expected outcome can be changed; and
- Providing clear and comprehensive information to developers and the community about the development process and what type and standard of development the Council would like to see in Penrith.

Table of Contents

C1 SITE PLANNING AND DESIGN PRINCIPLES	2
1.1. SITE PLANNING	3
1.1.1. SITE ANALYSIS	4
1.1.2. KEY AREAS WITH SCENIC AND LANDSCAPE VALUES	5
1.2. DESIGN PRINCIPLES	11
1.2.1. APPLICATION OF CERTIFICATION SYSTEM	11
1.2.2. BUILT FORM - ENERGY EFFICIENCY AND CONSERVATION	11
1.2.3. BUILDING FORM - HEIGHT, BULK AND SCALE	12
1.2.4. RESPONDING TO THE SITE'S TOPOGRAPHY AND LANDFORM	13
1.2.5. SAFETY AND SECURITY (PRINCIPLES OF CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN)	17
1.2.6 MAXIMISING ACCESS AND ADAPTABILITY	35
1.2.7 ADULT CHANGE FACILITIES	38

C1 Site Planning and Design Principles

A. Background

What is Site Planning?

Site planning is a design tool used to determine an appropriate development outcome based on an analysis of the development site's constraints.

Good site planning starts with a comprehensive analysis of the site, within the immediate and regional context. It encompasses broader decisions regarding building orientation and placement on the site, including location of associated structures and infrastructure such as access and circulation arrangements.

The complexity of the site planning process will vary depending on the scale and nature of the proposed development and the constraints affecting the site. Minor development may only require a site plan and a simple accompanying statement, whereas development of a certain scale or nature or where the site is highly constrained, may result in more detailed plans and supporting technical reports being required to support a development application. This should be discussed with officers from Council's Development Services Department prior to lodgement of the development application.

Adopting a Comprehensive Site Planning Process

Undertaking a thorough site analysis of the site assists in guiding the development concept and improves development outcomes through improvements in sustainability and design quality. Adopting good site planning principles results in improved development outcomes that translate to:

- **Economic sustainability and cost benefits:** A considered site design will reduce the demolition, construction and operational costs of buildings;
- **Social Sustainability:** Addressing the needs of the local community will improve quality of life, local vitality and enhance community identity;
- **Environmental Sustainability:** Ensuring the proposal minimises impact or even enhances environmental impacts; and
- **Better Planning and Urban Design Outcomes:** Achieving a development that integrates with the desired surrounding built form and landscape character.

What is the Aim of this Section of the Plan?

This Plan seeks to achieve high quality, sustainable development outcomes for all development requiring consent or approval by Council. The Plan seeks to achieve this by providing a range of controls for development that encompass various design and sustainability criteria.

This Section provides an overview of the key site planning and design principles applicable to all developments. It illustrates how the design of any development should adopt an integrated approach to improve design quality and sustainability.

B. General Objectives

- a) To improve the sustainability of development through improved site planning that takes into account social, economic and environmental opportunities and constraints;
- b) To ensure that developments address the key principles of site planning, urban design and design excellence by:
 - i) responding to the natural topography and landform of the site;

- ii) protecting areas of scenic or visual importance in the City of Penrith;
 - iii) adopting a height, massing and scale that accords with the analysis of the site and minimises visual impact;
 - iv) incorporating safety and security measures in its design;
 - v) utilising, where possible, sustainable materials that minimise impacts on the environment, maintenance and waste; and
 - vi) incorporating the principles of universal design to maximise accessibility for all people.
- c) To ensure that non-residential buildings (and their future uses) are designed to incorporate design and sustainable excellence by:
- i) being accredited under the Australian Buildings Greenhouse Ratings certification system, now part of the National Australian Built Environment Rating System (NABERS) and/or Green Star certification system, whichever is applicable; and
 - ii) ensuring that energy and water consumption is minimised.

C. How to Use this Section

This Section summarises the key criteria for achieving a high quality design and sustainable development outcome. The Section should be read in conjunction with the other relevant sections of this Plan and relevant planning instruments.

D. Other Relevant Sources of Information

Some additional sources of relevant information include:

- a) **Building Code of Australia (BCA):** The BCA contains provisions related to access for people with a disability. Where the provision of the BCA is a higher standard than this Plan, the provision in the BCA will prevail.
- b) **State Environmental Planning Policy 65 - Design Quality of Residential Flat Development and the associated Residential Flat Design Code (2002):** These apply only to residential flat buildings of a particular height and scale; and
- c) **AMCORD (Australian Model Code for Residential Development) (1995):** This applies to residential development.

1.1. Site Planning

Background

The first rule of site planning is to **understand the site**. Site planning requires the collection of information on existing natural, constructed and other features of the site, with the aim of:

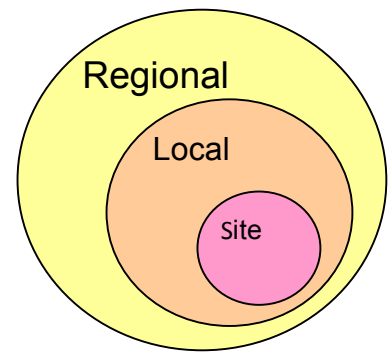
- a) Understanding the existing form of a locality and the relationships that have caused its development;
- b) Identifying the qualities and character of the existing urban form; and
- c) Identifying a successful development pattern and inappropriate developments.

The level of analysis required will vary depending on the scale of the proposal. Different levels of analysis are:

- a) **Regional analysis** (the regional context in relation to nearest urban centres, major services and infrastructure, and broad environmental catchments);

b) Local analysis (the local context around the site including local services and infrastructure, local environmental issues, and the local built form and landscape context of the site); and

c) Site analysis (the immediate context around and within the site including adjacent built form and services, site environmental issues and key site opportunities and constraints).



B. Objectives

- a) To ensure that the site's context has been analysed and considered to ensure that development is designed on a 'whole of building' approach; and
- b) To protect and enhance areas with high scenic and landscapes values which contribute to the character of the City of Penrith.

1.1.1. Site Analysis

Site analysis involves looking at the features of the site and the immediate surrounding area and, where possible, presenting the information in a diagrammatical plan(s). It includes the site and the immediate context – usually up to 50m or 100m in any direction from the site (depending on the scale of development, the proposed land use and its impacts).

Site analysis should include plan and section drawings of the existing features of the site at the same scale as the site and landscape plan. That plan should include the following minimum elements:

- the site's dimensions and areas;
- north point and the site's orientation (e.g. solar access);
- topography (with 0.5m to 1m contours);
- road and pedestrian access points;
- services and infrastructure (e.g. electricity poles, stormwater drainage lines, natural drainage, kerb crossings and easements);
- rights of way;
- views to and from the site (more detail is provided below);
- site overland flows and drainage patterns;
- geotechnical characteristics of the site and suitability for development;
- location of site in relation to shops, community facilities and transport;
- heritage items on site or on adjoining properties;
- form and character of adjacent and opposite buildings in the streetscape, including both sides of any street that the development fronts;
- location and use of any existing buildings or built features on the site;
- location and important characteristics of adjacent public, communal and private open spaces;
- location of significant vegetation on the site;
- location of any significant noise sources on and in the vicinity of the site; and

- assessment of site contamination and/or remediation.

Not all of the elements listed above will be relevant for every development or site. You are strongly recommended to contact Council's Development Services Department to discuss the requirements for your proposal prior to lodgement of a development application.

Further information on site planning can be found in Appendix F4 – Technical Information.

1.1.2. Key Areas with Scenic and Landscape Values

A. Background

This Section focuses on particular locations in the City of Penrith that are visible from major roads and other public places and have important scenic and landscape values. These locations are identified on the *Penrith LEP 2010 Scenic and Landscape Values Map*.

Key to the site analysis and planning process is minimising likely visual impact as a result of new development. This section identifies the key principles that should be addressed in a visual impact assessment and when such an assessment is required.

The locations identified on the *Penrith LEP 2010 Scenic and Landscape Values Map* include, but are not limited to:

- Land along the Blue Mountains escarpment;
- Land which has views to and from the Nepean River;
- Land within the riverine corridors of South and Ropes Creek;
- Land along major roads, including the M4 Motorway;
- Land that can be viewed from the Main Western Railway Line;
- Land within the Mulgoa Valley precinct, including vistas from major heritage items in the valley (see the Mulgoa Valley Section of this Plan);
- Land within Industrial Precincts 4 and 8 which have views to and from the Nepean River and the Blue Mountains escarpment, and within Industrial Precincts 7 and 9 which can be viewed from elevated locations elsewhere in the City (see the Industrial Development Section of this Plan); and
- Land at important gateways. Table C1.1 and Figure C1.1 below identify gateways in the City of Penrith. The design of new development at these locations requires a special response given their visual sensitivity.

Gateways are distinctive sites or spatial sequences which denote a change in a spatial or visual experience. They have a variety of configurations and scales from regional significance to neighbourhood scale. They can be marked by changes such as land use, density of development, vegetation, topography and space. Some are site specific places of environmental identity and others provide a sense of transition. They can be entrances and destinations. Gateways may also be located at sites such as significant community congregation areas, public art installations, municipal buildings and ceremonial places. Types of gateways in Penrith City providing a sense of arrival or transition may include crossings, village bookends, land use interfaces, intersections and cultural gateways.

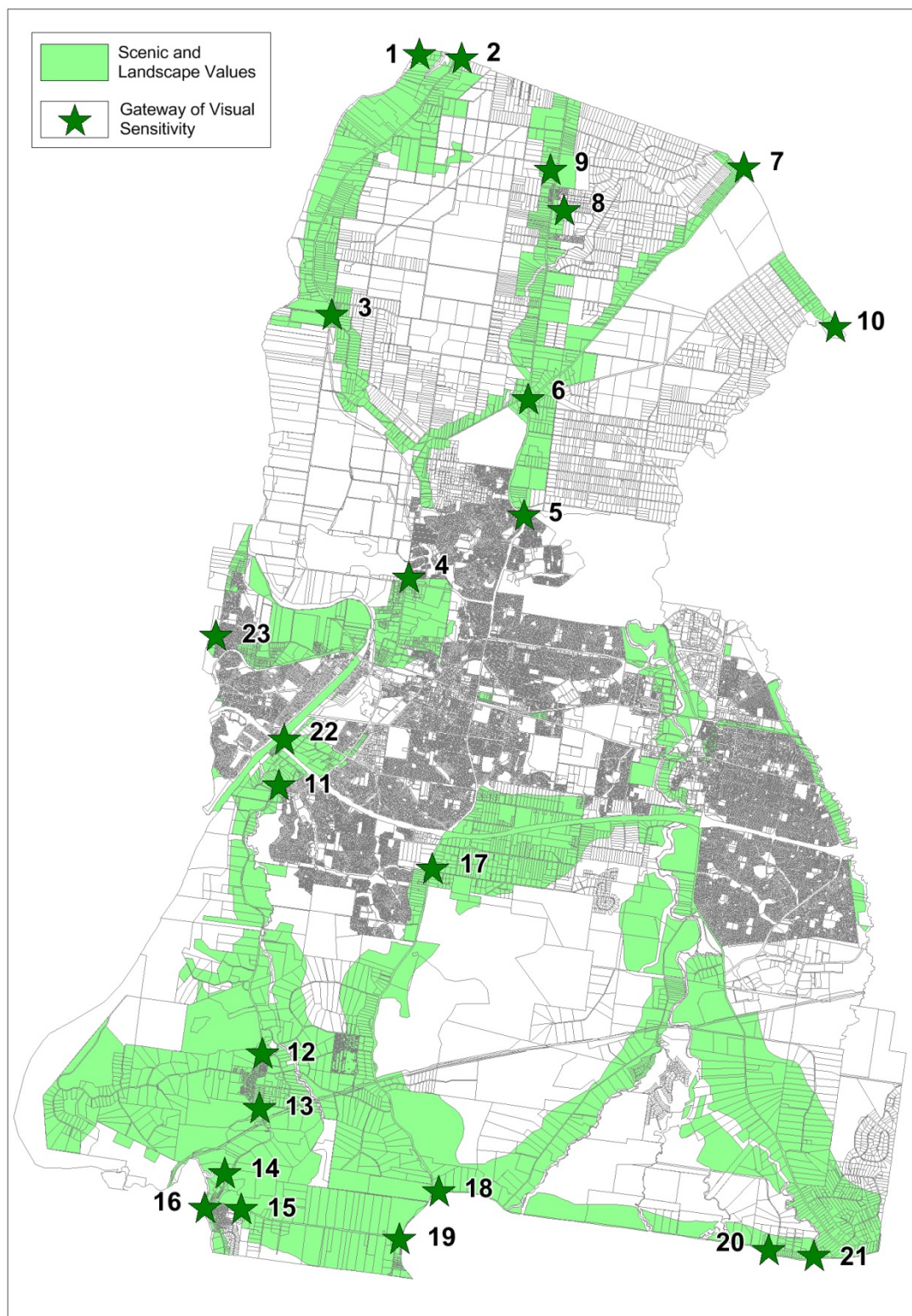
See the Technical Information Appendix for a more detailed definition of gateways.

Table C1.1: Gateways and Areas of Visual Sensitivity

Ref	Types of Gateways				Description
	Village bookends	Crossings	Land use interface	Intersections	
1		✓			Yarramundi crossing
2			✓	✓	Hawkesbury City Council boundary/Castlereagh Road
3	✓				Castlereagh rural centre/village
4			✓		Residential/ industrial interface
5			✓		Former ADI site suburban edge
6				✓	Intersection Cranebrook, Londonderry and The Northern Roads
7				✓	Richmond Road intersection
8	✓				Londonderry village - south
9	✓				Londonderry village - north
10		✓			Penrith City Council and Hawkesbury City Council boundaries / Richmond Road
11			✓		Glenmore Park west/rural interface
12	✓				Mulgoa village - north
13	✓				Mulgoa village - south
14	✓				Wallacia village - north
15	✓				Wallacia village - east
16	✓	✓			Wallacia village - west

Ref	Types of Gateways				Description
	Village bookends	Crossings	Land use interface	Intersections	
17			✓		Glenmore Park east/rural interface
18				✓	Elizabeth Drive intersection
19	✓				Luddenham village - north
20	✓				Kemps Creek rural centre - west
21	✓				Kemps Creek rural centre - east
22		✓			M4 entry over the Nepean River
23		✓		✓	Blue Mountains/Penrith Council boundary at Old Bathurst Road

Figure C1.1: Gateways and Areas of Visual Sensitivity



B. Principles

The following key principles should be addressed in a visual impact assessment to minimise the visual impact of the development and protect areas with high scenic and landscape values:

- Protect and enhance the visual diversity and scenic quality of gateways and view sheds within the City of Penrith, including detailed, mid and long range views;
- Protect and enhance the key regional natural features that contribute to the character of Penrith as a City, including the Blue Mountains escarpment, the Nepean River, other riparian corridors and bushland reserves;
- Protect, maintain and enhance other important natural features, including ridgelines, hillsides, watercourses and riparian corridors, vegetation and landform;
- Protect, maintain and enhance backdrops and settings that contribute to the local identity;
- Protect, maintain and enhance views and vistas from vantage points, including main road corridors and other public places;
- Conserve and enhance historic landscapes, properties and their curtilages;
- Plan and site new development to enhance local identity. Development is to effectively integrate with the surrounding landscape so that any change as a result of the new development does not compromise the character of the landscape. Issues such as context, scale, size, built form and height, setbacks/buffers, landform, structural space (private and public), streetscape, vegetation and infrastructure are to be addressed;
- Strengthen local identity through consistency and/or compatibility of design. Design development to take into account issues such as scale, form, line, colour, texture, lighting, existing vegetation, open space and landscaping;
- Use vegetation to frame scenic views, provide interest or change, define new space, provide backdrops and visually connect all other elements within the setting; and
- At gateways, reinforce the distinct experience of arrival or passing from one landscape character type to the next, through legible site planning and design.

C. Controls

- 1) New proposals on land identified in the LEP Scenic and Landscape Values Map (including gateway sites) or on land zoned E1 National Parks and Nature Reserves or E2 Environmental Conservation, are to submit a visual impact assessment with their development application. This assessment involves describing, analysing and evaluating the visual impacts of the proposed development, and identifying measures to minimise the impacts and ensure the development is sympathetic to the scenic and landscape character of the area.
- 2) Table C1.2 below identifies what type of visual impact assessment must be prepared and who can prepare it. The Submission Requirements Appendix provides details on the requirements for both types of visual impact assessment. In the table below, there are some parameters that require an opinion or determination from Council. In this regard, applicants will need to contact Council's Development Services Department for advice.

Table C1.2: Visual Impact Assessment Requirements

Category	Definition	Type of Visual Impact Assessment (VIA)	Who can prepare it?
1	<ul style="list-style-type: none">• New single dwelling houses or significant alterations and additions to single dwelling houses• Dual occupancy and secondary dwellings• Minor alterations and additions to commercial and industrial development as determined by Council• Other minor development as determined by Council	VIA 1	The designer of the development
2	<ul style="list-style-type: none">• Any development located in proximity to a gateway• Any development in category 1 which in the opinion of Council would have a significant visual impact on the locality• Any other development.	VIA 2	Business or individual with a professional background in design and experienced in visual assessment (e.g. architects, landscape architects, urban designers or town planners)

1.2. Design Principles

A. Background

This Section of the Plan highlights the general design principles for development and illustrates how compliance with the objectives and controls will achieve a higher standard of built form and design excellence.

B. Objectives

- a) To ensure that development is undertaken in a sustainable manner, demonstrating this through the application of the Building Sustainability Index (BASIX), Green Star and/or Australian Buildings Greenhouse Ratings certification system, where appropriate;
- b) To ensure that development is designed on a 'whole of building' approach by:
 - i) responding to the site's context, the desired scale and character of an area, and minimising impacts on key views, scenic values and where applicable, rural character;
 - ii) responding to climatic and contemporary environmental conditions by:
 - encouraging passive solar building design;
 - allowing reasonable daylight access to all developments and the public domain;
 - reducing the necessity for, or improve the control of, mechanical heating and cooling;
 - reducing the energy consumed by installed appliances and equipment;
 - improving the indoor environmental quality of occupants;
 - minimising greenhouse gas emissions;
 - iii) minimising likely bulk and scale impacts of a building;
 - iv) considering the natural topography and landform and minimise excavation and likely visual impacts of the development;
 - v) ensuring that the development (including the public domain):
 - has incorporated the Crime Prevention Through Environmental Design (CPTED) principles of surveillance, access control, territorial management and space management into its design; and
 - is accessible and useable for all members of the community.

1.2.1. Application of Certification System

- a) Non-residential developments, including mixed-use developments, with a construction cost of \$1 million or more are to demonstrate a commitment to achieving no less than 4 stars under Green Star or 4.5 stars under the Australian Building Greenhouse Rating system, now part of the National Australian Built Environment Rating System (NABERS).

1.2.2. Built Form - Energy Efficiency and Conservation

- a) The selection criteria for construction materials, including internal fit-out work, should include detailed documentation of their energy efficiency properties.
- b) Buildings should be designed on passive solar design principles which:
 - i) Respond to orientation to maximise the northerly aspect and solar access in the cooler periods;

- ii) Reduce overheating in summer and promote solar gain in winter; and
- iii) Ensure there is adequate cross flow of air by utilising natural ventilation, resulting in a reduction in the use of mechanical ventilation and/or air-conditioning systems.
- c) The future use and occupants of the building should be considered in the design and location of building services/equipment to ensure that:
 - i) The thermal comfort of occupants is optimised through zoning sections of the floor area to
 - ii) of building services is provided enable individual control of heating and cooling;
 - iii) Lighting systems and fittings have reduced energy consumption that are also appropriate for the use/activity located in that part of the building;
 - iv) The equipment or service will be used and its future use will not affect other elements of sustainability; and
 - v) Sub-metering to individual tenancies within the development to enable individual monitoring of consumption performance.
- d) Common and service areas in the building should incorporate energy and water efficiency/conservation measures in their design and location.

Figure C1.2: Diagram showing application of design principles to enhance amenity and to provide good water and energy efficiency. (Source: Urban: sustainable solutions for a developing Australia (January 2008) Socially Sound p32.)

1.2.3. Building Form - Height, Bulk and Scale

- a) **Context:** An applicant must demonstrate how all proposed buildings are consistent with the height, bulk and scale of adjacent buildings and buildings of a similar type and use.

- b) Character:** An applicant must demonstrate how any building's height, bulk and scale will avoid or minimise negative impacts on an area's landscape, scenic or rural character (where relevant) taking into account the topography of the area, the surrounding landscape and views to and from the site.
- c) Articulation:** Where the dimension of the building is 20m or more, an applicant must demonstrate how the building or surface has been articulated (either through built form or materials) to minimise impact on bulk and scale.
- d) Overshadowing:** Building locations, height and setbacks should seek to minimise any additional overshadowing of adjacent buildings and/or public spaces where there would be a significant reduction in amenity for users of those buildings/spaces.
- e) Setbacks/Separations:** Buildings should be sufficiently set back from property boundaries and other buildings to:
 - i) Maintain consistency with the street context and streetscape character, especially street/front setbacks;
 - ii) Maximise visual and acoustic privacy, especially for sensitive land uses;
 - iii) Maximise deep root planting areas that will support landscape and significant tree plantings integrated with the built form, enhancing the streetscape character and reducing a building's visual impact and scale;
 - iv) Maximise permeable surface areas for stormwater management; and
 - v) Minimise overshadowing.
- f) Building Façade Treatment:** The aim is to ensure that any built form will:
 - i) promote a high architectural quality commensurate with the type of building and land use;
 - ii) adopt façade treatments which define, activate and enhance the public domain and street character;
 - iii) ensure that building elements are integrated into the overall building form and façade design;
 - iv) compose façades with an appropriate scale, rhythm and proportion that responds to the building's desired contextual character;
 - v) design façades to reflect the orientation of the site using elements such as sun shading, light shelves and appropriate glazing as environmental controls;
 - vi) express important corners by giving visual prominence to parts of the façade, for example, a change in building articulation, material or colour, roof expression or building height, and
 - vii) co-ordinate and integrate building services to improve the visual presentation.
- g) Roof Design: The roof is an important architectural element of any building and:**
 - i) the shape and form of the roof should respond to its surrounding context and minimise visual impact from any key viewpoints; and
 - ii) should consider opportunities for incorporating 'green roofs'.

1.2.4. Responding to the Site's Topography and Landform

- a) Applicants must demonstrate how the development responds to the natural topography and landform of the site based on analysis drawings.

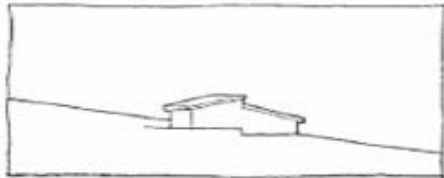
- b) Any built form should be located, oriented and designed to minimise excavation, cut and fill in accordance with the requirements of the Land Management Section of this Plan.
- c) The built form should respond to the natural topography by:
 - i) Avoiding steep slopes for buildings;
 - ii) Aligning the built form with the contours; and
 - iii) Utilising split level design on gentler slopes.
- d) Where relevant, buildings should be placed so there is a backdrop of a hill, slope or rise behind the building. In this way, the ridgeline of any building is lower than the highest level of any hill, slope or rise on which the building is placed to avoid being visible above that hill, slope or rise.

The following diagrams illustrate how building design can best respond to a site's natural topography, minimising excavation and potential visual impacts, and in turn, reducing construction costs.

Figures C1.3: Buildings on Sloping Land

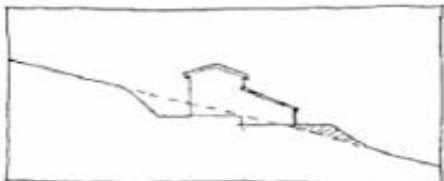


Flat land provides a great range of opportunities for variations in siting and the design of buildings. On flat land interesting development can be created through good building design and landscaping.



Gentle slopes require split level designs. The costs associated with building and access are higher.

Sloping sites can provide interesting building design and landscape opportunities.

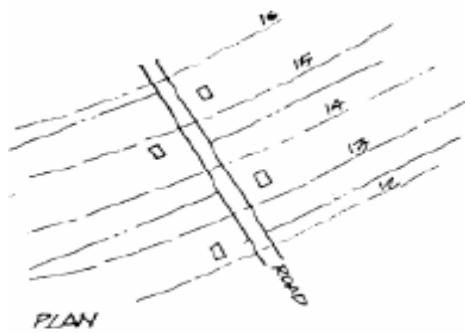


Steep slopes can become very difficult and expensive to build on. Access can also be difficult.

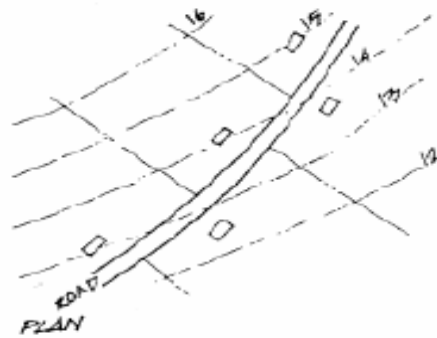
Choosing the best site requires considerable thought. Advice from council will be of value.



On very steep slopes you have very limited building opportunities. Specialized building engineering and drainage advice will be required. The cost of building will be much higher.



Roads that run with the contours of the land can be significantly easier and cheaper to design and construct. Maintenance should be much reduced also. There will be less need for cut and fill and more building opportunities.



ROOFLINES

The design of your house and other buildings will have an impact on the rural landscape.

These types of rooflines assist in allowing your house to blend into the rural setting.

Landscaping around buildings will also assist in creating an interesting development in the rural setting.

1.2.5. Safety and Security (Principles of Crime Prevention through Environmental Design)

A. Background

The design of buildings and public spaces has an impact on perceptions of safety and security, as well as actual opportunities for crime. When development is appropriately designed, it can reduce the likelihood of crimes being committed.

There are four main principles of CPTED– natural surveillance, access control, territorial reinforcement and space management. Incorporating these four principles of CPTED can help to create a safe and secure environment that encourages activity, vitality and viability, enabling a greater level of security. They can also assist in minimising the incidence of crime and contribute to perceptions of increased public safety.

Applicants should use this section as a tool in the design of developments. However, not all measures outlined below will be relevant for all types of development. For dwelling houses and dual occupancy developments, the CPTED principles may be delivered by simple measures such as:

- Installing a peephole in the front door;
- Locating a window of a living area to face the street; and
- Maintaining the property, particularly the landscaping.

B. Referrals and Required Information

Council is committed to ensuring that developments reduce the potential for crime. As such, Council has developed and entered into a protocol with the NSW Police Service which stipulates what type of developments will be referred to the Police and associated timeframes for response. The following developments will generally be referred to the Police:

- Multi dwelling housing and residential flat buildings, where there are more than 15 dwellings.
- Mixed use developments that include 15 or more dwellings.
- Major new or upgrading of commercial premises (business, office or retail premises).
- New industrial complexes with or without multiple industrial units comprising 1,000m² or more in floor space.
- New educational establishments or significant upgrading of existing educational establishments.
- New railway stations or significant upgrading of existing railway stations.
- Large recreational facilities and community facilities such as community centres.
- Large child care centres.
- New registered clubs or pubs including applications for extended hours of operation, gaming rooms and nightclubs.
- Highway service centres, service stations and some food and drink premises including drive through restaurants.
- New health services facilities and residential care facilities, including hospitals, nursing homes and medical centres and larger upgrades to these facilities.
- Unusual developments such as brothels and amusement centres.

- New public housing estates or significant upgrades to existing estates.
- Automatic Teller Machines which are located on the street and or near openings of buildings.

Generally all of the information listed below will be required to be submitted with your development application if you are lodging one of the above types of development:

- Measures that have been taken to ensure compliance with this section of the DCP.
- Results of any community safety assessments/audits, crime risk assessments or consultation that has been undertaken prior to the lodgement of the application.
- Community Safety Management plans for commercial premises such as hotels, clubs, sex industry premises and any other development that has the potential to attract members of the public either as paying or non-paying customer/visitor.
- Information from the NSW Police that may be requested as part of the approvals process and/or undertaken by way of Council/Police protocol.

In some cases, Council may request this information with other types of development application if it is considered warranted.

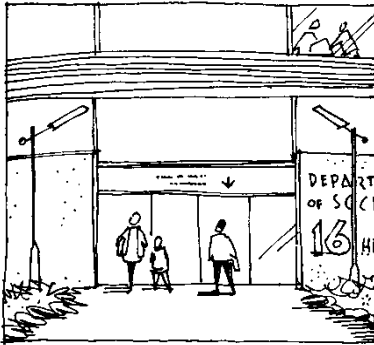
C. Principles

Principle 1: Natural Surveillance

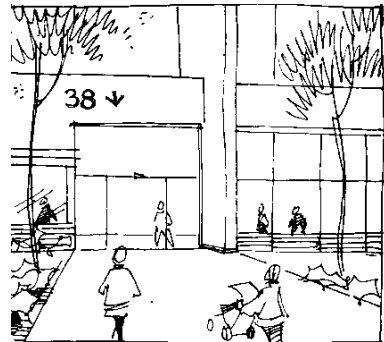
Providing opportunities for effective surveillance, both natural and technical, can reduce the attractiveness of crime targets. Good surveillance means that people can see what others are doing thereby deterring 'would-be offenders' from committing crime in areas with high levels of surveillance. From a design perspective, 'deterrence' can be achieved by:

- Locating public services in areas of high activity;
- Providing clear sightlines between public and private places;
- Avoiding blind corners in pathways, stairwells, hallways and car parks;
- Ensuring that the range of land uses within a building increases opportunities for natural surveillance;
- Providing natural surveillance into communal and public areas;
- Locating entries that are clearly visible from the street;
- Designing fences that maximise natural surveillance from the street to the building and from the building to the street, and minimise opportunities for intruders to hide;
- Installing security grilles, shutters and doors that allows natural observation of the street;
- Installing effective lighting in public places that does not produce glare or dark shadows; and
- Ensuring that landscaping does not obstruct natural surveillance or provides a place to hide or entrap victims

Clear sight lines to encourage natural surveillance



Clear building entrance not obscured by vegetation



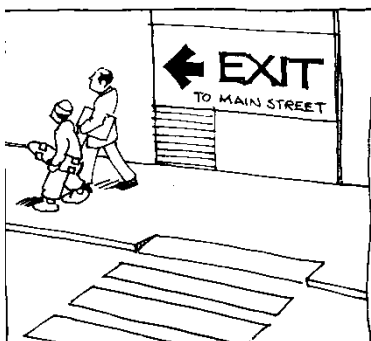
Principle 2: Access Control

Physical and symbolic barriers can be used to attract, channel or restrict the movement of people, and in turn, minimise opportunities for crime.

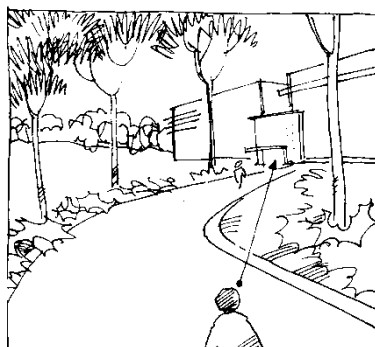
Effective access control can be achieved by:

- Ensuring buildings are clearly identified by street number;
- Providing clear entry points;
- Creating landscapes and physical locations that channel and group pedestrians into target areas;
- Using vegetation as barriers to deter unauthorised access;
- Using building materials/security that reduces the opportunity for intruder access;
- Designing public spaces that attract rather than discourage people from gathering;
- Restricting access to internal areas or high-risk areas such as loading or service areas;
- Ensuring there are appropriate security measures in place commensurate for the range of land uses within a building/development; and
- Ensuring that parking areas are clearly identified by signage to prevent unintended access and to assist persons trying to find their car.

Controlled access



Clear sight lines



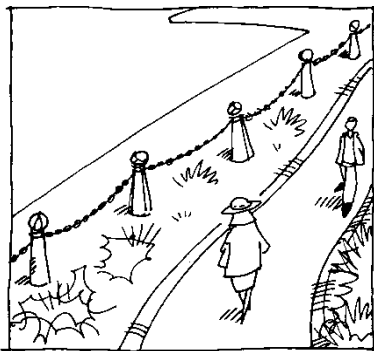
Principle 3: Territorial Reinforcement

This principle relies on the users of spaces or areas feeling that they have some ownership of public space and therefore are more likely to gather and enjoy that space. The ownership of space increases the likelihood that people who witness crime in or adjacent to that space will respond by quickly reporting it or by attempting to prevent it.

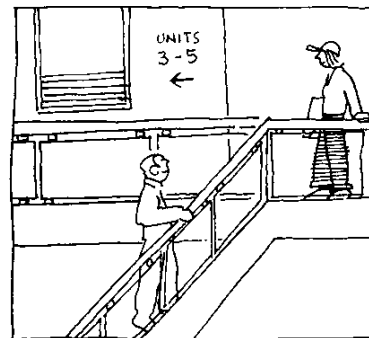
Territorial reinforcement can be achieved in the design of the development by:

- Having distinct transitions/boundaries between the public and private areas; and
- Clearly defining spaces to express a sense of ownership and reduce illegitimate use/entry.

Permeable barrier



Clear Identification of units



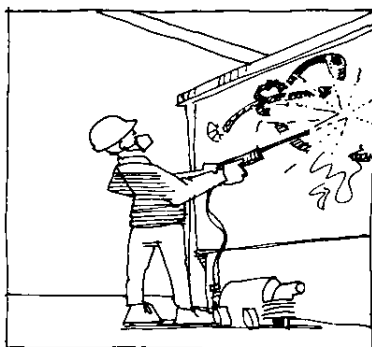
Principle 4: Space Management

Public space that is attractive and well maintained is inviting to users and becomes a well used space. Linked to the principle of territorial reinforcement, space management ensures that the space is appropriately utilised and well cared for.

Space management includes:

- Creating a 'cared for' image through proper maintenance regimes;
- Rapid repair of vandalism and graffiti, the replacement of burned out pedestrian and car park lighting and the removal or refurbishment of decayed physical elements;
- Using materials that reduce the opportunity for vandalism; and
- Encouraging design that promotes pride and a sense of place for the community.

Removal of graffiti



Encouraging a 'cared for' space



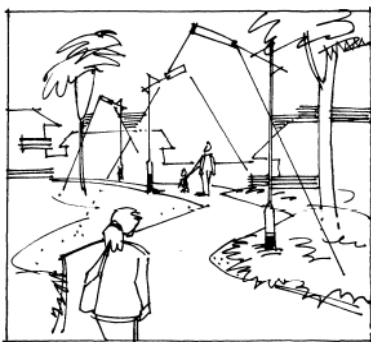
D. Controls

1) Lighting: Lighting plays a vital role in crime prevention and personal safety as you can see and respond to what is around you and ahead of you. Others can also see you, which further reduces the likelihood of a crime being committed.

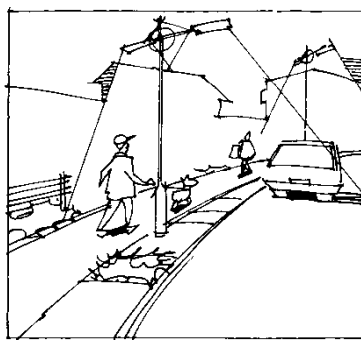
- a) All areas intended to be used at night should allow appropriate levels of visibility.
- b) Pedestrian pathways, lane ways and access routes in outdoor public spaces should be lit to the minimum Australian Standard of AS1158. Lighting should be consistent in order to reduce the contrast between shadows and illuminated areas. Lighting should be designed in accordance with AS4282 – Control of the obtrusive effects of outdoor lighting.
- c) Lighting should have a wide beam of illumination, which reaches to the beam of the next light, or the perimeter of the site or area being traversed. Lighting should clearly illuminate the faces of users of pathways.
- d) Streetlights should shine on pedestrian pathways and possible entrapment spaces as well as on the road.
- e) Lights should be directed towards access/egress routes to illuminate potential offenders, rather than towards buildings or resident observation points.
- f) Lighting should take into account all vegetation and landscaping that may act as an entrapment spot.
- g) Lighting should be designed so that it is “vandal tough” or difficult for vandals to break.
- h) Where appropriate, use movement sensitive and diffused lights.
- i) Avoid lighting spillage onto neighbouring properties as this can cause nuisance and reduce opportunities for natural surveillance.
- j) Illuminate possible places for intruders to hide.
- k) As a guide, areas should be lit to enable users to identify a face 15m away.
- l) All lighting should be maintained and kept in a clean condition with all broken or burnt out globes replaced quickly.
- m) Use energy efficient lamps/fittings/switches to save energy.

Note: Please refer to the Public Domain Section for further controls on lighting which may need to be incorporated into the development application.

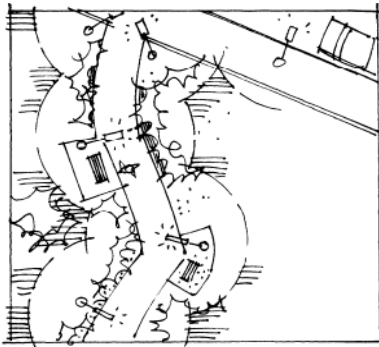
Well lit pedestrian pathways



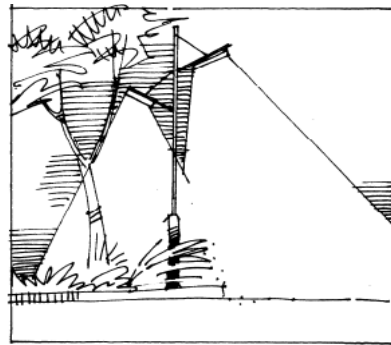
Appropriate lighting of a footpath and street



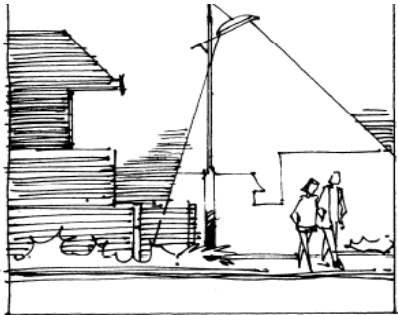
Wide circle of illumination that meets the next



Lighting that considers the vegetation to ensure that the area of illumination is maximised



Lighting that respects the neighbouring property owners by not causing a lighting nuisance

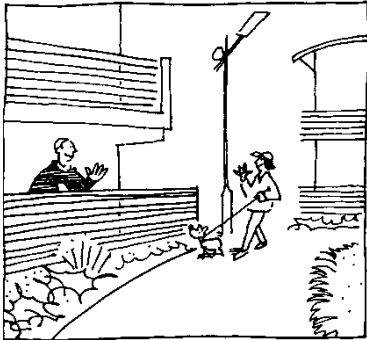


2) Fencing: If fencing is too high or made of inappropriate materials it reduces the opportunity for casual surveillance of the street and for users of the public domain to see what activities are taking place on your site. This then further increases the likelihood of a crime being committed.

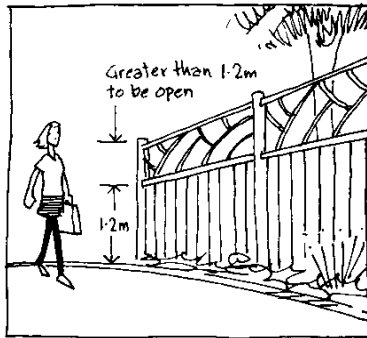
- a) Fence design should maximise natural surveillance from the street to the building and from the building to the street, and minimise the opportunities for intruders to hide.
- b) Front fences should preferably be no higher than 1.2m. Where a higher fence is proposed, it will only be considered if it is constructed of open materials e.g. spaced pickets, wrought iron etc. Fences greater than 1.2m will require the consent of Council.
- c) If noise insulation is required, install double-glazing at the front of the building rather than a high solid fence (greater than 1m).

Note: Please be aware that Council has several other sections within this Plan which relate to fencing which you may also need to refer to.

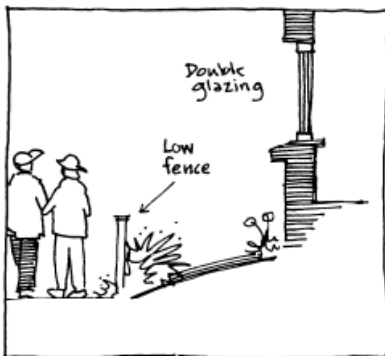
Fencing design that promotes natural surveillance



Greater than 1.2m in height is open.



Double-glazing at the front of the property to allow surveillance



3) Car Parking: Poorly designed car parks whether underground or not can be a dangerous environment for their users. Through the provision of some basic design elements, such as lighting and signage these spaces can be made safer.

a) Car parks, aisles and manoeuvring areas shall be:

- i) designed with safety and function in mind, and
- ii) have dimensions in conformity with Australian Standards 2890 - Parking Facilities. Relevant parts of this standard are:
 - AS2890. 1 - Off-street parking.
 - AS2890.2 - Commercial vehicle facilities.
 - AS2890.3 - Bicycle parking facilities.

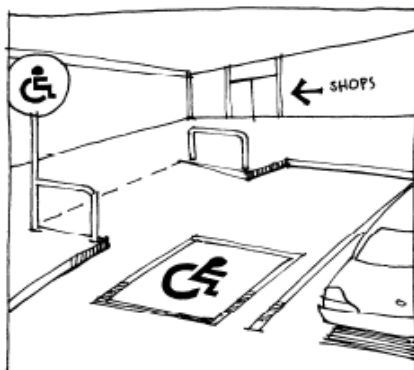
b) Where parking spaces are to be provided for people with disabilities, these spaces are to:

- i) be suitably located near entrances to the building and lifts/ access ramps, if required;
- ii) be provided in accordance with Australian Standards 1428.1 - Design for access and mobility; and
- iii) have appropriate signage and tactile pavement treatments, where required.

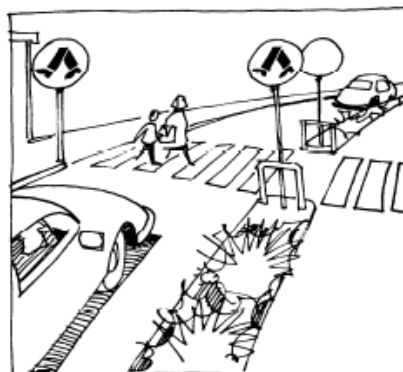
- c) The design of car parking areas should incorporate the following elements:
 - i) provision of a safe and convenient vehicle entry and exit that avoids traffic/pedestrian conflict and impacts on the surrounding road; and
 - ii) the internal (vehicular) circulation network is free of disruption to circulating traffic and ensures pedestrian safety.
- d) The movement of pedestrians throughout the car park should be clearly delineated by all users of the car park and minimises conflict with vehicles.
- e) The design of the car park should ensure that passive surveillance is possible and where appropriate, incorporate active measures such as cameras and security patrols. Car parks should be designed to minimise dark areas through the provision of appropriate lighting.
- f) Large car parks should incorporate communication devices such as:
 - i) Intercoms
 - ii) Public address systems
 - iii) Telephones
 - iv) Emergency alarms.
- g) To ensure users of large car parks are easily able to determine their location, exit and access points, security intercoms and the like, appropriate signage is to be included.
- h) All surfaces in the car park should be painted in light coloured paint or finished in light grey concrete to reflect as much light as possible.
- i) All potential entrapment points should be avoided, e.g. under stairs, blind corners and wide columns. Adequate lighting and mirrors should be used when certain design features are unavoidable.

Note: Please be aware that Council has several other sections in this Plan relating to car parking which you may also need to refer to. :

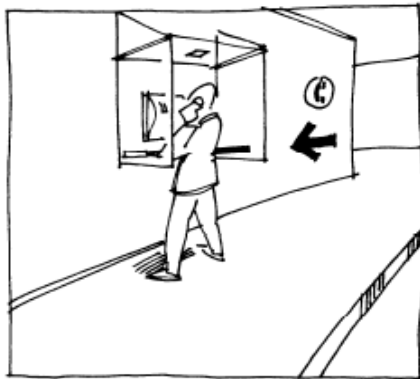
Disabled car space provided



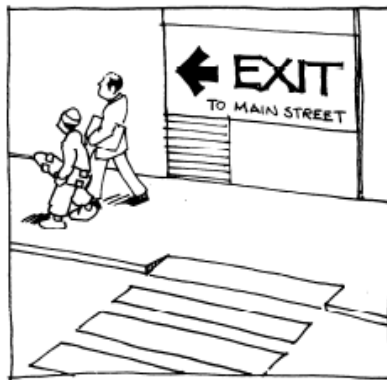
Safe movement of pedestrians promoted



Phone within car park



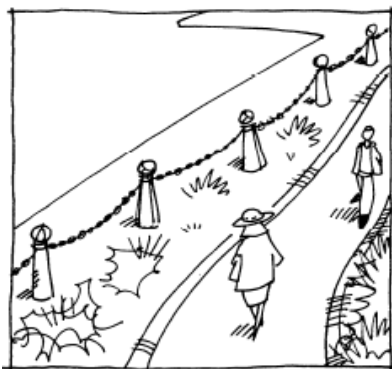
Clearly labelled exit within car park



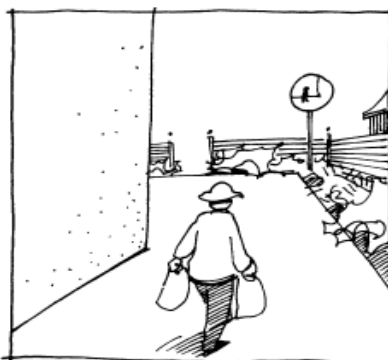
4) Entrapment spots and blind corners: Entrapment spots and blind corners provide opportunities for perpetrators of crime to hide and or commit crime.

- a) Pathways should be direct. All barriers along pathways should be permeable including landscaping, fencing etc.
- b) Consider the installation of mirrors to allow users to see ahead and around corners. The installation of glass or stainless steel panels in stairwells can also assist in this regard.
- c) Entrapment spots adjacent to main pedestrian routes such as a storage area or small alley should be eliminated from all designs.
- d) If entrapment spots are unavoidable they should be well lit with aids to visibility such as convex mirrors and locked after hours.
- e) To eliminate excuse making for individuals to loiter, avoid placement of seating near or adjacent to ATM's, public phone boxes, toilets, corridors and isolated locations.

Permeable barrier



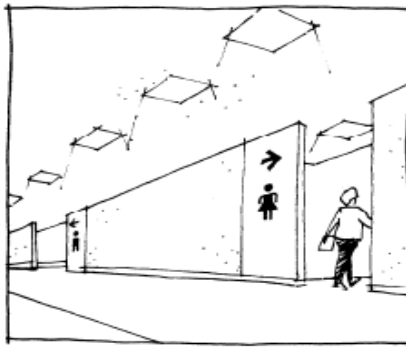
Mirrors that allow viewing around the corner



Glass panels used in stairwells to promote visibility



No seats outside toilets to minimise opportunity for loitering

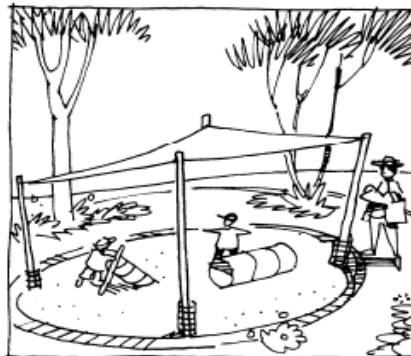
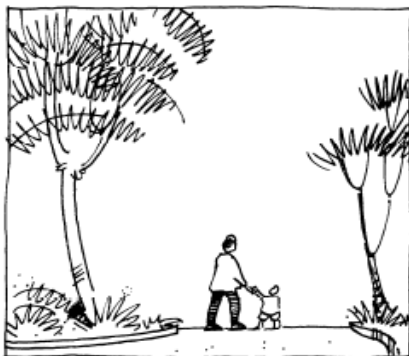


5) Landscaping: Trees and shrubs that are inappropriately located can easily reduce surveillance opportunities and provide entrapment spots and blind corners.

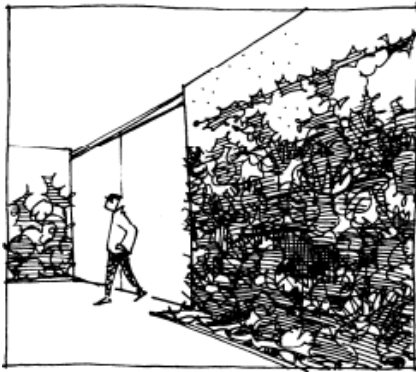
- a) Avoid medium height vegetation with concentrated top to bottom foliage. Plants such as low hedges and shrubs, creepers, ground covers and high-canopied vegetation are good for natural surveillance.
- b) Trees with dense low growth foliage should be spaced or crown raised to avoid a continuous barrier.
- c) Use low ground cover or high-canopied trees with clean trunks.
- d) Avoid vegetation, which conceals the building entrance from the street.
- e) Avoid vegetation screening of all public use toilets.
- f) Avoid vegetation that impedes the effectiveness of public and private space lighting. Use "green screens" (wall hugging vegetation that cannot be hidden behind) if screening large expanses of fencing to minimise graffiti.

Note: Refer to the Public Domain Section for more information on lighting.

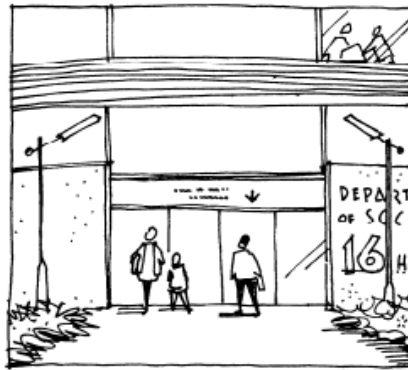
High and low vegetation



Green screen to minimise opportunity for graffiti



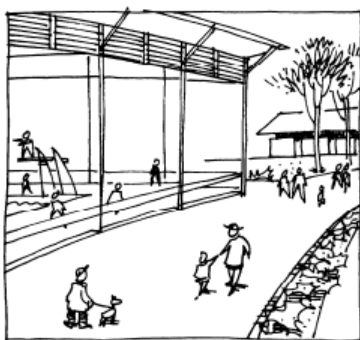
Clear building entrance not obscured by vegetation.



6) Communal/Public Areas: Communal or public open space areas that do not have adequate natural surveillance are a risk to personal safety.

- a) Position active uses or habitable rooms with windows adjacent to main communal/public areas e.g. playgrounds, swimming pools, gardens, car parks etc.
- b) Communal areas and utilities e.g. laundries and garbage bays should be easily seen and well lit.
- c) Where elevators or stairwells are provided, open style or transparent materials are encouraged on doors and/or walls of elevators/stairwells.
- d) Waiting areas and entries to elevators/stairwells should be close to areas of active uses, and should be visible from the building entry.
- e) Seating should be located in areas of active uses.

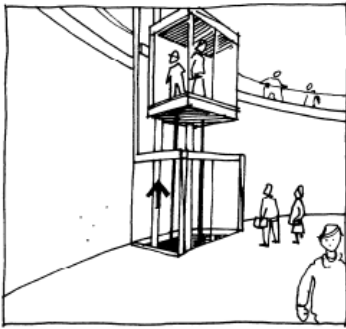
Windows adjacent to public areas



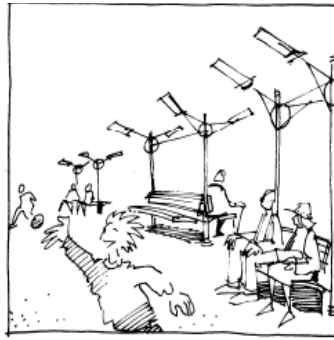
Well lit public areas



Transparent elevators



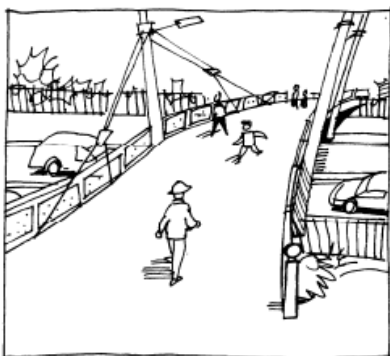
Seating in active areas



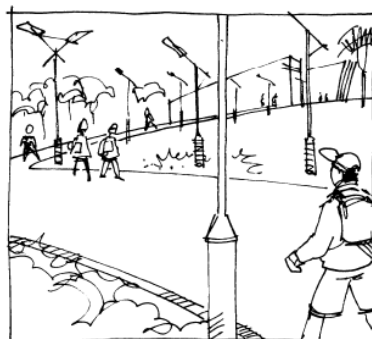
7) Movement predictors: Movement predictors are routes which people move through on a regular and predictable basis such as a pedestrian underpass. Careful design is needed to ensure that they are not included in a development or are appropriately treated where included to reduce the risk. Through site links are another type of movement predictor, however, unlike under passes these can provide a benefit to the community if designed appropriately to ensure safety.

- a) Pedestrian underpasses should not be included in new developments. Where existing developments, which include underpasses, are being redeveloped all efforts should be made to remove them.
- b) Where movement predictors are used the users of it should have clear site lines so they can see what is ahead and behind at all times.
- c) Lighting of movement predictors is essential. Natural lighting should be used where possible with consideration given to wall and ceiling materials to help reflect light.
- d) Emergency intercoms, telephones and security videos should be included in the design of movement predictors. Adequate consideration should be given to who will be monitoring such equipment.
- e) No entrapment spots should be included in any movement predictor.

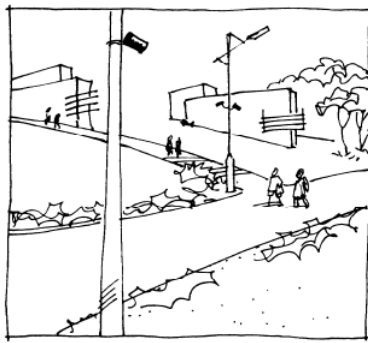
Bridge instead of underpass



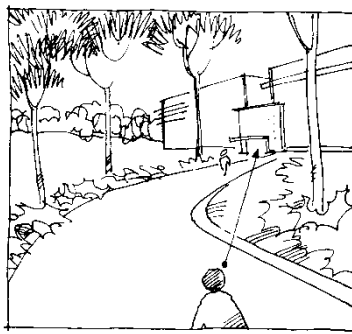
Movement predictor well lit



Security video used



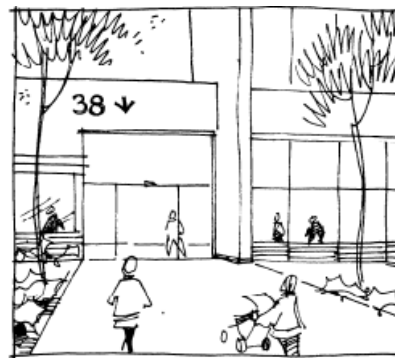
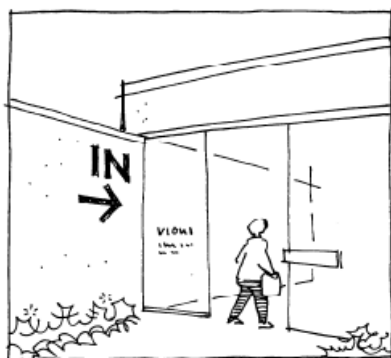
Clear sight lines



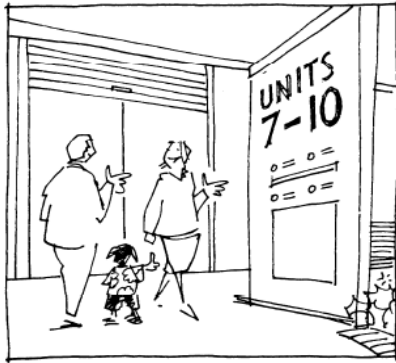
8) Entrances: Entrances to all types of development that are not visible from the public domain provide an opportunity for perpetrators of crime to hide and or commit crime. Entrances to all types of development need to be clearly visible and legible so that the users can obtain entry quickly and expediently.

- a) Entrances should be at prominent positions and clearly visible and legible to the users.
- b) Design entrances to allow users to see into the building before entering.
- c) Entrances should be easily recognisable through design features and directional signage.
- d) Minimise the number of entry points – no more than 10 dwellings should share a common building entry.
- e) If staff entrances must be separated from the main entrance, they should maximise opportunities for natural surveillance from the street.
- f) Avoid blank walls fronting the street.
- g) In industrial developments, administration/offices should be located at the front of the building.

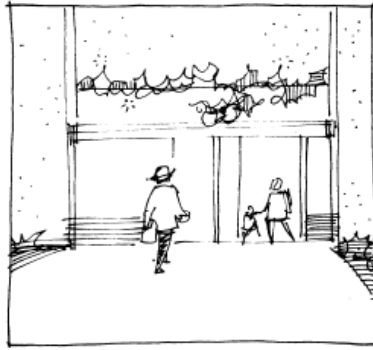
Entrance clear and visible



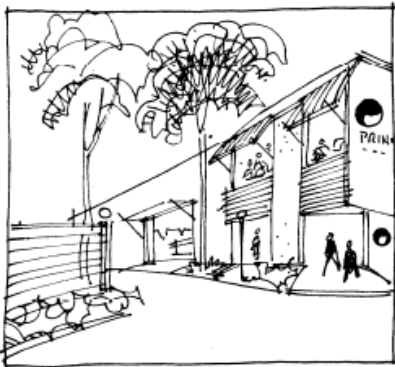
Entry points minimised



Blank walls avoided to minimise opportunity for graffiti



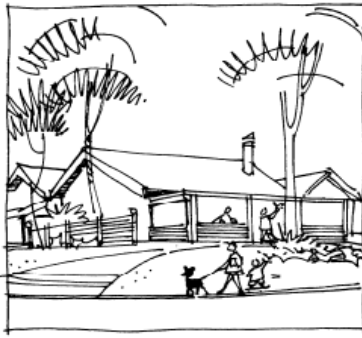
Offices at front of building



9) Site Building and Layout: Buildings should be sited so that they address the street and promote surveillance of the street from the dwelling and of the dwelling.

- a) For single dwellings and dual occupancies, orientate the main entrance towards the street or both streets if located on a corner.
- b) For townhouses/villas/multiple units, ensure that part of the building addresses the street or both streets if located on a corner.
- c) Position habitable rooms with windows at the front of the dwelling.
- d) Garages and carports should not dominate the front façade of the building.
- e) Access to dwellings or other uses above commercial/retail development should not be from rear lanes.
- f) Offset windows, doorways and balconies to allow for natural observation while protecting privacy.

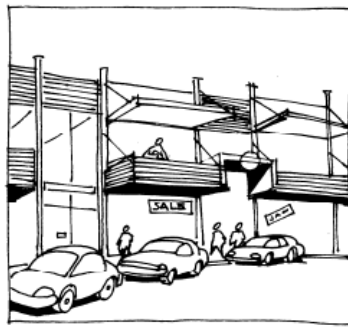
Dwellings addressing the street



Garages at rear



Residential above commercial



10) Building Identification: Adequate building identification is essential to ensure that people can easily find a destination and do not have to walk up and down the street searching for it.

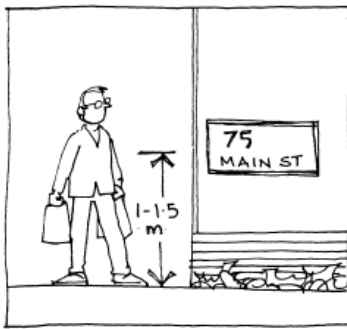
For commercial development:

- a) Street numbers should be at least 7cm high, and positioned between 1m and 1.5m above ground level on the street frontage.
- b) Street numbers should be made of durable materials preferably reflective or luminous, and should be unobstructed (e.g. by foliage).
- c) Location maps and directional signage should be provided for larger developments.

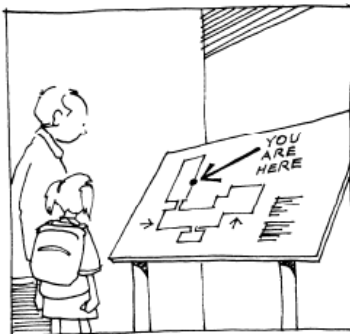
For residential development:

- a) Each individual dwelling should be clearly numbered.
- b) Unit numbers should be clearly provided on each level.
- c) Each building entry should clearly state the unit numbers accessed from that entry.

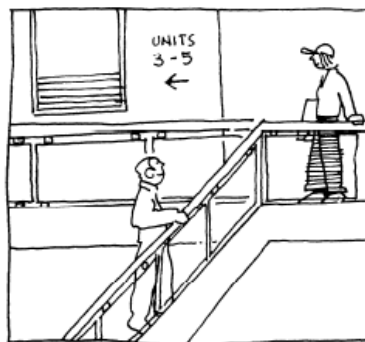
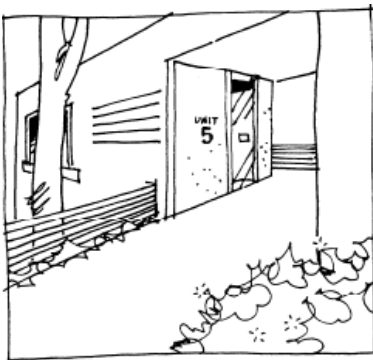
Street number size and positioning



Location board for larger developments



Clear identification of units

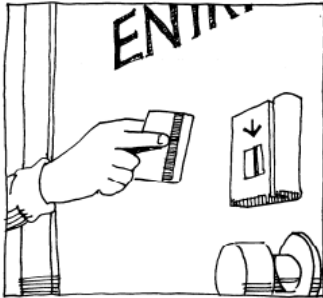


11) Security: A crucial part of a crime prevention strategy is the use of security hardware and/or personnel to reduce opportunities for unauthorised access.

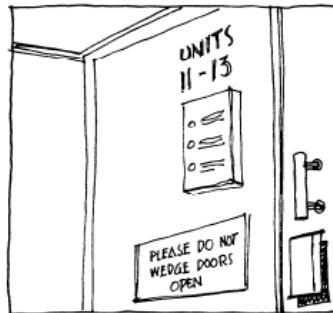
- a) Install intercom, code or card locks or similar for main entries to buildings including car parks.
- b) Main entry doors for apartment buildings should be displayed requesting residents not to leave doors wedged open.
- c) Australian Standard 220 - door and window locks should be installed in all dwellings.
- d) Consider installing user/sensor electronic security gates at car park entrances, garbage areas and laundry areas etc, or provide alternative access controls.
- e) Entry to basement parking should be through security access via the main building.
- f) External storage areas should be well secured and well lit.
- g) Install viewers on entry doors to allow residents to see who is at the door before it is opened.
- h) If security grilles are used on windows they should be operable from inside in case of emergencies.
- i) Ensure skylights and/or roof tiles cannot be readily removed or opened from outside.
- j) Consider monitored alarm systems.
- k) Provide lockable gates on side and rear access.
- l) Consider building supervisors or security guards.

Note: If you are proposing security gates to control access, you will need to liaise with the emergency service providers such as Police, Fire Brigade and Ambulance to ensure that they can gain access.

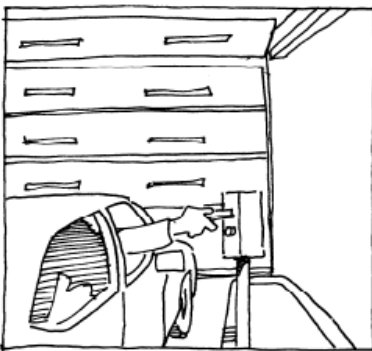
Security cards used where necessary



Doors not to be wedged open



Secure car park



Well – lit storage area



Security camera at entrance to allow viewing of visitors



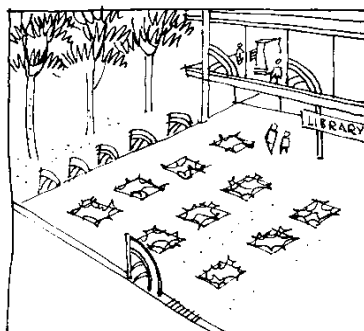
12) Ownership and Space Management: It is important that people have a sense of ownership of a place whether it is residential or commercial as a person who feels attached to a place is more likely to watch out for it and the other users of it.

- a) Ensure that dwellings or groups of dwellings are readily recognizable by the residents through the use of design features such as colouring, roof forms, vegetation, paving, artworks, fencing, furniture etc.
- b) Physical and/or psychological barriers, e.g. fences, gardens, lawn strips, varying textured surfaces can be used to define different spaces.
- c) Ensure the speedy repair or cleaning of damaged or vandalised property.
- d) Provide for the swift removal of graffiti.
- e) Provide information advising where to go for help and how to report maintenance or vandalism problems.
- f) Council, through its Community Safety Partnership Initiatives can provide residents with Community Safety advice on how to enhance property and personal safety and how to promptly report criminal or inappropriate behaviour to relevant authorities.

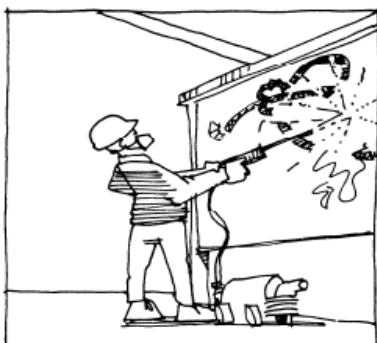
Note: The Penrith Community Safety Partnership oversees the implementation of the Penrith Community Safety Plan. Strategies in the Community Safety Plan include the conducting of Community Safety Audits.

An initiative of the partnership is to provide commercial property owners with some general “good amenity” tips to contribute to overall presentation of specific neighbourhoods. This document will be provided to all commercial properties prior to and/or at the conclusion of community safety audits/assessments surrounding their premises to promote “self rectification” and neighbourhood responsibility.

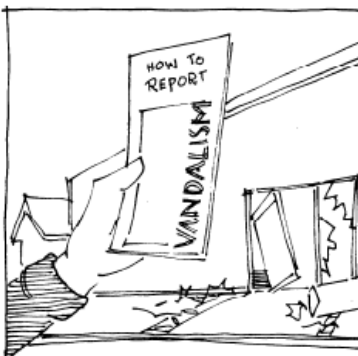
Distinctive entrance and style for different parts of a development



Removal of graffiti



Process to report vandalism

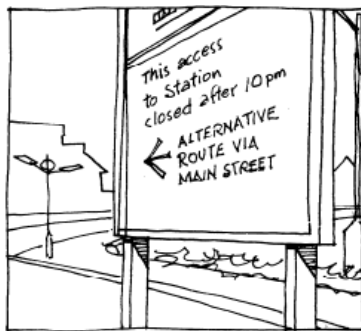
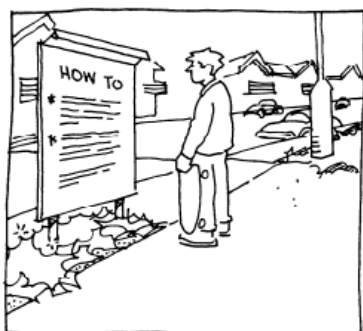
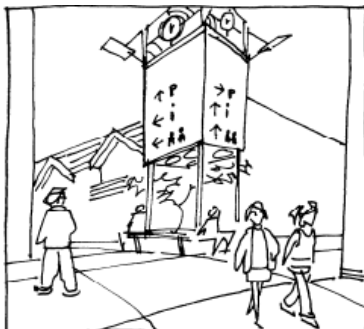
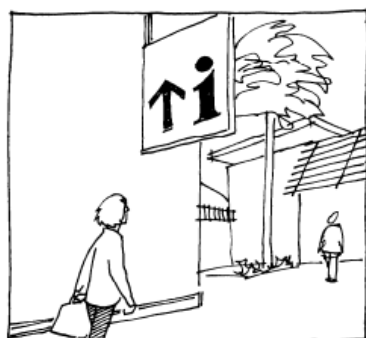


13) Way finding/ finding help: The ability to escape, communicate or find help when in danger can be assisted through improved signage and legible design. Moreover,

knowing where you are in a large open space or shopping centre contributes to a feeling of safety.

- a) Signs should be large and legible, with strong colours, standard symbols (e.g. for washrooms) and simple graphics. They should indicate where to go for help or assistance.
- b) Signs should be strategically located at entrances and near activity nodes such as intersections of corridors or paths.
- c) Signs should indicate how to report maintenance problems in the complex.
- d) The main pedestrian route through a large building, sets of building or areas of open public space should be indicated as such with appropriate signage.
- e) Where exits to pedestrian routes are closed after hours this should be indicated at the entrance to the route and information on alternative routes should clearly advised.
- f) Signs that provide way finding information should not be relied upon solely, the overall legibility of the design needs to be well considered. Users of the space need to be able to intuitively understand where they are within the complex or area and how they can get away.

Clear signage and way finding devices incorporated into the development



1.2.6 Maximising Access and Adaptability

A. Background

New developments and the spaces around them should be accessible and useable to all people. Developments should be designed and constructed beyond their initial or first use to

ensure that buildings are durable and capable of adaptability in the future. The 'whole of building approach' should consider how the building design, finishes and materials used in the construction phase affect the amenity and safety of future occupants of the building. This approach maximises the liveability and longevity of the buildings by ensuring that adaptability and accessibility is integral to the design and construction of the development. For example, houses could be designed with reinforced shower walls will allow for future installation of grab rails. Wider doorways can facilitate easier movement of less able occupants. Lever taps and door handles are designed for easier use by both young children and older people. Similar principles can apply to commercial and industrial developments. Designing flexibility into a building will increase the lifespan and marketability of the development.

B. Principles

There are a number of principles of universal design which, when considered in the planning and design stage, add very little to the cost of the development but make a great deal of difference to the overall useability of the development. These principles can be applicable to both external and internal areas. (The principles go beyond the requirements of the Australian Standard for Adaptable Housing (AS 4299-1995)).

- a) **Principle 1 – Equitable use:** The design is useful and marketable to people with diverse abilities.
- b) **Principle 2 – Flexibility in use:** The design accommodates a wide range of individual preferences and abilities.
- c) **Principle 3 – Simple and intuitive use:** Use of the design is easy to understand regardless of the individual's experience, knowledge, language skills or current concentration levels.
- d) **Principle 4 – Perceptible information:** The design communicates useable information effectively to the user regardless of ambient conditions or the user's sensory abilities.
- e) **Principle 5 – Tolerance for error:** The design minimises hazards and the adverse consequences of accidental or unintended actions.
- f) **Principle 6 – Low physical effort:** The design can be used effectively and comfortably with a minimum of fatigue.
- g) **Principle 7 – Size and space for approach and use:** Appropriate size is provided for approach, manipulation and use regardless of users body size, posture or mobility.

C. Controls

Dwellings

The Australian Network for Universal Design (ANUHD) recommends the following minimum criteria for inclusion in a universally designed home:

- 1) **Easy access:** People of all ages and abilities are able to gain easy access to the dwelling from the front boundary or car park to the entrance of the dwelling.
- 2) **At least one level entrance:** The dwelling includes at least one level entrance to enable all home occupants to enter and exit the dwelling with ease.
- 3) **Bathroom, living space and bedroom on the entrance level:** The level entry to the dwelling provides a living space, bathroom and toilet, and a bedroom space or space capable of accommodating a bedroom space.

- 4) **Bathrooms designed for easy adaption:** The bathroom provides a hobless shower and accommodates more generous internal circulation spaces to enable future adaptation.
- 5) **Reinforcement of bathroom walls:** Walls in the bathroom and shower are reinforced to enable future installation of grab rails, if required by home occupants.
- 6) **Kitchen access:** The kitchen design enables all home occupants to easily manoeuvre within the kitchen area and between fixed kitchen benches.
- 7) **Easy access to doors and corridors:** The internal passages and doorways within the dwelling facilitate ease of movement between rooms and accommodate the circulation needs of all home occupants.
- 8) **Consistent installation of switches, power outlets and window controls:** Light switches, power outlets and other operational devices are installed at a consistent height to ensure ease of access for all home occupants.
- 9) **Easy operable door, tap and window controls:** Door and window operating hardware is easy to manipulate and can be operated by the home occupants regardless of age or ability.
- 10) **Slip resistance of floor surfaces:** Kitchens, bathrooms and laundries feature flooring which provides slip resistance in both wet and dry conditions.

Development involving frequent public use

It is more important that development which involves frequent public use conforms to the principles of Universal Design, wherever practical, as it is this form of development where equity of access is most critical. This type of development includes (but is not limited to):

- Public halls;
- Entertainment facilities;
- Function centres, restaurants, registered clubs and the like;
- Large retail centres (including bulky goods development); and
- Large office buildings.

Development applications for any of the above uses should address the principles of Universal Design in the Statement of Environmental Effects.

D. Lifting the Bar

The following represent some ways in which applicants can demonstrate additional commitment to the principles expressed in this Section. Demonstration of this commitment may lead to Council considering variation of development controls.

- a) Adopt high quality building design that is visually attractive, innovative and improves sustainability outcomes through its design, including the management of vegetation and landscape, water, land and waste in accordance with this Plan;
- b) Address impacts on sensitive adjacent land uses through careful site planning, building design and landscape treatment; and
- c) Reduce the use of timber from old growth forests, rainforests and forests/plantations which do not have certified environmentally responsible forest management practices. Applicants need to demonstrate that a significant percentage of the timber and composite timber products used in the building and construction works has Forest Stewardship Council Certification (see www.fsc.org), utilises reused or recycled timber or is specified using the Friends of the Earth 'Good Wood Guide' 9th Edition.

1.2.7 Adult Change Facilities

A. Objectives

Objectives for including accessible change facilities in development involving frequent public use are:

- a) To provide adult change facilities in buildings that receive a high volume of public use to acknowledge the growing need of change facilities for people with a significant disability.
- b) Demonstrate that large scale public buildings have been planned and designed to meet the needs of people with a complex or profound disability.

B. Controls

- a) Accessible Adult Change Facilities, designed in accordance with Section F 2.9 of the National Construction Code (NCC) or similar, must be provided in the following new or redeveloped development types:
 - i) Shopping Centres with a design capacity of greater than 3,000 people.
 - ii) Multi-tenanted specialised retail premises (bulky goods developments) that are of a scale that they are considered a retail destination.
 - iii) Major Recreation Facilities (i.e. sports stadiums, theme parks).
 - iv) Large Entertainment facilities with an internal floor area of no less than 5,000m², except where a lower design capacity is set by the NCC.
 - v) Large Clubs and Pubs with an internal floor area of no less than 5,000m², including any alfresco areas, terraces, play areas and other associated facilities attached to the club or pub.
- b) Designs for adult change facilities must include a ceiling-mounted hoist and an adult sized change table.
- c) Adult change facilities must be provided separately and not replace a standard accessible toilet.
- d) Consideration may be given where an adult change facility is currently servicing a precinct and is suitably accessible to any new or redeveloped developments.

Table of Contents

C2 VEGETATION MANAGEMENT	2
2.1 PRESERVATION OF TREES AND VEGETATION	2
2.2. BIODIVERSITY CORRIDORS AND AREAS OF REMNANT NATIVE VEGETATION IN NON-URBAN AREAS	11
2.3. BUSHFIRE MANAGEMENT	16

C2 Vegetation Management

2.1 Preservation of Trees and Vegetation

A. Introduction

It is important to protect and where possible enhance the trees and other vegetation in our City for several reasons including biodiversity conservation, habitat protection, preserving amenity, cleaning our air, cooling our City and contributing to the positive health and well-being of our community.

This section of the Plan seeks to address the requirements for tree and vegetation management while achieving an appropriate balance between protecting and enhancing trees and other vegetation, minimising risks to people and property, ensuring public safety and facilitating sustainable development.

- If you are proposing to remove trees or other vegetation, you may be required to obtain approval from other government agencies that administer the following Acts. This is in addition to gaining approval from Council. Before commencing any works involving tree or vegetation removal you should check if approval is also required under other legislation including: *Biodiversity Conservation Act 2016*
- *Biosecurity Act 2015*
- *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*
- *Environmental Planning & Assessment Act 1979 (and amendments)*
- *Fisheries Management Act 1994*
- *Heritage Act 1977*
- *Local Land Services Act 2013*
- *National Parks and Wildlife Act 1974*
- *Rural Fires Act 1997*
- *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017*
- *Water Management Act 2000*

State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017

While some areas of Penrith are zoned rural, for the purposes of State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 all land within the City of Penrith is considered as a non-rural area of the State. From this policy instrument Council is provided with the mechanism to require and issue permits for the removal or clearing of vegetation. The following sections of this Plan set out approval and permit requirements and other matters for consideration relating to vegetation management in the City.

B. Objectives

- a) To protect and conserve the biodiversity values of trees and other vegetation in the City, and

- b) To maintain the diversity and quality of ecosystems and enhance their capacity to adapt to change, and
- c) To support conservation and threat abatement action to minimise biodiversity loss and conserve threatened species and ecological communities in nature, and
- d) To protect and enhance biodiversity corridors, landscape character and scenic values of the City; and
- e) Recognise the importance and function of trees and other vegetation for Cooling our City, and
- f) To preserve the amenity of the City through the preservation of trees and other vegetation, and
- g) To preserve existing trees and other vegetation where possible during the planning, design, development and construction process, and
- h) To firstly avoid or minimise impacts of a proposed development and land use change on biodiversity and if impacts are unavoidable provide appropriate offsets, and
- i) To achieve an appropriate balance between the protection of trees and other vegetation and mitigating risks from natural hazards.

C. Other Relevant Sections of this DCP

Other sections of this DCP may have a relationship or influence vegetation management outcomes, so it is important to read all relevant parts of this Plan.

D. Controls

1. Approval Requirements

Vegetation means “*a tree or other vegetation, whether or not it is native vegetation.*” Native Vegetation has the same meaning as defined in Part 5A of the *Local Land Services Act 2013*.

General Approval Requirements

- a) A person must not remove, clear, prune or otherwise cause harm to any tree or other vegetation prescribed by this Plan without an appropriate approval. This includes the following activities in relation to trees and other vegetation which are not permitted without approval:
 - Removal by cutting down, clearing, under scrubbing, thinning or any other method
 - Removal of bark around part of or full circumference of a tree trunk (i.e. ring-barking)
 - Cutting off the top of a tree to reduce its height (i.e. topping)
 - Cutting off branches on one side of a tree (i.e. lopping)
 - Cutting off or pruning branches greater than 50mm diameter
 - Cutting, removal or otherwise damaging the roots or root system

- Poisoning or any other activity which causes harm or injury

Development Consent

- b) A person must not remove, clear, prune or otherwise cause harm to any tree or other vegetation prescribed by this Plan, which is proposed as part of development without Development Consent. These works must be assessed as part of a Development Application.

Advisory Note:

Clearing of trees or other vegetation will only be considered where it is proposed in conjunction with a use permissible on that land.

Native Vegetation Panel Approval

- c) If proposed clearing of native vegetation is not associated with development (i.e. not for a purpose requiring development consent) and the proposed area of clearing exceeds the area clearing threshold (see table C2.1 below), or the vegetation is identified on the Biodiversity Values Map then approval is required from the Native Vegetation Panel (not Council).

The area clearing threshold (see table C2.1 below) varies depending on the minimum lot size (shown in the Lot Size Maps made under the relevant Local Environmental Plan), or actual lot size (where there is no minimum lot size provided for the relevant land under the Local Environmental Plan).

If the land on which the proposed development is located has different minimum lot sizes the smaller or smallest of those minimum lot sizes is used to determine the area clearing threshold.

Table C2.1 – Area Clearing Thresholds

Minimum lot size associated with the property	Threshold for clearing , above which the BAM* and Biodiversity Offsets Scheme apply (requires Native Vegetation Panel approval)
Less than 1 ha	0.25 ha or more
1 ha to less than 40 ha	0.5 ha or more
40 ha to less than 1000 ha	1 ha or more
1000 ha or more	2 ha or more

* BAM means Biodiversity Assessment Method

Vegetation Permits

- d) Where the area clearing threshold is not exceeded (see table C2.1 above) and development consent is not required, a person must not remove, clear, prune or

otherwise cause harm to any tree or other vegetation prescribed by this Plan without a Vegetation Permit.

There are two types of Vegetation Permit Application:

- i) Application to Remove or Prune Trees, or
- ii) Application to Clear Native Vegetation

A Vegetation Permit is not required if works are carried out in accordance with an exemption as detailed in Section 3 – Vegetation Permit Exemptions.

Advisory Note:

A Vegetation Permit will generally not be issued to facilitate Complying Development. A Development Application will be required if a complying development proposal does not meet the complying development controls in relation to trees and other vegetation.

2. Prescribed Vegetation

- a) Prescribed trees or other vegetation covered by this section of the Plan includes:
 - i) Any native tree (both living and dead) or other vegetation that is on land zoned E2 Environmental Conservation in the Penrith LEP 2010 Land Zoning Map, or on natural resources sensitive land identified in the Penrith LEP 2010 Natural Resources Sensitivity Land Map.
 - ii) In all areas, any native vegetation community including remnant native vegetation.
 - iii) In all areas, any tree or other vegetation whether native or introduced having a height of 3.0 metres or more or a trunk diameter exceeding 100mm at 1400mm above ground level.
 - iv) Any tree or other vegetation that is, or forms part of, a heritage item or is within a heritage conservation area.
 - v) Any tree or other vegetation that is culturally, socially or biologically significant or a unique specimen and has been formally recognised by an appropriate government authority (e.g. a significant tree or vegetation register).

3. Vegetation Permit Exemptions

- a) A Vegetation Permit is not required for pruning or removal of:
 - i) a tree that is dead and is not habitat for native fauna;
 - ii) a tree that is an imminent risk or threat to human life or property;
 - iii) deadwood that is not habitat for native fauna;
 - iv) a tree located within 3.0 metres of an external enclosing wall of a dwelling, as measured from the centre of the trunk at 1400mm above ground level;
 - v) an exempt tree species published by Council (refer to website);
 - vi) a tree or other vegetation that produce an edible fruit, excluding Australian natives and ornamental fruit trees;
 - vii) a tree or other vegetation removed in accordance with the NSW Rural Fire Service 10/50 Vegetation Clearing Code of Practice;

- viii) a tree or other vegetation within bushfire asset protection zones maintained in accordance with an approved Bushfire Risk Management Plan. The term 'asset protection zone' is defined in the *NSW Rural Fire Service Planning for Bushfire Protection 2018 guidelines*;
 - ix) a tree or other vegetation subject to written approval or direction from the NSW Rural Fire Service for the purpose of property protection and bushfire hazard reduction;
 - x) a tree that will cause imminent damage to the structural integrity or function of an existing perimeter boundary fence on rural land;
 - xi) a tree or other vegetation growing within an approved constructed dam or dam wall where maintenance is required to prevent impacts on structural integrity or function;
 - xii) a tree or other vegetation where works are carried out in accordance with a Development Consent, or approval issued by the Native Vegetation Panel;
 - xiii) trees or other vegetation that grow within a timber plantation;
 - xiv) a tree or other vegetation that are on Council owned or managed land provided the work is undertaken by persons authorised by Council, and is in accordance with Council approved works, a Council policy or a Plan of Management, AS 4373 - 2007, *Pruning of Amenity Trees* and statutory approvals;
 - xv) a tree or other vegetation where action is required or authorised to be done by or under the *Electricity Supply Act 1995*, the *Roads Act 1993* or the *Surveying and Spatial Information Act 2002*;
 - xvi) a tree or other vegetation declared as weeds and covered by a Biosecurity Priority Weeds Plan prepared under the *Biosecurity Act 2015* and *Biosecurity Regulation 2017* (see the Department of Primary Industries and Hawkesbury River County Council websites);
 - xvii) a tree or other vegetation to control pests in accordance with a pest management plan prepared under the *Biosecurity Act 2015* and *Biosecurity Regulation 2017* (see the Department of Primary Industries website).
- b) A Vegetation Permit is not required to prune a tree in accordance with AS 4373 - 2007, *Pruning of Amenity Trees* providing:
- i) the branches to be pruned are no greater than 50mm diameter and the shape and structure of the tree will not be significantly modified; and
 - ii) the branches to be pruned are within 3.0 metres a dwelling roof, and the final cut is only back to the nearest branch junction or collar and the largest cut is no greater than 150mm in diameter;
 - iii) the branches to be pruned are located within 2.0 metres of ground level and the tree is greater than 6.0 metres in height, where the final cut is only back to the nearest branch junction or collar and the largest cut is no greater than 150mm in diameter.

Exemption Advisory Notes:

1. Property owner's consent is required before carrying out any exempt works.
2. For the purpose of this section 3 *imminent* means "*likely to happen at any moment*".
3. Before carrying out exempt works under section 3 a) i), ii), iii) and x), property owners should first obtain a report from a suitably qualified arborist (or other suitable evidence) clearly identifying a tree as dead, or as an imminent risk or threat to human

life or property, or as an imminent risk of damage to an existing perimeter boundary fence on rural land.

4. All pruning work should be carried out in accordance with AS 4373 - 2007, *Pruning of Amenity Trees*.
5. Property owners must be able demonstrate exempt criteria have been met if requested by Council.

Property owners should contact Council for advice if they uncertain whether an exemption applies.

4. Application Submission Requirements

- a) The level of information required to assess a development or permit application to remove or clear trees or other vegetation will depend on:
 - i) the scale and extent of proposed works;
 - ii) site location and characteristics;
 - iii) whether the site contains any significant trees;
 - iv) whether the site contains any threatened species, threatened ecological communities, or protected plants and animals listed under the *Biodiversity Conservation Act 2016*;
 - v) whether the site is identified on the NSW Office of Environment and Heritage Biodiversity Values Map.
- b) A report prepared by a suitably qualified and experienced arborist may be required with a tree removal application and as a minimum should address the following in relation to trees:
 - i) The location, number and type (species) of trees proposed to be removed;
 - ii) A clear site plan identifying tree(s) proposed for removal and other relevant site features such as a dwelling, fences and driveways;
 - iii) Details of the proposed works and the reasons for the works;
 - iv) The age, health and condition, including structural soundness and the condition of the root zone;
 - v) The aesthetic, scientific, ecological and/or historic importance;
 - vi) The impact of the proposed work on the appearance, health or stability of trees or vegetation and the general amenity of the surrounding area, including any effect on the streetscape;
 - vii) In the case of an application to remove a tree(s) or vegetation, whether pruning would be a more practicable and desirable alternative;
 - viii) Any risk the tree(s) may pose to people, dwellings, structures or services;
 - ix) The extent of other trees and vegetation on the property;
 - x) Whether the tree(s) is likely to be used as habitat, or is a source of food or shelter for native animals;
 - xi) Whether the tree(s) is a threatened species or forms part of a threatened community; and
 - xii) Whether all alternatives to removing or pruning the tree or vegetation have been considered.
- c) A Flora and Fauna Assessment Report including a Test of Significance under Part 7, Division 1, Section 7.3 of the *Biodiversity Conservation Act 2016* may be required with an application to remove or clear native trees or other native vegetation. The report must be prepared by a suitably qualified and experienced ecological consultant.
- d) A Biodiversity Development Assessment Report (BDAR) will be required for an application to remove or clear native trees or other native vegetation on land identified by

the Biodiversity Values Map, or where clearing exceeds the Biodiversity Offset Scheme area clearing thresholds, or after applying the Test of Significance the impacts are likely be significant. A BDAR must be prepared by an accreditor assessor under the *Biodiversity Conservation Act 2016*.

Applicants should seek advice from Council if assistance is needed in relation to submission requirements.

5. Trees Causing Property Damage

- a) In relation to trees causing property damage, it must be demonstrated (e.g. by a report from a practising qualified structural engineer) that the tree, its trunk, or its root system is causing damage to a structure and the damage cannot be controlled by measures such as the installation of a root barricade.

6. Trees and New Development - Site Planning and Design

The following controls apply where the removal of trees and other vegetation is proposed as part of a development application for a proposed use permissible under the relevant zone of Penrith LEP 2010:

- a) Australian Standard AS 4970-2009 Protection of Trees on Development Sites should be considered, and
- b) The siting and layout of a development should consider, at the initial concept stage, the location of trees and other vegetation (including on adjoining land) and favour their retention.
- c) Buildings, Asset Protection Zones and Effluent Management Areas are to be sited on existing cleared land, where possible.
- d) Where a stand of trees is to be retained, any associated native understorey should also be retained.
- e) Trees and vegetation should be retained on steeply sloping sites (slopes greater than 20%) or where there is unstable soil to minimise erosion or geo-technical instability. (See also the controls in the Land Management section of this Plan relating to Geotechnical Stability).
- f) Trees and vegetation must be retained along watercourses (See also the controls in the Water Management section of this Plan, relating to Riparian Corridors).
- g) An application is required to address the effect of the proposed development on existing vegetation, the landscape character and the scenic quality of the locality.
- h) Trees and vegetation must be retained where they shield existing or proposed buildings from views from public areas.
- i) Trees and vegetation must be retained where they form part of the landscape character of an area, including on or near ridgelines.
- j) Any proposed building or structure are to be located outside the tree protection zone for retained trees. Council may consider a variation based on an appropriate arboricultural assessment.
- k) Hard (or impervious) surfaces are not permitted under the drip line of any tree.
- l) Where possible services (and particularly pipes carrying water/moisture) are to be located outside the tree protection zone of any tree to be retained. Council may consider a variation based on an appropriate arboricultural assessment.

- m) Wherever trees or vegetation are removed (with consent) as a consequence of the development, an equal or greater number of replacement trees that grow to a similar or greater height or canopy should, where practical, be incorporated into the landscaping design of the new development.
- n) The siting and layout of a development should also consider, at the initial concept stage, bushfire risk. (See the Bushfire Management section of the Plan).

7. Protection of Trees During Construction

- a) Tree protection must be in accordance with an approved Tree Protection Plan (TPP) prepared with consideration of Australian Standard AS 4970-2009 Protection of Trees on Development Sites.
- b) During construction, an adequate fence or similar structure must be constructed around any trees or other vegetation to be retained in accordance with the approved TPP.
- c) Tree protection zones identified by an approved TPP must not be used by vehicles or machinery, for stockpiling wastes, for storage of any building materials or any other construction activities. This will help protect the tree or vegetation from soil compaction and contamination; root, trunk and limb damage; and changes in surface levels that affect the health of the tree or vegetation.

2.2. Biodiversity Corridors and Areas of Remnant Native Vegetation in Non-Urban Areas

A. Background

The protection and rehabilitation of biodiversity corridors between areas of remnant native vegetation help maintain biodiversity and the integrity of ecosystems. Fragmentation and isolation of habitat reduce the diversity and viability of flora and fauna populations.

This section of the Plan seeks to reinforce and supplement the controls set out in the 'Development on natural resources sensitive land' clause of Penrith LEP 2010. These controls focus on biodiversity corridors and areas of remnant native vegetation in Penrith's non-urban areas, which are identified as natural resources sensitive land on the Penrith LEP 2010 Natural Resources Sensitivity Land Map.

B. Objectives

- a) To promote the establishment and retention of biodiversity corridors and areas of remnant native vegetation that contribute to the long-term survival of native fauna and flora species in the area;
- b) To maintain (and where possible increase) the current area of native bushland and retain the natural species diversity of bushland as far as possible;
- c) To encourage the planting of a diversity of native species to enhance biodiversity values, scenic quality and landscape character; and
- d) To facilitate the implementation of weed control and management measures that act upon the processes causing weed invasion of natural areas.

C. Controls

1. Development Consent

- a) Biodiversity corridors and areas of remnant native vegetation are shown as natural resources sensitive land on the Penrith LEP 2010 Natural Resources Sensitivity Land Map.
- b) In accordance with the 'Development on natural resources sensitive land' clause of Penrith LEP 2010, development consent is required for the following in biodiversity corridors and areas of remnant native vegetation:
 - i) the subdivision of land;
 - ii) earthworks (including removal of rock or other natural material or alteration of a natural waterway or drainage line);
 - iii) the carrying out of a work;
 - iv) development site preparation works clearing vegetation (including slashing or under-scrubbing);
 - v) irrigation with treated effluent.
- c) Clause 1b) iv) above does not include slashing or under-scrubbing undertaken for the purposes of controlling declared pests under the *Biosecurity Act 2015* or to maintain dams, fences or asset protection zones.

2. Matters to be Considered

- d) The 'Development on natural resources sensitive land' clause of Penrith LEP 2010 lists matters that must be considered for any new development or work described in clause 1b) above.

- e) Council must also be satisfied that any development or work is designed, located and managed to avoid or minimise any potential adverse environmental impact.
- f) The matters listed in the 'Development on natural resources sensitive land' clause must be addressed in supporting documentation submitted with the application.

3. Submission Requirements

- a) The level of information required to assess a development or permit application to remove or clear trees or other vegetation will depend on:
 - i) the scale and extent of proposed works;
 - ii) site location and characteristics;
 - iii) whether the site contains any significant trees;
 - iv) whether the site contains any threatened species, threatened ecological communities, or protected plants and animals listed under the *Biodiversity Conservation Act 2016*;
 - v) whether the site is identified on the NSW Office of Environment and Heritage Biodiversity Values Map.
- b) A report prepared by a suitably qualified and experienced arborist may be required with a tree removal application and as a minimum should address the following in relation to trees:
 - i) The location, number and type (species) of trees proposed to be removed;
 - ii) A clear site plan identifying tree(s) proposed for removal and other relevant site features such as a dwelling, fences and driveways;
 - iii) Details of the proposed works and the reasons for the works;
 - iv) The age, health and condition, including structural soundness and the condition of the root zone;
 - v) The aesthetic, scientific, ecological and/or historic importance;
 - vi) The impact of the proposed work on the appearance, health or stability of trees or vegetation and the general amenity of the surrounding area, including any effect on the streetscape;
 - vii) In the case of an application to remove a tree(s) or vegetation, whether pruning would be a more practicable and desirable alternative;
 - viii) Any risk the tree(s) may pose to people, dwellings, structures or services;
 - ix) The extent of other trees and vegetation on the property;
 - x) Whether the tree(s) is likely to be used as habitat, or is a source of food or shelter for native animals;
 - xi) Whether the tree(s) is a threatened species or forms part of a threatened community; and
 - xiii) Whether all alternatives to removing or pruning the tree or vegetation have been considered.
- c) A Flora and Fauna Assessment Report including a Test of Significance under Part 7, Division 1, Section 7.3 of the *Biodiversity Conservation Act 2016* may be required with

an application to remove or clear native trees or other native vegetation. The report must be prepared by a suitably qualified and experienced ecological consultant.

- d) A Biodiversity Development Assessment Report (BDAR) will be required for an application to remove or clear native trees or other native vegetation on land identified by the Biodiversity Values Map, or where clearing exceeds the Biodiversity Offset Scheme area clearing thresholds, or after applying the Test of Significance the impacts are likely be significant. A BDAR must be prepared by an accreditor assessor under the *Biodiversity Conservation Act 2016*.
- e) Where vegetation works are proposed on land that is a heritage item or within a heritage conservation area, a Heritage Impact Statement may be required in accordance with Clause 5.10 Heritage conservation of Penrith LEP 2010. In this regard, applicants should consult with Council's Development Services Department.

Applicants should seek advice from Council if assistance is needed in relation to submission requirements.

4. Protecting and Enhancing Biodiversity Corridors and Areas of Remnant Native Vegetation

- a) As the purpose of biodiversity corridors and areas of remnant native vegetation is to conserve native plants and animals, no clearing of native vegetation should occur within these areas.
- b) As far as possible, biodiversity corridors and areas of remnant native vegetation should be retained with the smallest possible edge-to-area ratio. Measures must be taken to avoid fragmentation of vegetation by roads, tracks, services and the like.
- c) Management of biodiversity corridors and areas of remnant native vegetation must allow natural processes to continue. Measures must be taken to prevent disturbance to existing vegetation, including roots, the hydrological regime and surrounding soil.
- d) Management of biodiversity corridors and areas of remnant native vegetation must have regard to the value of the vegetation as fauna habitat. In particular, old trees (both living and dead), fallen logs, bush rock and a diverse vegetation structure, including understorey species, should be maintained for fauna habitat.
- e) Where land disturbance occurs, natural regeneration is the preferred method of rehabilitation.
- f) Locally native species must be used for revegetation and restoration of biodiversity corridors and areas of remnant native vegetation, if regeneration is unlikely to occur.
- g) Where possible, new native vegetation must be planted in clusters and connected to isolated patches of vegetation to enhance the network of biodiversity corridors.
- h) Non-native or introduced vegetation removed from a site is to be disposed of away from biodiversity corridors and areas of remnant native vegetation to avoid the spread of seed and regenerative vegetative material.
- i) Where possible, structures and any associated fire protection zones must be sited on existing cleared land and not within biodiversity corridors and areas of remnant native vegetation.
- j) Regular maintenance is required for existing tracks, especially to control track damage and erosion.
- k) Non-essential roads and tracks in biodiversity corridors and areas of remnant native vegetation must be closed and rehabilitated.

- l) Road signs should be erected where biodiversity corridors and areas of remnant native vegetation cross roads to alert motorists to the significance of fauna at these sites.
- m) Activities such as horse riding and motorcycle riding can cause damage to tracks and native vegetation, spread weeds and introduce nutrients. Therefore these activities must not occur in biodiversity corridors and areas of remnant native vegetation.

5. Development Near Biodiversity Corridors and Areas of Remnant Native Vegetation

- a) All new development adjacent to biodiversity corridors and areas of remnant native vegetation must be located, designed and constructed to prevent or minimise, as far as possible, adverse impacts on vegetation and habitat.
- b) The layout of new development is to:
 - i) Ensure low intensity land uses are situated directly adjacent to the biodiversity corridor or area of remnant native vegetation;
 - ii) Ensure viability and functionality of the biodiversity corridor or area of remnant native vegetation;
 - iii) Maximise connectivity to neighbouring biodiversity corridors;
 - iv) Maximise connectivity to other areas of remnant native vegetation retained on-site or on neighbouring sites;
 - v) Ensure retained vegetation is configured to provide low edge-to-area ratios and avoid narrowing or bottlenecks within the biodiversity corridor; and
 - vi) Ensure associated road infrastructure avoids core vegetation, or where not possible, provides for wildlife under/overpasses and minimises the intrusion, length and width.

Where possible mitigate or prevent the impact of light pollution on fauna and habitat in adjacent biodiversity corridors and areas of remnant native vegetation.

6. Natural Regeneration and Planting Native Species

- 7. Natural regeneration is the preferred method of rehabilitation. However, if planting is to be undertaken, native species related to the local vegetation community should be selected when planting on both public lands and private lands to aid the restoration or expansion of bushland. **Management of Weeds and Invasive Species**

- a) Weed control refers to the control of non-native or introduced plants, particularly invasive species. Important elements of weed control are gaining an understanding of the causes of weed invasion and taking measures to minimise these causes.
- b) Measures are to be taken to prevent the occurrence of factors leading to weed invasion. Weed invasion occurs within native vegetation areas mainly as a result of the following factors:
 - i. Physical site disturbance;
 - ii. Increased soil moisture due to runoff from adjacent areas;
 - iii. Increased nutrients from runoff or waste dumping;
 - iv. Increased light levels due to clearing or dieback; and
 - v. Increase in weed propagules and seed dispersal agents.
- c) Weed control techniques are to be carried out in a manner that minimises negative environmental impacts. Different techniques are required in varying situations, especially along watercourses, which are very sensitive to pollution impacts. Regular monitoring of weeds is to be carried out on an ongoing basis to identify and respond

to the occurrence of new plant species that pose a potential threat to native vegetation.

- d) Biosecurity matter declared under the *Biosecurity Act 2015* include weed plant species posing a threat to primary production, the environment or human health. Please refer to the *Biosecurity Act 2015* for the requirements and a list of biosecurity matter. Further details on weed management in the Hawkesbury River County Council area (which includes the Penrith local government area) can be found at <http://hrcc.nsw.gov.au/>
- e) Weeds not declared as biosecurity matter (commonly called environmental weeds) should also be controlled as part of a weed management program.

D.

2.3. Bushfire Management

A. Background

This section applies to land identified on the Bushfire Prone Land Map. It also contains controls for development which, while not proposed on bushfire prone land, may still be subject to the impact from bushfires, particularly through ember attack.

To determine whether a particular site is 'bushfire prone land', Council has produced a Bushfire Prone Land Map which has been certified by the Rural Fire Service in accordance with Section 146 'Bush fire prone land' of the *Environmental Planning and Assessment Act 1979*. Applicants should review the Bushfire Prone Land Map to determine whether their site is 'bushfire prone land' and what category of risk of bushfire affects the site.

Alternatively, applicants can request a Section 149 Certificate from Council which will specify land that is identified as 'bushfire prone'.

The key objectives and controls to address bushfire risk are not set out in this Plan but are incorporated into the Rural Fire Service publication entitled *Planning for Bushfire Protection 2006 (PBP)* (as amended), as well as the *Rural Fires Act 1997* and the *Environmental Planning and Assessment Act 1979*.

By dealing with bushfire protection measures at the beginning of the planning and/or design process:

- Hazardous land uses can be avoided on bushfire prone land;
- Councils, developers and consultants can ensure subdivisions are designed and dwellings constructed to minimise the risk of bushfire attack; and
- The safety of people, property and the environment can be maximised.

B. Objectives

- a) To minimise the risk to life, property and the environment in the event of a bushfire, including the lives of emergency personnel;
- b) To ensure that all development on bush fire prone land makes adequate provision for access for emergency personnel, vehicles and equipment;
- c) To balance the risk of bushfire to life and property with the other principles in this Plan, including the need to protect and enhance existing vegetation where possible; and
- d) To recognise that land not classified as 'bushfire prone land' may still be subject to the impact from bushfire, particularly through ember attack.

C. Controls

1. Planning for Bushfire Protection

- a) If land is identified as 'bushfire prone land' on the Bushfire Prone Land Map, then any development application on that land must address the bush fire protection measures set out in the document *'Planning for Bushfire Protection 2006 (PBP)*.
- b) If the development proposes the subdivision of land for residential and rural-residential purposes or is a development which has been identified as 'special fire protection purposes', then the development will be Integrated Development under the *Environmental Planning and Assessment Act 1979*.

A development identified as 'special fire protection purposes' includes:

- i) a school
- ii) a child care centre

- iii) a hospital
- iv) a hotel, motel or other tourist accommodation
- v) seniors housing
- vi) a group home
- vii) any other purpose prescribed by section 100B (6) of the *Rural Fires Act 1997*.

2. Bushfire Assessment Report

- a) A Bushfire Assessment Report, prepared in accordance with the PBP, must accompany all development applications on land identified as bush fire prone land. (For report requirements, see Appendix F3 – DA Submission Requirements).
- b) The Single Dwelling Application Kit (available on the Rural Fire Service website www.rfs.nsw.gov.au) provides applicants with a streamlined approach to meeting the requirements of the PBP for single dwellings. It has been designed to assist applicants to provide information in support of a development application and presents options that can be incorporated into the building to mitigate the impact of bush fire on life and property.

3. Land that is Not Classified as Bushfire Prone Land

- a) Development on land zoned RU1, RU2, RU4, RU5, E2, E3, E4 and R5, or on land within 250m of any of these zones that is not identified as ‘bushfire prone land’ on the Bushfire Prone Land Map must consider ways to minimise the risk of ember attack, particularly with regard to roof design, building materials and landscape design. These matters must be addressed in the Statement of Environmental Effects.

4. Bushfire Hazard Reduction

- a) Although consent is not required for bushfire hazard reduction work, it must be authorised by the *Rural Fires Act 1997*.

D. Other Information

People seeking further information on bushfire management or preparing development applications may wish to refer to the following:

- Penrith City Council’s *Bushfire Prone Land Map*
- Rural Fire Service (2006) *Planning for Bush Fire Protection 2006* (as amended) available on the Rural Fire Service’s website at www.rfs.nsw.gov.au
- Rural Fire Service *Single Dwelling Application Kit* at www.rfs.nsw.gov.au.
- 10/50 Vegetation Clearing Code of Practice for New South Wales at www.rfs.nsw.gov.au.
- Bush Fire Environmental Assessment Code for New South Wales at www.rfs.nsw.gov.au.

Table of Contents

C3 WATER MANAGEMENT	2
3.1. THE WATER CYCLE/WATER CONSERVATION	2
3.2. CATCHMENT MANAGEMENT AND WATER QUALITY	6
3.3. WATERCOURSES, WETLANDS AND RIPARIAN CORRIDORS	13
3.4. GROUNDWATER	18
3.5. FLOOD PLANNING	20
3.6. STORMWATER MANAGEMENT AND DRAINAGE	288
3.7. WATER RETENTION BASINS/DAMS	31
3.8. RAINWATER / STORAGE TANKS	33

C3 Water Management

General Objectives

- a) To adopt an integrated approach that takes into account all aspects of the water cycle in determining impacts and enhancing water resources;
- b) To promote sustainable practices in relation to the use of water resources for human activities;
- c) To minimise water consumption for human uses by using best practice site planning, design and water efficient appliances;
- d) To address water resources in terms of the entire water catchment;
- e) To protect water catchments and environmental systems from development pressures and potential pollution sources;
- f) To protect and enhance natural watercourses, riparian corridors, wetlands and groundwater dependent ecosystems;
- g) To protect, conserve and enhance surface and groundwater resources;
- h) To integrate water management with stormwater, drainage and flood conveyance requirements; and
- i) To utilise principles of Water Sensitive Urban Design in designing new developments or infill development in existing areas.

3.1. The Water Cycle/Water Conservation

A. Background

Key Issues

Key issues for preserving the quality of water supplies and minimising impact on the water cycle include:

- a) Pursuing more sustainable consumption practices for water;
- b) Regulating the pumping of water from ground water and surface water systems;
- c) Promoting the trapping of surface run-off in dams and storage areas, where appropriate;
- d) Minimising water consumption for new developments; and
- e) Recycling grey-water and stormwater, including rain water collection.

Relevant Water Conservation Policies

For residential development, the current water conservation requirements are set out in *State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004* (BASIX). Other building types do not currently have any legislative requirements for water conservation. However, there are a number of tools available for testing the water conservation initiatives of a range of developments (e.g. the Greenstar and NABERS rating tools). The following controls supplement the existing legislative requirements for all developments.

All naturally occurring water (both surface and ground water) in NSW that is capable of being used for irrigation or for watering stock is regulated by the provisions of the *Water*

Management Act 2000 or the *Water Act 1912*. Any 'work' (which includes any dam, pump, weir, regulator, race, channel, cutting, well, excavation, etc.), which affects the quantity of water flowing to or from, or contained in, a river, stream or lake comes within the provisions of the *Water Management Act 2000* in areas where water sharing plans have commenced (includes Penrith LGA). Licences are issued to authorise (construct/install and use) such works. In relation to groundwater, the construction of any bore (which includes any bore, spear point or excavation) requires authorisation under the *Water Management Act 2000*.

B. Objectives

- a) To minimise impacts on the water cycle and natural ecosystems from redirection of water for human land uses and activities; and
- b) Where possible, to recycle water for non-drinking uses.

C. Controls

1) Alterations/Additions to Existing Buildings

Extensions to existing residential buildings will, in most cases, need to comply with the requirements of BASIX, the sustainability tool developed by the State Government.

For extensions to non-residential buildings or residential extensions that do not trigger BASIX, the following controls apply:

- a) Water saving devices must be incorporated into any internal renovation (taps, toilets, etc.).
- b) Rainwater tank(s) and gutter systems shall be installed to capture rainwater and reuse for irrigation, toilet flushing and other non-drinking purposes. Installation of rainwater tanks shall comply with the relevant standards established by Sydney Water.
- c) If water saving devices and/or rainwater tanks are not to be installed, the applicant will need to submit a statement explaining why the installation of these measures is not economically feasible or is technically difficult.

2) Pools, Spas and Water Features

Any proposal for a permanent residential swimming pool, spa pool or water feature with a capacity of greater than 40,000 litres must consider the following:

- a) Provision of shading or covers to minimise evaporation; and
- b) Other mechanisms to reduce water consumption.

3) Proposed Industrial Land Uses

Any new industrial development or significant alteration and/or addition to an industrial building needs to reduce water consumption by a combination of careful site planning, design and water efficient appliances.

Significant alterations/ additions are those where the roof or hard surface area is increased to the minimum standard AND those additions are not less than 25% of the existing roof area.

The minimum standard is:

- a) 200m² in clause 3 a)
- b) 1,000m² in clause 3 b)
- c) 600m² in clause 3 c).

The following controls apply to new industrial buildings and significant alterations/additions to industrial buildings:

- a) All proposed industrial buildings with a roof area greater than 200m² are required to install a rainwater tank of minimum capacity of 100,000 litres on the site for re-use of water in irrigation, industrial processes, toilet flushing or for other non-drinking purposes through a separate reticulated water supply system.
- b) All proposed industrial sites with a hard surface area (including roof area, driveways, parking areas, loading bays, covered storage areas, etc.) greater than 1,000m² shall submit a water management plan which estimates required water needs, and includes an investigation into the feasibility of the measures listed below, outlines those to be adopted on the site and explains why any measures not adopted were unable to be implemented:
 - i) Rainwater tanks connected to roof and gutter systems and installed to enable reuse of rainwater for irrigation, industrial processes, toilet flushing or other non-drinking purposes;
 - ii) Stormwater detention systems installed and maintained to enable the reuse of stored water for irrigation, industrial processes, toilet flushing or other non-drinking purposes, and to minimise the impact of runoff from the site;
 - iii) Roof gardens, either for recreational purposes or as a means to reduce hard stand area.
- c) Any proposed industrial development with a roof area greater than 600m² must submit a documented investigation into the feasibility of a roof garden to reduce hard surface area and associated run off.

4) Proposed Rural Land Uses

- a) Any application for a new rural land use that requires the consent of Council and will increase the water needs of a particular rural area must submit a water management plan which:
 - i) Estimates future water needs of the proposed development;
 - ii) Indicates the proposed water source to meet those needs; and
 - iii) Outlines water conservation measures to be implemented.
- b) Where new rural dwellings are proposed and reticulated water supplies are not available, each allotment or dwelling should demonstrate that it has an adequate and self sufficient water supply without having to pump from streams or groundwater sources.

5) Requirements for Extraction of Water

Rural landholders have rights to access water for some basic purposes, such as domestic and stock water, harvestable rights from farm dams and native title rights (see other provisions in this section).

Whether or not you need a licence (or other approval) from the Office of Water to access surface water (water from rivers, lakes etc.) depends on how and why you want to use the water. Please consult with the Office of Water regarding any proposed water extraction.

Access to groundwater for any purpose requires a licence or approval from the Office of Water (see other provisions in this section).

If you want to extract water from rivers or aquifers and use it for commercial purposes, you must hold a water access licence and an approval from the Office of Water.

D. Lifting the Bar

The following represent some ways in which applicants can demonstrate additional commitment to the water conservation principles expressed in this Plan. Demonstration of this commitment may lead to Council considering variation of development controls. Applications that vary the development controls listed in this section will need to demonstrate that the proposed development complies with the objectives relevant to the development controls it seeks to vary.

- a) Exceeding BASIX for proposed residential dwellings: Whilst BASIX sets the minimum requirement for reduction in water consumption for new residential dwellings (depending on location), Council recommends that an additional 10% water reduction is sought for any residential developments over 3 dwellings.
- b) Recycling of grey-water / stormwater: Where possible, any new developments or substantial re-developments of a site should seek to include opportunities for recycling of grey-water and stormwater on the site to minimise use of potable (drinking) water.
- a) Reticulated recycling systems: New large scale developments resulting in 5 or more dwellings should seek to provide a reticulated water system that enables on-site treatment and re-use of grey water from the site.

E. Other Information

People seeking further information on water management may wish to refer to the following:

- Penrith City Council's *Stormwater Drainage Specification for Building Developments*
- BASIX – the on-line program that assesses a house or unit design and compares it against energy and water reduction targets. A BASIX Certificate must be submitted with every development application for a new home. The design must meet these targets before a BASIX Certificate can be provided (www.basix.nsw.gov.au)
- Greenstar rating tool for commercial and other developments (www.gbcaus.org)
- National Australian Built Environment Rating System (NABERS) water tool for commercial and other developments (www.nabers.com.au)
- *Australian Drinking Water Guidelines* (2011) National Health and Medical Research Council (NHMRC) (compliance regulated by NSW Health)
- *Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1)* (2006) Environment Protection and Heritage Council, Natural Resource Management Ministerial Council and Australian Health Ministers' Conference
- *Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 2) - Augmentation of Drinking Water Supplies* (2008) Environment Protection and Heritage Council, Natural Resource Management Ministerial Council and Australian Health Ministers' Conference
- *Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 2) - Stormwater Harvesting and Reuse* (2009) Environment Protection and Heritage Council, Natural Resource Management Ministerial Council and Australian Health Ministers' Conference
- *Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 2) - Managed Aquifer Recharge* (2009) Environment Protection and Heritage

Council, Natural Resource Management Ministerial Council and Australian Health Ministers' Conference

- *Management of Private Recycled Water Schemes (Interim NSW Guidelines)* (2007) NSW Department of Water and Energy
- Penrith City Council's *Sustainability Blueprint for urban release areas* (June 2005)
- *NSW Water Conservation Strategy* (Oct 2000) NSW Department of Land and Water Conservation
- *Sydney Metropolitan Water Plan* (reviewed 2010) NSW Department of Water and Energy
- *Water for Life* (www.waterforlife.nsw.gov.au).

3.2. Catchment Management and Water Quality

A. Background

Catchment management requires protecting water systems from:

- Chemicals (including pesticides and insecticides);
- Untreated sewage from on-site effluent treatment and disposal systems;
- Nutrient run-off from application of fertilisers and animal manure;
- Soil erosion and sedimentation from poor construction/land use practices;
- Removal of natural vegetation around watercourses that could trap sediment and provide treatment of surface run-off to reduce pollution entering water systems; and
- Stormwater run-off and surface pollution.

Water Sensitive Urban Design (WSUD) involves adopting design and management practices that take advantage of natural site features and seek to minimise impacts on the water cycle. WSUD requires consideration of issues such as water conservation, water quality and stormwater management. It seeks to minimise the extent of impervious surfaces and mitigate changes to the natural water balance through on-site re-use of water as well as through temporary storage.

WSUD relies on an integrated approach to both water and stormwater management. This integrated approach regards stormwater as a resource and involves considering all aspects of runoff within a development, including environmental and social issues. For example, the inclusion of a multi-purpose corridor in an integrated stormwater management system may provide water features, stormwater treatment, habitat protection and recreation.

Council's Water Sensitive Urban Design Policy (2013) was prepared to improve water conservation, quality and quantity in both new developments and some redevelopments. The Policy sought to clarify which developments needed to achieve water conservation, quality and quantity outcomes. The Policy has now been incorporated into this section of the DCP.

B. Objectives

Catchment Management

- a) To adopt a total catchment management approach to water quality and protection of water systems;

- b) To prevent direct pollution of existing groundwater or surface water systems;
- c) To ensure appropriate management of land uses and activities to minimise the risk of indirect water pollution;
- d) To improve the water quality of the Hawkesbury-Nepean River system and tributaries;
- e) To ensure the high quality of discharge to sewer and drainage systems; and
- f) To protect the aquatic environment through the use of ecologically sustainable development principles.

Water Sensitive Urban Design

- g) To protect and enhance natural land and water systems such as creeks and rivers, particularly water quality.
- h) To maintain and restore the natural water balance;
- i) To make more efficient use of water resources by conserving water, particularly potable (drinking) water;
- j) To reduce flood risk in urban areas;
- k) To reduce erosion of waterways, slopes and banks;
- l) To control stormwater pollution and improve water quality in waterways and groundwater;
- m) To integrate stormwater management with water supply and waste water treatment; and
- n) To integrate stormwater treatment into the landscape so as to maximise the visual and recreational amenity of urban development.

C. Controls

1) Approval to Discharge Contaminants

Water discharge from any development must not contain contaminants, unless necessary licences and/or approvals are obtained from relevant government authorities.

All liquids (including water) produced and/or discharged from the site shall not contain pollutants above acceptable levels. Acceptable levels will be determined at the time of consideration of individual proposals by Council, the Office of Environment and Heritage and, if required, Sydney Water.

2) Addressing Potential Catchment Impacts

All applications to Council, where there is the potential to impact upon a water system, are required to identify in the application the relevant water systems in the catchment area of the site that may be affected and address how any potential impacts will be mitigated/avoided.

3) Water Quality for all Land Uses

Council's Water Sensitive Urban Design (WSUD) Policy (2013) has been prepared to improve water conservation, quality and quantity in both new development and some redevelopments. The policy seeks to clarify which developments need to achieve the targets for water conservation, quality and quantity.

Where any development could result in water quality impacts in nearby surface water systems, the water quality at that system is to be monitored for pollutants prior to the commencement of works, and at regular intervals during construction and/or operation.

Water quality entering natural areas shall either maintain or improve on pre-development levels.

All monitoring is to be undertaken in accordance with any relevant guidelines of the Office of Environment and Heritage (or any other applicable guidelines).

4) Council Approval Requirements for WSUD Systems

Development types required to meet water conservation and stormwater quality and quantity targets are defined in Table C3.1. The performance criteria required to be met are listed below under subsection '5) WSUD Development Controls'. Affected developments must submit a WSUD Strategy (report dealing with measures to be implemented as part of the development) with a Development Application.

A WSUD Strategy is a written report detailing potable water savings and stormwater quality and quantity control measures to be implemented as part of a development. The required content of the Strategy is outlined in Council's WSUD Technical Guidelines. The WSUD Technical Guidelines must be considered when undertaking certain developments within the City. The guidelines outline the information to be submitted with development applications and construction certificates, in order to demonstrate compliance with the objectives and performance criteria outlined below. The WSUD Technical Guidelines provide a list of:

- Council's requirements for the location, ownership and ongoing maintenance responsibilities of WSUD measures;
- What is to be submitted with a development application or construction certificate application;
- What is required to be included in a WSUD Strategy;
- Parameters to be used in MUSIC modelling;
- Where to get further information on the design, construction, operation and maintenance of stormwater treatment measures; and
- Council's expectations in relation to the proposed WSUD measures.

The Technical Guidelines should be read in conjunction with a number of referenced industry best practice guidelines/documents including the following:

- Draft NSW Music Modelling Guidelines (prepared for the Sydney Metropolitan CMA);
- WSUD Conceptual Design Information (prepared by Water by Design);
- WSUD Technical Design Guidelines (prepared by Water by Design);
- Typical Drawings (prepared for the Sydney Metropolitan CMA).

When preparing supporting documentation for a development application or construction certificate application, Council requires applicants and developers to engage appropriately qualified and experienced practitioners for the development of appropriate WSUD designs and strategies. Discussion with Council is encouraged at an early stage of a development proposal to agree on a general design approach before a detailed WSUD Strategy is prepared.

Nothing in this section is to be construed as limiting, in any way, Council's right to impose differing conditions when approving development proposals, or limiting the discretion of Council's nominated representative to vary any necessary requirements in respect of a particular development or Council project, having regard to potential site restrictions and best practice.

The WSUD Technical Guidelines will be periodically reviewed and updated to reflect changes in industry best practice and are available on Council's website.

Table C3.1: Developments Required to Consider Water Sensitive Urban Design

Land Use	Development Type	Water Conservation 5(a)	Stormwater Quality 5(b)	Water Quantity Flow 5(c)
Residential	Alterations and additions, detached dwellings and residential land uses not addressed below	√ - BASIX	No	No
	New single dwellings and dual occupancy	√ - BASIX	No	No
	Existing residential villas, flats and townhouses with additional impervious area greater than 250m ²	√ - BASIX	No	No
	Residential development of 5 or more dwellings including multi dwelling housing, residential housing, residential flat buildings and mixed use development	√ - BASIX	√	√
Commercial and Industrial	All new commercial, retail, mixed use and industrial development greater than 2,500m ² total site area	√ - WELS	√	√
	Alterations and additions where the increase in roof area and impervious area* is equal to or greater than 250m ² .	√ - WELS	√	√
	Commercial, retail, mixed use and industrial	√ - WELS	No	No

Land Use	Development Type	Water Conservation 5(a)	Stormwater Quality 5(b)	Water Quantity Flow 5(c)
	development not addressed above			
Subdivision (where new road and or carriageway works are involved)	Residential (5 or more lots) or commercial and industrial subdivision	N/A	√	√
Other development not listed above	Any development which results in an increase of the existing impervious area by greater than 250m ² . Development includes but not limited to additional roads, driveways, vehicle parking areas, manoeuvring areas, loading and storage areas	√ - WELS (as required)	√	√

Note: √ means performance criteria detailed in subsection '5) WSUD Development Controls' apply.

*Additional impervious area includes building footprint (including roof area), vehicle access ways and parking spaces.

5) WSUD Development Controls

A. Water conservation

Water conservation seeks to reduce the demand for potable water. Reduced potable mains water demand is a key commitment of the NSW Government as outlined in the Metropolitan Water Plan (see <http://www.waterforlife.nsw.gov.au>). The NSW Government's BASIX Scheme requires all new residential development to incorporate water savings measures (<http://www.basix.nsw.gov.au>). There are, however, no such requirements for other development types (e.g. commercial or industrial), which are addressed by these controls.

Objectives

- To reduce consumption of potable water for all development types within the City;
- To use harvested rainwater, treated urban stormwater or treated wastewater for non-potable substitution where appropriate.

Performance Criteria

Water conservation requirements for development types identified in Table C3.1 are:

- a) All residential buildings are to demonstrate compliance with State Environmental Planning Policy – Building Sustainability Index (BASIX), as required.
- b) All buildings not covered by the State Environmental Planning Policy – BASIX:
 - i) That are installing any water use fittings must demonstrate minimum standards defined by the Water Efficiency Labelling and Standards (WELS) Scheme. Minimum WELS ratings are 4 star dual-flush toilets, 3 star showerheads, 4 star taps (for all taps other than bath outlets and garden taps) and 3 star urinals. Water efficient washing machines and dishwashers are to be used wherever possible.
 - ii) To install rainwater tanks to meet 80% of non-potable demand including outdoor use, toilets and laundry;
 - iii) To incorporate passive cooling methods that rely on improved natural ventilation to supplement or preclude mechanical cooling.
- c) Where cooling towers are used, they are:
 - i) To be connected to a conductivity meter to ensure optimum circulation before discharge;
 - ii) To include a water meter connected to a building energy and water metering system to monitor water usage;
 - iii) To employ alternative water sources for cooling towers where practical and in accordance with the Public Health Act and NSW Health Guidelines.
- d) Water use within public open space (for uses such as irrigation, pools, water features, etc.) should be supplied from sources other than potable mains water (e.g. treated stormwater or greywater) to meet 80% water use demand.

B. Stormwater Quality

Urban development increases the pollution load entering receiving environments. Stormwater quality controls have been derived through the modelling of numerous combinations of WSUD elements for a range of urban development types. They reflect a cost-effective level of stormwater treatment considered to be technically feasible in terms of land-take (or footprint) of stormwater and WSUD measures. Stormwater quality elements are to be sized using MUSIC modelling (the model for Urban Stormwater Improvement Conceptualisation, or equivalent) using Penrith data, which is available in the associated WSUD Technical Guidelines.

Objectives

- a) To safeguard the environment by improving the quality of stormwater run-off entering receiving waters.

Performance Criteria

Stormwater quality requirements for all development types identified in Table C3.1 are:

- a) Pollution load reductions:
 - i) 90% reduction in the post development mean annual load total gross pollutant (greater than 5mm);
 - ii) 85% reduction in the post development mean annual load of Total Suspended Solids (TSS);
 - iii) 60% reduction in the post development mean annual load of Total Phosphorus (TP);
 - iv) 45% reduction in the post development mean annual load of Total Nitrogen (TN);

- v) 90% Free Oils and Grease with no visible discharge.
- b) Modelling for the determination of the mean annual loads of land uses must be undertaken in MUSIC and in accordance with the associated WSUD Technical Guidelines.
- c) Any changes to the flow rate and flow duration within the receiving watercourses as a result of the development shall be limited as far as practicable. Natural flow paths, discharge point and runoff volumes from the site should also be retained and maintained as far as practicable.
- d) Impervious areas directly connected to the stormwater system shall be minimised. Runoff from impervious areas such as roofs, driveways and rainwater tank overflows shall be directed onto grass and other landscaped areas designed to accept such flows.

C. Stormwater Quantity – Stream Forming Flows

Urban development has the potential to significantly increase surface runoff flow rates and volumes leading to impacts on stream stability, receiving water ecology and flooding in receiving waters.

Objectives

- a) To manage the volume and duration of stormwater flows entering local waterways so as to protect the geomorphic values of those waterways.

Performance Criteria

- a) The post development duration of stream forming flows shall be no greater than 3.5 times the pre developed duration of stream forming flows. The comparison of post development and pre development stream flows is commonly referred to as the Stream Erosion Index (SEI). The approach to evaluating the SEI is outlined in the associated WSUD Technical Guidelines.

6) Use and Storage of Chemicals/Pesticides/Fertilisers

- a) Any application for a land use/activity that involves significant use of chemicals/fertilisers must demonstrate what measures are proposed to minimise and control nutrients or chemicals entering watercourses, water bodies or groundwater.
- b) All land uses, particularly rural land uses, should avoid use of chemicals and pesticides in areas or situations where they are likely to enter surface water or ground water sources.
- c) Chemicals and pesticides must be stored in such a way as to prevent accidental leakage into water systems or the on-site stormwater system. This may include:
 - i) Secure storage in a bunded area; and
 - ii) Secure storage in water proof/spill proof containers.

7) Other relevant areas of this DCP

Provisions relating to on-site effluent disposal, soil erosion and sedimentation and protection of vegetation near watercourses are all highly relevant to water quality. Applicants should refer to these and other relevant sections of this DCP for more information.

D. Lifting the Bar

The following represent some ways in which applicants can demonstrate additional commitment to the catchment management/water quality principles expressed in this Plan. Demonstration of this commitment may lead to Council considering variation of development controls. Applications that vary the development controls listed in this section will need to

demonstrate that the proposed development complies with the objectives relevant to the development controls it seeks to vary.

- a) On-site water monitoring for water pollutants to identify practices/activities impacting on the water systems; and
- b) Best-practice farming practices including minimising the use of chemicals and fertilisers (where possible).

E. Other Information

People seeking further information on water quality may wish to refer to the following:

- Penrith City Council's *Stormwater Drainage Specification for Building Developments*
- *ANZECC Guidelines and Water Quality Objectives in NSW* (2000) Department of Environment (Australian Government)
- Office of Environment and Heritage's website – www.environment.nsw.gov.au
- Sydney Catchment Authority's website - www.sca.nsw.gov.au
- Sydney Water Corporation's website - www.sydneywater.com.au
- Penrith City Council's *Sustainability Blueprint for urban release areas* (June 2005)
- Penrith City Council's *Water Sensitive Urban Design Technical Guidelines*, (December 2013)
- www.wsud.org

3.3. Watercourses, Wetlands and Riparian Corridors

A. Background

A riparian corridor is the land directly adjacent to (or surrounding) a natural or artificial waterway and provides a crucial link between terrestrial and stream ecosystems.

Wetlands and riparian corridors help purify water, improving the quality of larger water bodies. As runoff from surrounding land is critical to the performance of a wetland or riparian corridor, buffer areas are needed around wetlands and riparian corridors to minimise the entry of pollutants.

In addition to the water catchment management issues above, the following issues need to be addressed in relation to land uses and activities which can impact on watercourses, wetlands and riparian corridors:

- Preserving the natural alignment of watercourses;
- Avoiding disturbance to the watercourse banks and channels;
- Retaining native vegetation along creek corridors to stabilise banks and treat surface water run-off;
- Protecting wetland and riparian corridor flora and fauna;
- Providing setbacks to development in proximity to watercourses, wetlands and riparian corridors; and
- Protecting the watercourses natural stream flow regimes.

B. Objectives

- a) To protect water quality and terrestrial and aquatic life forms by identifying a riparian corridor along identified waterways and establishing specific planning controls for land within those corridors;
- b) To minimise disturbance and/or impacts on natural waterbodies;
- c) To rehabilitate existing riparian corridors and ensure that width, buffers to development, quality of landscape and diversity of vegetation to support principles of ecological sustainability are provided.

C. Controls

1) Controlled Activity Approval under the Water Management Act 2000

If any activities/land uses are proposed near a watercourse, the *Water Management Act 2000* may apply and you may be required to seek a Controlled Activity Approval from the Office of Water. Please consult with this Office regarding your proposal. Except for certain exemptions, you are likely to need a controlled activity approval for:

- a) The erection of a building or the carrying out of a work (within the meaning of the *Environmental Planning and Assessment Act 1979*) on the bank or shore of any river, estuary or lake or within 40m from the top of its bank or shore;
- b) Excavation in a river, estuary or lake, or within 40m from the top of its bank or shore;
- c) Removal of material (including vegetation) from the bank or shore of any river, estuary or lake or from within 40m from the top of the bank or shore;
- d) Deposition of material, whether by way of landfill operations or otherwise on or within the bank or shore of any river, estuary or lake or within 40m from the top of the bank or shore;
- e) Anything which affects the quantity or flow of water in a water source, or is likely to do so.

Even if there is an exemption from the requirement for an approval from this Office, you may still require the approval of Council. You may also require approval from Fisheries (NSW).

2) Preserving Alignment of Watercourses

- a) Where possible, the natural (or historic) alignment of an existing wetland or watercourse should be retained along with its natural dimensions and flow regimes.
- b) Watercourses should not be straightened to reduce the natural meander or flow path or to improve flood conveyance.
- c) The alignment of major overland flow paths should be recognised in site planning and development design.

3) Avoiding Modifications to Natural Waterbodies

- a) There should be no modifications to a natural (or historic) waterbody in its dimensions, depth or bank height unless it seeks to enhance the ecological outcomes of the waterbody.
- b) Watercourses should not be modified to maximise flood conveyance unless there are no other means to avoid damage to existing dwellings or infrastructure that cannot be relocated.

- c) Natural hydrological processes are to be maintained where possible, including natural vegetation and the flow regimes to maintain creek line stability and the health of terrestrial and aquatic plant communities.

4) Protection and Enhancement of Riparian Corridors

- a) All riparian corridors should comprise a vegetated riparian zone along each side of the waterway (see Figure C3.1).
- b) The vegetated riparian zone should retain or be vegetated with, fully structured native vegetation (trees, shrubs and groundwater species).
- c) In relation to activities within the vegetated riparian zone, such as cycleways and paths, detention basins, stormwater management devices and essential services, compliance is required with the 'riparian corridor matrix' in the NSW Office of Water's Guidelines for riparian corridors on waterfront land (July 2012).
- d) A managed buffer zone outside the vegetated riparian zone should be provided (where possible), to provide an additional buffer between development and the vegetated riparian zone. Land uses within the managed buffer zone could include roads, paths, playgrounds and stormwater management devices.
- e) Asset protection zones should be located outside the vegetated riparian zones.
- f) Appropriate widths for vegetated riparian zones will depend on the specific ecosystems being managed. Council's approach to determining the Order of Stream is based on the Strahler methodology, which is consistent with the NSW Office of Water.

Council reserves the right to assess each riparian corridor and each development on its merits. In general, however, the width will depend on the order of the stream/watercourse (see Figure C3.2) which provides an indication. The width should be measured from the top of the highest bank on both sides of the stream/watercourse, excluding any managed buffer zone, and shall comply with the requirements outlined in Table C3.3.

Figure C3.1

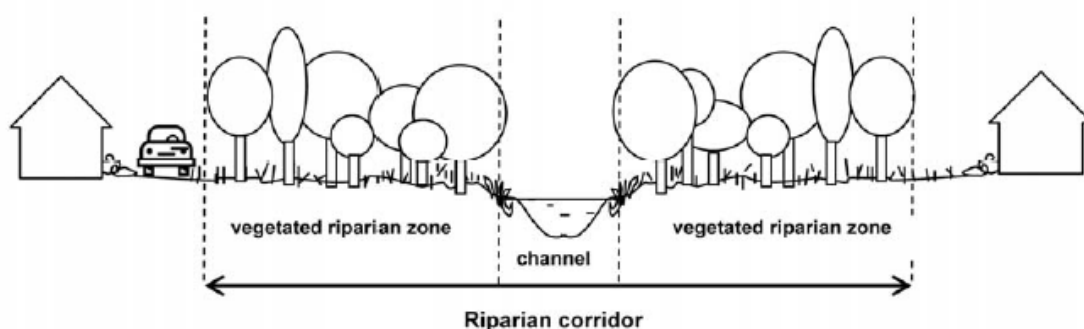


Figure C3.2: Stream Classification

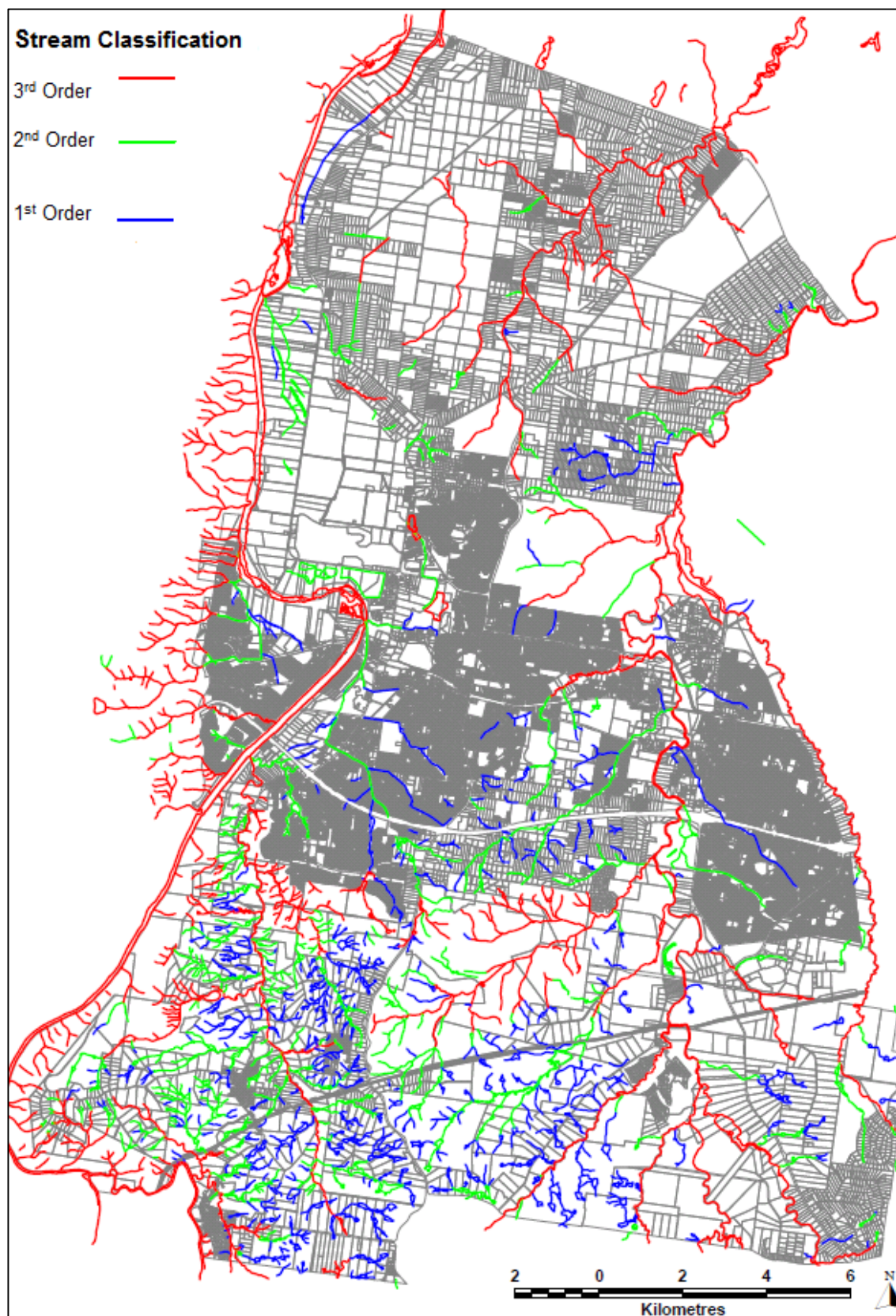


Table C3.3

Water Course Type	Vegetated Riparian Zone Width	Total Riparian Corridor Width
1 st Order (Blue)	10m	20m + channel width
2 nd Order (Green)	20m	40m + channel width
3 rd Order (Red) except Nepean River	30m	60m + channel width
Nepean River	90m	
Wetland	40m	80m + channel width

Where, a watercourse has had a gabion wall or channellisation constructed, this should be removed to restore a natural meander for ecological purposes, except where:

- i) The length of the watercourse through the development site is less than 50m; or
- ii) The watercourse through the development site is a middle section of the overall watercourse, and it is technically unfeasible to reverse the channellisation; or
- iii) Restoring the natural meander will create a hazard.

Enhancement of riparian corridors should, where possible:

- i) Mimic natural hydrological regimes for watercourse treatments;
- ii) Replicate the natural watercourse through creation of a meandering channel, rather than straight channels;
- iii) Simulate natural roughness having regard to riparian requirements and flow velocities to sustain vegetation groupings;

Roughness: A watercourse's shape, smoothness of its channel and amount of vegetation in the channel all affect the 'roughness' of that watercourse and the speed of water conveyed in the channel.

- iv) Minimise ongoing maintenance requirements through channel design;
- v) Establish a functional riparian zone and natural channel section;
- vi) Maintain or create a full assemblage of vegetation with likely natural obstructions;
- vii) Create variations in channel cross-section and provide an opportunity for meandering of the channel within the flood plain;
- viii) Minimise likely damage to channel banks and vegetation from storm flow through channel design; and
- ix) Ensure that the channel has the capacity for appropriate flood flows having regard to the steepness of the catchment; channel modifications and future liability for land owners, Council and government agencies.

There may be a need for a sensitivity analysis for a range of flood hydrology and design flows having regard to supporting flood studies for development.

D. Lifting the Bar

The following represent some ways in which applicants can demonstrate additional commitment to the protection of watercourses, wetlands and riparian corridors expressed in this Plan. Demonstration of this commitment may lead to Council considering variation of development controls. Applications that vary the development controls listed in this section will need to demonstrate that the proposed development complies with the objectives relevant to the development controls it seeks to vary.

a) No development or site disturbance occurs:

- i) Within 40m on either side, measured from the top of the bank, of a 2nd Order stream/watercourse; or
- ii) Within 20m on either side, measured from the top of the bank, of a 1st Order stream/watercourse or significant natural drainage line; and
- iii) Where riparian corridors are also acting as a significant wildlife corridor (subject to Council's review), the minimum area to be protected or revegetated is 40m on either side of the watercourse. This may be increased to up to 60m if the wildlife corridor is significant, or if it forms a major link to an extensive area of natural bushland (e.g. nature reserve or national park).

E. Other Information

People seeking further information on watercourses, wetlands and riparian corridors may wish to refer to the following:

- Penrith City Council's *Stormwater Drainage Specification for Building Developments*
- *Guidelines for riparian corridors on waterfront land* (2012) (Office of Water)
- *NSW Wetlands Policy* (2010) (Office of Water)
- *NSW Rivers and Estuaries Policy* (1993) (Office of Water)
- Penrith City Council's *Sustainability Blueprint for urban release areas* (June 2005)
- *Rehabilitation Manual for Australian Streams* (1999) Rutherford et al
- *Natural Channel Design Guidelines* (2003) (Brisbane City Council)
- *Stream Corridor Restoration: Principles Processes and Practices* (2000) United States Department of Agriculture
- Fairfull, S. and Witheridge, G. (2003) *Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings*. NSW Fisheries, Cronulla, 16pp
- NSW Fisheries (2013) *Policy and Guidelines for Fish Habitat Conservation* NSW Department of Primary Industries, *Policy and Guidelines for Fish Friendly Waterway Crossings*.

3.4. Groundwater

A. Background

Groundwater is water located beneath the ground surface in soil pore spaces and in the fractures of rock formations. Water can become trapped in aquifers which provide useable quantities of water. The depth at which soil pore spaces or fractures and voids in rock become fully saturated with water is called the water table. Groundwater is recharged from,

and eventually flows to, the surface naturally. Natural discharge often occurs at springs and streams, and may also form oases or wetlands.

Groundwater is often withdrawn for agricultural, residential, construction (i.e. dewatering where construction is below the water table) and industrial use. However, due to demand for water, there are increasing pressures on groundwater and aquifer supplies and groundwater dependent ecosystems which need to be managed. Most controls relating to groundwater use are governed by State Government and not Council. A summary of the key issues is set out below to guide any developments that may impact on groundwater.

B. Objectives

- a) To protect groundwater supplies against excessive water extraction;
- b) To protect groundwater supplies against pollution and contaminants;
- c) To provide equity in access to groundwater supplies.

C. Controls

1) Utilising Groundwater/Bores

Where groundwater is proposed to be accessed, satisfactory arrangements for the proper utilisation and protection of the groundwater resource must be made with the Office of Water. All piezometers or bores must be licensed by the Office of Water.

A bore must be at least:

- a) 40m from the nearest bank of any river or creek;
- b) 500m from any town water supply bore;
- c) 400m from any irrigation bore on an adjoining property;
- d) 50 – 100m from a property boundary; and
- e) 200 – 400m from any Office of Water observation bores.

For distance rules, applicants are advised to consult the Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources – Part 9 – Rules for Water Supply Work Approvals.

2) Protecting Groundwater

- a) Applicants are required to consider the impact of the proposed development on underlying and surrounding groundwater resources and adopt appropriate measures to avoid these impacts.
- b) The following matters should be considered:
 - i) The design of the development and the potential for its below-ground extent to impede, dam or otherwise obstruct the passage of groundwater flow;
 - ii) The management of stormwater or roof runoff within and around the development and any potential degradation or deterioration of local groundwater quality that may occur as a result;
 - iii) The management of greywater or wastewater generated from the development and any potential degradation or deterioration of local groundwater quality that may occur as a result;
 - iv) The existence of groundwater users in the vicinity of the development and the potential for them to be adversely impacted by the proposed development;

- v) The vulnerability of groundwater locally and the pollution potential of the development; and
 - vi) The presence and distribution of groundwater dependent systems (environmental attributes having a dependence on groundwater) in the vicinity and the potential for adverse impacts to occur as a result of the development.
- c) Groundwater shall not generally be pumped or extracted without specific licensed approval for any purpose other than temporary construction dewatering at the site identified in the development application.
- d) Where construction is proposed below the water table:
- i) The volume of any groundwater abstracted for the purposes of temporary dewatering should be minimised, e.g. by minimising the length of time that any basement excavations below the water table are left open. In general, the Office of Water will not authorise temporary construction dewatering for periods of more than 12 months.
 - ii) The design and construction of the building should prevent any long-term take of groundwater by making any below-water table levels watertight for the anticipated life of the building. Waterproofing of below-ground levels must be sufficiently extensive to incorporate adequate provision for unforeseen high water table elevations to prevent potential future inundation.
 - iii) A reasonable estimate of the total volume of groundwater to be extracted shall be calculated and a report provided to the NSW Office of Water. Details of the calculation method shall be included in the report.

D. Other Information

People seeking further information on groundwater may wish to refer to the following:

- *NSW State Groundwater Policy Framework Document* (1997) NSW Government
- *NSW State Groundwater Quality Protection Policy* (1998) NSW Government
- *NSW State Groundwater Dependent Ecosystems Policy* (2002) NSW Government
- *Hawkesbury-Nepean Catchment Groundwater Vulnerability Map* (1998) Department of Land and Water Conservation
- *Hawkesbury-Nepean Catchment Groundwater Availability Map* (1998) Department of Land and Water Conservation.

3.5 Flood Planning

A. Background

Impact of Flooding

The Hawkesbury/Nepean River system has one of the most dramatic flood behaviours in the world. The geography and topography of the area mean that flood waters are contained in the Nepean Gorge until they reach the floodplains at Penrith, resulting in unusually rapid rises in water levels. These floods continue to modify the physical environment of the valley as well as causing social and economic challenges to the valley's inhabitants.

Relevant Policies

Local government is the primary authority responsible for both flood risk management and land use planning in NSW. However, the State Government has introduced the *Flood Prone*

Land Policy and the associated *Floodplain Development Manual* (2005) (FDM) to reduce the impacts of flooding and flood liability on individual owners and occupiers of flood prone property, and to reduce private and public losses resulting from floods, utilising ecologically positive methods wherever possible. To achieve this objective, the supporting FDM acknowledges a broad risk management hierarchy of:

- avoidance of flood risk;
- minimisation of flood risk using appropriate planning controls; and
- flood risk mitigation.

Generally, the Flood Prone Land Policy adopts the following approach:

- The impact of flooding and flood liability on existing developed areas shall be reduced by flood mitigation works and measures, appropriate development and building controls and the voluntary acquisition of property in hazardous areas;
- The potential for flood losses in all new developed areas shall be contained by the application of effective planning and development controls;
- A merit approach to all development and building decisions which takes account of social, economic factors, as well as flooding considerations, should be followed.

Local Environmental Plan

The LEP contains provisions for development on land at or below the flood planning level, defined in the LEP as the level of a 1:100 Average Recurrence Interval (ARI) (1% AEP (100 year ARI)) flood event plus 0.5m freeboard.

The 1% AEP (100 year ARI) flood event is a tool for broadly assessing the suitability of land for development. It is not an assessment of flood risk, nor does reference to the 1% AEP (100 year ARI) flood event mean that properties and development above this level are not subject to flood risk.

Average Recurrence Interval (ARI) is the long term average number of years between the occurrence of a flood as big as or larger than the selected event. For example, floods with a discharge as great as or greater than the 100 year ARI flood event will occur on average once every 100 years.

Consideration of Floods Larger than the 1% AEP (100 year ARI) Flood Event

The 1% AEP (100 year ARI) flood is not, in most cases, the largest flood that can occur. There have been documented floods which exceeded this level for the Nepean River on a number of occasions over the last 200 years. The highest flood event at Penrith occurred in June 1867 and is estimated at greater than the 1:200 ARI event. Floodwaters reached a peak height of 27.5m above Australian Height Datum and covered most of the present day Emu Plains and large parts of Penrith. The 1967 flood for Ropes Creek and the 1956 and 1988 floods for South Creek were also major flood events.

For this reason, developments that may have a significant impact on the extent of flooding experienced by nearby or downstream properties may be asked to consider floods larger than the 1% AEP (100 year ARI) flood event. Significant areas of Penrith are affected by the Probable Maximum Flood (PMF) and in some cases this will need to be considered in determining flood hazard.

Probable Maximum Flood (PMF) is the largest flood that could conceivably occur at a particular location.

Flood Hazard Classifications

In order to determine what development may occur in areas subject to partial or full flooding, it is necessary to classify land according to flood hazard.

The greatest flood hazard occurs in land that is a 'floodway'. They are often aligned with obvious naturally defined channels.

Floodway is defined as those areas of the floodplain where a significant discharge of water occurs during floods.

In addition, there are significant risks in 'flood storage areas'.

Flood storage areas are defined as those parts of the floodplain that are important for the temporary storage of floodwaters during the passage of a flood.

Floodplain is defined as the area of land which is subject to inundation by floods up to and including the PMF event.

The remaining area of land affected by flooding after floodway and flood storage areas have been defined is the 'flood fringe area'.

Alterations to Land at or below the Flood Planning Level/Watercourses

One key issue with the development of land at or below the flood planning level is that some developments have the potential to adversely affect flood behaviour (including flow distributions and velocities). This can result in detrimental increases in the potential flood impacts on other development or properties and/or impacts on the floodplain environment that could cause erosion, siltation, destruction of riparian vegetation or a reduction in the stability of the river bank/watercourse.

Developments that would partially or fully block floodways or flood storage areas may result in redistribution of flood flows or impacts. The greatest impact comes from filling land at or below the flood planning level in order to raise development above the flood planning level. Therefore, these impacts must be minimised in the location and design of any structures on the land.

Minimising Flood Impacts on Property

Flood impacts on property can be reduced not only by appropriate location of development but also by design, layout and structure. This Plan provides controls for appropriate levels for 'habitable rooms' or 'flood proofing' of buildings.

Habitable rooms are defined as a living area such as a lounge room, dining room, rumpus room, kitchen and bedroom and excluding garages.

Flood proofing refers to the combination of measures incorporated in the design, construction and alteration of individual buildings or structures subject to flooding to reduce or eliminate flood damages.

B. Objectives

- a) To ensure floodplain risk management minimises the potential impact of development and other activity upon the aesthetic, recreational and ecological value of the waterway corridors;
- b) To maintain the existing flood regime and flow conveyance capacity and avoid significant adverse impacts on flood behaviour;

- c) To avoid significant adverse effects on the floodplain environment that would cause erosion, siltation, destruction of riparian vegetation or a reduction in the stability of the river bank/watercourse;
- d) To reduce the impact of flooding and flood liability on individual owners and occupiers;
- e) To limit the potential risk to life and property resulting from flood events;
- f) To contain the potential for flood losses in all new developed areas by the application of effective planning and development controls;
- g) To apply a “merit approach” to all development and building decisions, which takes account of social, economic and ecological factors as well as flooding considerations;
- h) To prevent the introduction of unsuitable land uses on land subject to the flood planning provisions of the LEP; and
- i) To deal equitably and consistently (where possible) with applications for development on land affected by potential floods, in accordance with the principles contained in the Floodplain Development Manual, issued by the NSW Government.

C. Controls

The following controls only apply to land subject to the flood planning provisions of the LEP.

1) Submission Requirements

- a) Where relevant, a comprehensive flood study, incorporating:
 - i) a survey of the main watercourse;
 - ii) a survey of the site; and
 - iii) a detailed flood and drainage investigation which establishes the estimated 1% AEP (100 year ARI) flood level;

is to be submitted with any development application on land identified as fully or partially flood affected. The levels on the survey are required to be verified during construction by a survey certificate.
- b) The applicant shall be required to demonstrate to the satisfaction of Council (on the basis of a qualified consultant report) that:
 - i) The development will not increase the flood hazard or risk to other properties;
 - ii) The structure of the proposed building works shall be adequate to deal with flooding situations;
 - iii) The proposed building materials are suitable;
 - iv) The buildings are sited in the optimum position to avoid flood waters and allow safe flood access for evacuation;
 - v) The proposed redevelopment will not expose any resident to unacceptable levels of risk or any property to unreasonable damage; and
 - vi) Compliance of any existing buildings with the *Standard - Construction of Buildings in Flood Hazard Area* and the accompanying handbook developed by the Australian Building Codes Board (2012).

2) Flood Hazard Classifications

- a) Council will consider development on land subject to the flood planning provisions of the LEP but will not grant consent to new development in floodways or in high hazard areas.

Flood hazard (high) or high flood hazard occurs when there is possible danger to life and limb; evacuation by trucks is difficult; there is potential for structural damage; and social disruption and financial losses could be high.

- b) Consideration will be given to such matters as depth and nature of flood waters, whether the area forms flood storage, the nature and risk posed to the development by flood waters, the velocity of floodwaters and the speed of inundation, and whether the development lies in an area classed as a 'floodway', 'flood fringe area' or 'flood storage area'.

3) Residential - New Developments - Single Dwellings

- b) Residential – upper storey additions will not be considered as 'New Development' provided; the first floor additions are above the Flood Planning level and the additions and alterations do not increase the building footprint at ground level beyond 35m². (Ground floor additions include all non-habitable buildings such as garages, storage areas, carports and the like).
- c) Floor levels of habitable rooms shall be at least 0.5m above the 1% AEP (100 year ARI) flood; i.e. the flood planning level.
- d) The lowest floor level of habitable rooms shall be not more than 3.0m above ground level.
- e) Any portion of buildings subject to inundation shall be built from flood compatible materials.
- f) Flood safe access and emergency egress shall be provided to all new developments and for dwelling replacements where practicable.

Flood safe access means access that is generally considered satisfactory when the depth of flooding over vehicular driveways and roads is limited to approximately 0.25m with low velocities.

- g) All services associated with the development shall be adequately flood proofed.
- h) A certificate, prepared by a registered surveyor to verify the lowest floor level of a habitable room of a residential building to the required Australian Height Datum (AHD) level, shall be submitted to the Council upon completion of the building to that level. The building shall not be further constructed until approval is given by Council to proceed with construction works.

4) Residential - Minor Extensions

- a) This section does not apply to minor extensions for the purpose of dual occupancy development, an existing single storey home which retains essentially the outer walls of the existing dwelling and proposes an upper floor addition, a knockdown rebuild that retains exactly the same building footprint, or a building burnt down and replaced with the same building footprint. These shall be treated as new development.
- b) Once only extensions with a floor area up to 30m² may be approved with floor levels below the 1% AEP (100 year ARI) flood, if the applicant can demonstrate that no practical alternatives exists for constructing the extension above the 1% AEP (100 year ARI) flood.
- c) Once only extensions which increase the existing floor area by between 30 and 35m² may be approved with floor levels at or above the 1% AEP (100 year ARI) flood.
- d) Extensions greater than 35m² will be treated as a new development.

5) Non-Habitable Extensions or Alterations, Outbuildings and Swimming Pools

- a) All electrical services shall be adequately flood proofed.
- b) All flood sensitive equipment (including electric motors and switches) shall be located above the 1% AEP (100 year ARI) flood.

6) Industrial/Commercial - New Development

- a) Floor levels shall be at least 0.5m above the 1% AEP (100 year ARI) flood or the buildings shall be flood-proofed to a least 0.5m above the 1% AEP (100 year ARI) flood. If floor levels are below the 1% AEP (100 year ARI) flood the matters listed in section 7 i) – vii) shall be addressed.
- b) Flood safe access and emergency egress shall be provided to all new developments.

7) Industrial/Commercial - Extensions and Infill Development

- a) Where the application is for an extension to an existing building on land at or below the flood planning level or for new development that can be classed as infill development, Council may approve of the development with floor levels below the 1% AEP (100 year ARI) flood if it can be demonstrated by the applicant that all practical measures will be taken to prevent or minimise the impact of flooding. In considering such applications and determining the required floor level, Council shall take into account such matters as:
 - i) The nature of the business to be carried out;
 - ii) The frequency and depth of flooding;
 - iii) The potential for personal and property loss;
 - iv) The utility of the building for its proposed use;
 - v) Whether the filling of the site or raising of the floor levels would render the development of the property unworkable or uneconomical;
 - vi) Whether the raising of the floor levels would be out of character with adjacent buildings; and
 - vii) Any risk of pollution of water from storage or use of chemicals within the building.
- b) Any portion of the proposed building extension subject to inundation shall be built from flood compatible materials.

8) Change of Use of Existing Buildings

- a) Development consent for change of use of an existing building with floor levels below the 1% AEP (100 year ARI) flood will only be given where it can be demonstrated by the applicant that:
 - i) There is no foreseeable risk of pollution associated with the proposed use of the building in the event that the 1% AEP (100 year ARI) flood occurs;
 - ii) All practical measures shall be taken to minimise the risk of flood damage to the property within the building by the 1% AEP (100 year ARI) flood. These measures could include:
 - Flood proofing the building to the level of the 1% AEP (100 year ARI) flood by either construction of a wall or levee bank or some other means of preventing water entry;

- Raising the floor level of the building to the level of the 1% AEP (100 year ARI) flood; and/or
- Storing all equipment, machinery and stock above the 1% AEP (100 year ARI) flood level.

9) Rural Uses

- a) Applications for minor extensions to existing buildings and new buildings associated with rural uses that are below the 1% AEP (100 year ARI) flood (other than residential buildings) will be considered on their merits having regard to the proposed use and the potential for property loss.

10) Subdivision

- a) Generally, subdivision of land below the flood planning level will not be supported. Further provisions relating to the proposed subdivision of such land can be found in the Subdivision Section of this Plan.

11) Residential Accommodation and Caravan Parks

- a) Applications for residential accommodation, defined in the LEP, with the exception of dwelling houses, will be treated as per subdivisions. Applications for caravan parks will also be treated as per subdivisions. Other land uses which may attract large numbers of people.
- b) Council will generally not support an application for any land use which may attract large numbers of people (including schools, function centres, child care centres, hostels, etc.) on land below the flood planning level and on land that cannot be safely and effectively evacuated during a 1% AEP (100 year ARI) flood event.

12) Storage of Potential Pollutants above 1% AEP (100 year ARI) Flood

- a) All potential pollutants that are stored or detained on-site (such as on-site effluent treatment plants, pollutant stores or on-site water treatment facilities) should be stored above the 1% AEP (100 year ARI) flood. Details must be provided as part of any application to Council.

13) Overland Flow Flooding

- a) Council has undertaken a Penrith Overland Flow Flood 'Overview' Study. Consideration must be given to the impact on any overland flow path. Generally, Council will not support development obstructing overland flow paths. Development is required to demonstrate that any overland flow is maintained for the 1% AEP (100 year ARI) overland flow. A merit based approach will be taken when assessing development applications that affect the overland flow.
- b) Council's *Stormwater Drainage Specification for Building Developments* provides information on the details required in the preparation of an overland flow study.

14) Filling of Land At or Below the Flood Planning Level

- a) Council will not grant consent to filling of floodways or high hazard areas. The filling of other land at or below the flood planning level will generally not be supported; however, Council will adopt a merits based approach. In particular, an application to fill land shall also

describe the purpose for which the filling is to be undertaken. Council may consider such an application when the following criteria are met:

- i) Flood levels are not increased by more than 0.1m by the proposed filling;
 - ii) Downstream velocities are not increased by more than 10% by the proposed filling;
 - iii) Proposed filling does not redistribute flows by more than 15%;
 - iv) The potential for cumulative effects of possible filling proposals in that area is minimal;
 - v) There are alternative opportunities for flood storage;
 - vi) The development potential of surrounding properties is not adversely affected by the filling proposal;
 - vii) The flood liability of buildings on surrounding properties is not increased;
 - viii) No local drainage flow/runoff problems are created by the filling; and
 - ix) The filling does not occur within the drip line of existing trees.
- b) The above criteria can only be addressed and satisfied by the submission of a detailed flood study report by an appropriate consulting engineer. The flood study report would involve both hydrologic and hydraulic analysis of the watercourse and the effects of the proposed filling on flood levels, flow velocities and distribution of flows as listed in i) to iii) above. In addition, the report needs to address items iv) to ix) listed above. Any filling of land also needs to be in accordance with the other provisions in this Plan.

15) Rezoning of Land

- a) Council will not support the rezoning of any land located in a floodway or high hazard area.
- b) Council will generally not support the rezoning of rural land situated below the 1% AEP (100 year ARI) flood where the development of that land may require or permit the erection of buildings or works even if the surface of the land can be raised to a level above the 1% AEP (100 year ARI) flood by means of filling.
- c) Where land below the flood planning level is currently zoned to permit urban development, Council will generally not support the rezoning of land to permit a higher economic use or an increase in the density of development.

D. Other Information

People seeking further information on flood planning lands or preparing development applications may wish to refer to the following:

- Penrith City Council's *Stormwater Drainage Specification for Building Developments*
- NSW Government's *Flood Prone Land Policy* and associated *Floodplain Development Manual* (2005)
- Penrith City Council's *Sustainability Blueprint for urban release areas* (June 2005)
- *Standard - Construction of Buildings in Flood Hazard Areas* and accompanying handbook, developed by the Australian Building Codes Board (2012).

3.6. Stormwater Management and Drainage

A. Background

Stormwater is a term used to describe water that originates primarily from rainfall or from runoff water that enters the stormwater system. Stormwater that does not soak into the ground becomes surface runoff, which either flows into surface waterways or is channelled into stormwater systems. In Penrith, stormwater generally drains to the street drainage system or drainage easements in urban areas.

There are two main issues in relation to stormwater - one related to the volume and timing of runoff water (flood control and water supplies) and the other related to potential contaminants that the water is carrying (water pollution).

Because impervious surfaces (parking lots, roads, buildings) do not allow rain to infiltrate into the ground, more runoff is generated than in the undeveloped condition. This additional runoff can erode watercourses as well as cause flooding when the stormwater collection system is overwhelmed. Excess water can also infiltrate soils and raise water tables resulting in additional salinity issues.

One solution to address stormwater issues is on-site detention. On-site detention is the provision of depressed areas or specific storage in paved or landscaped areas, with relatively small stormwater outlets, that detain a volume of water for a short duration during more intense storms. This prevents or mitigates any increase in peak stormwater flow rates from development and delays the peak volume of runoff. It is important to note that on-site detention systems are required to release water after the peak storm event to provide capacity for future events. Therefore, on-site detention systems do not include rainwater tanks, water retention basins or dams. These are dealt with later in this section of the DCP.

In addition, to help address stormwater issues, drainage structures off-site may need to be upgraded as a result of new development. Generally, the developer is responsible for the full or partial cost of upgrading structures where it can be demonstrated that the proposed development overloads the existing drainage system.

The aim of these controls is to ensure that developments minimise their impact on the water cycle by minimising impervious surfaces, providing on-site storage for stormwater to reduce peak events and ensuring that stormwater systems are upgraded to manage any additional stormwater flows.

Relevant Stormwater Drainage Policy

Council has adopted the Stormwater Drainage Specification for Building Developments. This policy provides guidance to ensure that stormwater drainage for building developments is designed to provide a robust, safe and low maintenance system to manage stormwater impacts on the drainage network and surrounding properties in a holistic manner that is incorporated aesthetically with the overall development.

This policy sets out Council's minimum requirements for the provision of stormwater drainage principally to building development sites, and should be used in conjunction with the Penrith DCP and other policies referred to in the Stormwater Drainage Specification for Building Developments.

B. Objectives

- a) To prevent damage by stormwater to the built and natural environment;

- b) To ensure that new development does not generate stormwater discharges that exceed the capacity of the existing drainage network;
- c) To ensure that an adequate and environmentally acceptable method of removing surface water and stormwater is implemented;
- d) To minimise nuisance flows of stormwater from one property to adjoining properties;
- e) To maximise reasonable on-site detention, to provide opportunities for rainwater re-use;
- f) To minimise hardstand and impervious areas on developed land to minimise run off;
- g) To provide a stormwater system which can be maintained economically;
- h) To provide a stormwater system which utilises open space in a manner compatible with other uses;
- i) To control flooding and enable access to allotments, stabilise the land form and control erosion; and
- j) To minimise urban runoff pollutants to watercourses.

C. Controls

1) Natural Environment

- a) Runoff must not be discharged into bushland areas, including threatened ecological communities.
- b) Pipe outlets shall be treated with measures to dissipate stormwater velocity, except where waters enter a formed channel or similar structure that is unlikely to be damaged by water flowing in at high velocity.
- c) Permeable ground surfaces are to be maintained as far as possible, and where suitable conditions exist, stormwater is to be infiltrated on-site.

2) Drainage

- a) Council's Stormwater Drainage Specification for Building Developments provides details on drainage requirements including on-site detention, new drainage systems and the like.
- b) The development of any lot should take into account the existing drainage patterns of the area, including any localised ponding, and whether the proposed development is likely to affect:
 - i) Access to the site;
 - ii) Drainage on adjoining properties;
 - iii) Localised nuisance flooding on adjoining properties; and
 - iv) Natural overland flow or drainage paths.
- c) In areas where there are no defined drainage patterns, Council may require the applicant to liaise with the adjoining owners regarding the construction of a drain or channel to an existing watercourse. This may include the provision of drainage easements.
- d) Depending on the scale of the proposed development, the applicant may be required to address the following matters in their application:
 - i) The drainage capacity available for the site (e.g. if the site is connected to a centralised stormwater system, the existing drainage network capacity);

- ii) Where capacity may be limited, appropriate drainage measures, including possible on-site detention (determined by liaising with Council's Development Engineering Unit and receiving detailed advice from a qualified engineering consultant);
 - iii) If the site is affected by drainage constraints, the current stormwater discharge and likely future discharge. In this regard, a report prepared by a qualified engineer will be required and should demonstrate that the development will not overload trunk drains during peak storm events or cause localised flooding;
 - iv) If the proposed development will result in additional pollutant loading (and the appropriate licences have been obtained from the relevant government authorities), details demonstrating that the drainage systems have adequate capacity for those pollutants and runoff will comply with the water quality requirements referred to in this Plan; and
 - v) Any required easements across neighbouring properties. Where easements are required, Council requires the submission of the adjoining owner's consent with the development application.
- e) If the site does not have access to Council's stormwater drainage system, all drainage should be designed to ensure that the intensity, quantity and quality of surface runoff is not detrimental to downstream properties and watercourses. A legal point of discharge will be required.
- f) If the site has access to Council's stormwater drainage system, all roof and surface water that is not recycled for use on the site must be discharged into Council's stormwater drainage system. No surface drainage will be permitted to discharge across Council's footways or reserves or enter adjoining land.
- g) The applicant should demonstrate how existing soil type and associated constraints (e.g. salinity and poor percolation) have been considered in the drainage design).

On-Site Stormwater Detention (OSD)

- a) Council's *Stormwater Drainage Specification for Building Developments* provides details on drainage requirements for on-site detention.
- b) Adequate stormwater systems shall be designed and constructed to ensure that, for all rainwater events up to and including the 1:100 Average Recurrence Interval (ARI) event, new developments and redevelopments do not increase stormwater peak flows in any downstream areas.
- c) On-site stormwater detention systems must release water after any rainfall event to maximise future capacity and, therefore, cannot include rainwater tanks, water retention basins or dams.
- d) Detention storage is to be located at a level that is above the 1:5 ARI flood level.
- e) On-site detention systems are to be designed using a catchment wide approach. Advice should be sought from Council's Development Engineering Unit in this regard.
- f) On-site stormwater detention mechanisms should have a maintenance program in place.
- g) Onsite stormwater detention mechanisms should be placed on the title of the relevant allotment/property to ensure their retention and maintenance.

New Drainage Design

- a) Any new piped drainage system shall be designed to control minor stormwater flows under normal operating conditions for an ARI of 5 years.
- b) Any new drainage system shall be designed to control major stormwater flows under normal operating conditions for an ARI of 100 years.
- c) Council's *Stormwater Drainage Specification for Building Developments* provides details on drainage requirements for on-site detention.

D. Lifting the Bar

The following represent some ways in which applicants can demonstrate additional commitment to the stormwater management principles expressed in this Plan. Demonstration of this commitment may lead to Council considering variation of development controls. Applications that vary the development controls listed in this section will need to demonstrate that the proposed development complies with the objectives relevant to the development controls it seeks to vary.

- a) Stormwater detention on site should have capacity to improve the quality of water leaving the site from pre-development state. This may involve treatment of water flowing into the site from upstream properties.

E. Other Information

People seeking further information on stormwater management and drainage or preparing development applications may wish to refer to the following:

- Penrith City Council's *Stormwater Drainage Specification for Building Developments*
- *Australian and New Zealand guidelines for fresh and marine water quality* (2000) Australian and New Zealand Environment Conservation Council
- National Water Quality Management Strategy No 10: *Australian Guidelines for Urban Stormwater Management* (2000)
- *Penrith City Council's Water Sensitive Urban Design Policy*, (December 2013)
- *Penrith City Council's Water Sensitive Urban Design Technical Guidelines*, (December 2013).

3.7. Water Retention Basins/Dams

A. Background

Relevant Policies for Water Harvesting

The NSW Farm Dams Policy (harvestable right dams' policy) allows rural landholders to harvest a basic volume of water (10% of runoff), store and use that water for any purpose without the need to obtain a licence under the *Water Management Act 2000*. The policy has a number of exceptions, exemptions and location variations and advice from the Office of Water should be sought. Any take of water over and above 10% runoff would require a water access licence and an approval.

Information on water sharing and how to calculate harvestable rights can be found on the Office of Water website <http://www.water.nsw.gov.au/>.

Relevant Policies for Dam Construction and Safety

Dams that are classified as prescribed under the *Dams Safety Act 1978* need to be registered with the Dam Safety Committee. Prescribed dams are those dams that have a

significant impact on community interests in the event of dam failure. All dams higher than 15m are prescribed. For smaller dams, the Dam Safety Committee determines whether prescription is necessary based on the consequence of dam failure occurring in the:

- event of a natural flood (Flood Consequence Category); and
- absence of a natural flood (Sunny Day Consequence Category).

Although registration is required for very few dams, proposed dams should be checked with the Dam Safety Committee.

Dam safety can be a major issue depending on the stability of the geology/soils, the size of the dam and the size and characteristics of the dam's catchment. Specific advice on the construction of dams can be obtained from the Office of Water.

Factors to be considered include:

- a) The location of the dam in relation to local water flows;
- b) Dam construction – wall design, heights, method of construction, etc;
- c) Volume of water and extent of the land inundated when the dam is at capacity;
- d) The relative height and dimensions of the by-wash to control the dam's capacity or the provisions to ensure that inundation of land does not exceed the specified extent; and
- e) Provision for passing flows.

Information on the type, size, location and consequence category (i.e. failure consequences) of new dams is critical for the Dam Safety Committee's consideration to determine the need, or otherwise, to prescribe the dam. The Dam Safety Committee's website provides a form to assist with enquiries. Once approved, the dam design or location should not be altered without the agreement of the Dam Safety Committee.

B. Objectives

- a) To provide controls for water harvesting to limit the impacts on the natural water cycle and ensure water flows to natural waterways and river systems;
- b) To allow water harvesting to support essential rural land uses, especially agricultural uses;
- c) To ensure that water retention basins and dams are designed and constructed in accordance with the relevant State policies and guidelines for safety.

C. Controls

- 1) Council's consent is required to construct or form a dam, pond, lake or water retention basin where it will collect more than 10% of surface run-off (as determined by a hydraulic engineer and/or by Council).
- 2) The design and location of any water retention basin/dam should be carefully considered within the catchment area of the site to protect natural flows to natural waterways and river systems.
- 3) Dams need to be appropriately constructed to ensure they will not have an adverse impact on surrounding properties either by ponding water back up onto upstream properties or by concentrating water to any downstream properties.
- 4) Where possible, water retention basins/dams should seek to minimise disturbance to existing vegetation. Where possible, they should also be landscaped to minimise visual impact and provide shade to minimise evaporation losses and reduce algae growth.

- 5) If a dam is to be breached intentionally, an analysis of the sediment in the dam must be carried out prior to breaching to identify potential pollutants. If necessary, a remediation action plan or plan for disposal of contaminated sediment must be developed. Dam breaching must be carried out in a manner which does not impact on downstream properties.

3.8. Rainwater / Storage Tanks

A. Background

This section aims to ensure that the location, types, materials and colours for any rainwater or other storage tanks are considered as part of the entire site design and are sympathetic to the rural and landscape character of the area. Use of rainwater tanks is consistent with the NSW State Government's objective of reducing the amount of potable (drinking) water consumed for non-potable uses, like flushing toilets and in gardens. Therefore, provision of a rainwater tank can form part of a BASIX commitment listed within the BASIX certificate to meet reduced water consumption targets.

If water in rainwater tanks is intended for human consumption, the tank must be appropriately maintained. Refer to the Australian Government's *Guidance on use of rainwater tanks* (2010) produced by the Environmental Health Committee for further information.

B. Objectives

To ensure that rainwater or other water storage tanks and associated structures are:

- a) Appropriately located and designed (with appropriate types, materials and colours) to minimise the visual impact on any rural, scenic or landscape character of any area;
- b) Integrated into the design of any cluster of buildings or as part of the primary dwelling during the site planning and design process;
- c) Designed and/or constructed in accordance with the necessary guidelines to ensure safety and structural stability;
- d) Designed to minimise the entry of contaminants into any water that may be harvested for drinking purposes.

C. Controls

1) General Requirements

In many cases, rainwater tanks may be exempt development under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* and development consent may not be required. Where development consent is necessary, the following additional requirements apply:

- a) Rainwater tanks must not exceed 3m in height above ground level (including stand).
- b) Rainwater tanks must not collect water from a source other than gutters or down pipes on a building or a water supply service pipe.
- c) Rainwater tanks must be structurally sound.
- d) The rainwater tank, and any stand for the tank, must:
 - i) Be assembled and installed in accordance with the manufacturer's specifications; and

- ii) Not rest on a footing of any building or other structure on the property including a retaining wall.
- e) Rainwater tanks must utilise prefabricated materials or be constructed from prefabricated elements designed and manufactured for the purpose of construction of a rainwater tank.
- f) A rainwater tank must be enclosed and inlets screened or filtered to prevent the entry of foreign matter or creatures.
- g) A rainwater tank must utilise a non-reflective finish. Materials and colours should complement those used on the dwelling house and any other buildings on the land.
- h) Plastic rainwater tanks are not to be used in bushfire prone areas.
- i) Rainwater tanks on land zoned E3 Environmental Management or E4 Environmental Living must have a maximum total capacity for the entire property of:
 - i) 90,000 litres (where the property has an area of 10 hectares or greater); or
 - ii) 45,000 litres (where the property has an area of less than 10 hectares).

D. Other Relevant Information

People seeking further information on rainwater/storage tanks may wish to refer to the following:

Penrith City Council's Stormwater Drainage Specification for Building Developments

Table of Contents

C4 LAND MANAGEMENT	2
4.1. SITE STABILITY AND EARTHWORKS	3
4.2. LANDFILL	6
4.3. EROSION AND SEDIMENTATION	7
4.4. CONTAMINATED LANDS	10
4.4.1. PREVENTING CONTAMINATION	11
4.4.2. TRIGGERS FOR CONTAMINATION INVESTIGATION	12
4.4.3. STAGES OF CONTAMINATION INVESTIGATION	13
4.4.4. SITE AUDIT	14
4.4.5. REMEDIATION PROCEDURES	15
4.4.6. CLEAN UP NOTICES	18
4.4.7. COUNCIL RECORDS AND COMMUNITY INFORMATION	18
4.5. SALINITY	19

C4 Land Management

A. Background

Need for Land Management

Land degradation and the associated loss of agricultural potential has been a serious problem since the advent of European settlement. Land degradation is not restricted to the rural environment. Urban environments also suffer from introduced weeds, erosion and contamination of soil and water, including pollution from run-off. As the population expands, pressure on land from urban development intensifies and the agricultural industry increasingly must use marginal lands, thereby increasing the threat of significant land degradation.

Key Issues

Some of the key issues associated with land management in the Penrith Local Government Area (LGA) include:

- a) Impacts of changing the natural landform through excavation and filling;
- b) Erosion and sedimentation;
- c) Salinity;
- d) Contamination of land;
- e) Landfill and leaching of contaminants;
- f) Land rehabilitation;
- g) Sustainable land use practices, including sustainable farm management;
- h) Native vegetation cover, especially near watercourses;
- i) Appropriate intensities of agricultural land uses; and
- j) Balancing land for rural and urban development.

Benefits of Sustainable Land Use

Sustainable land use is about taking a holistic approach to managing our natural resources based on ecological, social and economic considerations. It requires, among other things, integrating land, water, vegetation and biodiversity management so land uses can occur without damaging ecological processes or reducing biodiversity over the long term. Sustainable land use practices can improve profitability, maintain the productive capacity of land and improve the capacity of land to cope with severe climatic conditions, while maintaining or enhancing the natural resource base.

B. General Objectives

- a) To promote sustainable land use practices for all land use types;
- b) To minimise land degradation in the Penrith LGA and promote restoration of degraded lands;
- c) To control erosion, sedimentation and dust to maintain soil and water quality and protect amenity;

- d) To minimise land contamination through inappropriate landfill or pollution of land and maximise remediation of contaminated land; and
- e) To reduce the likelihood of salinity and its impact on land and development.

C. Other Relevant Sections of this DCP

This DCP is a multi-layered document that recognises the relationship of a number of issues to achieving sustainable outcomes. Therefore, when addressing land management issues, it is important to read all relevant parts of this DCP to ensure they are aware of all land management issues.

4.1. Site Stability and Earthworks

A. Background

This section seeks to ensure that site planning for any proposed development takes into account the topography, geology and soils of the site and surrounding land. This is necessary to minimise disturbance to existing landforms and costly earthworks, to protect existing and proposed development from becoming unstable, and to minimise erosion.

B. Objectives

- a) To take into account the stability of land having regard to its topography, geology and soils as part of site planning principles;
- b) To minimise the extent of earthworks when creating a building site; and
- c) To minimise disturbance of vegetation that stabilises land, particularly on sloping sites.

C. Controls

1) Development Consent

- a) In accordance with the earthworks provisions of the LEP, development consent is required for any earthworks unless:
 - i) The work is exempt development under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*; or
 - ii) The work is ancillary to other development for which development consent has been given.
- b) Consent is required when material is imported or removed from a property or is relocated on the same property.

2) Matters to be Considered

- a) The LEP contains clauses that list the matters that must be considered before granting development consent for earthworks.
- b) These matters must be addressed in the supporting documentation submitted with the development application.

3) Development Application Requirements

- a) Any development application that proposes earthworks and therefore changes to the levels of a site, is required to clearly address the following in the Statement of Environmental Effects or a Geotechnical Report (if required, see 3 b)):

- i) The location and extent of the earthworks on the site;
 - ii) Justification for the need to change the land levels in terms of the overall development;
 - iii) Any other impacts from the changed land levels as a consequence of the earthworks.
- b) Where a building is proposed on land where the existing slope gradient is higher than 15% (or the land is likely to be subject to any land stability issues), the development application may be required to include a Geotechnical Report (prepared by a suitably qualified consultant).
- c) Council will not permit a building to be placed on land where the existing slope gradient before development is greater than 20%.
- d) Applicants should refer to the following sections of this DCP:
- i) Vegetation Management, to ensure vegetation is protected on the site, particularly where the vegetation is important to site stability;
 - ii) Site Planning and Design Principles, to ensure any proposed development responds to the natural topography of the site; and
 - iii) The other sections of this section relating to landfill, erosion and sedimentation, contaminated lands and salinity to determine if any additional information is required to address these issues.

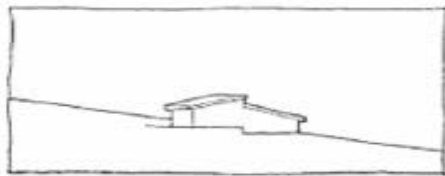
4) Limitations on Earthworks

- a) Earthworks to create a building platform shall not be undertaken where excavation and/or filling would exceed 1m from the existing natural ground level of the site.
- b) On sloping sites, site disturbance is to be minimised by using split level or pier foundation building designs (see Figure C4.1).
- c) All retaining walls proposed for the site are to be identified in the development application for the proposed development. Retaining walls are to be kept to a minimum to reduce earthworks. Use of materials that complement the natural environment is encouraged.
- d) During any earthworks, any topsoil should be preserved on site for re-use and should be stockpiled and covered to avoid dust or loss of topsoil. Refer to the Landscape Design Section of this Plan for controls on stockpiling topsoil on site.

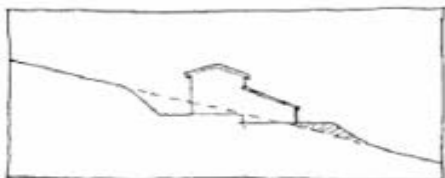
Figure C4.1: Building on Sloping Land



Flat land provides a great range of opportunities for variations in siting and the design of buildings. On flat land interesting development can be created through good building design and landscaping.



Gentle slopes require split level designs. The costs associated with building and access are higher. Sloping sites can provide interesting building design and landscape opportunities.



Steep slopes can become very difficult and expensive to build on. Access can also be difficult. Choosing the best site requires considerable thought. Advice from council will be of value.



On very steep slopes you have very limited building opportunities. Specialized building engineering and drainage advice will be required. The cost of building will be much higher.

4.2. Landfill

A. Background

In determining applications for landfill (either on its own or as part of another development), Council will consider the possibility of land contamination and the implications it has for any proposed future use of the land (Refer to the Contaminated Lands Section of this Plan). Council will also have regard to the method, nature and effect of landfill to ensure all material is managed appropriately and in accordance with:

- relevant legislation; and
- The Environment Protection Authority (EPA) requirements and guidelines.

The use of waste building materials as landfill is not permitted apart from the use of crushed bricks or similar for vehicular access areas.

B. Objectives

- a) To require an applicant to justify the use of landfill on any site and ensure that it enhances the use of a property;
- b) To ensure that any landfill utilises appropriate materials that do not result in pollution or contamination of land or water on a site;
- c) To ensure that landfill does not adversely impact on local drainage characteristics; and
- d) To ensure that landfill will not increase flood hazard or risk to other properties.

C. Controls

1) Development Application Requirements

- a) Applicants seeking Council's consent for landfill must provide a Landfill Validation Report (written by an appropriately qualified person).
- b) Council may require a further detailed investigation to occur if contamination is, or may be, present in the fill material to prove that the fill material is suitable for the proposed use. (Refer to the Contaminated Land Section of this Plan for further requirements).

2) Landfill Requirements

- a) Imported fill shall not include putrescible waste (i.e. waste that breaks down) or building material. Clean fill including soil, sand or virgin excavated natural material (VENM) is generally acceptable.
- b) The filled area shall be drained to Council's satisfaction and not impact upon the drainage characteristics of other properties in the catchment area.
- c) The material shall be suitably compacted and treated to prevent runoff and siltation of watercourses.
- d) Compaction of filled areas is to be 98% standard compaction and in accordance with relevant Australian Standards, including AS1289 Method of testing soils for engineering purposes and AS3798 Guidelines on earthworks for commercial and residential development, and Council's engineering standards. Compaction certificates are to be submitted to the private certifier or Council.
- e) The finished area shall be revegetated and stabilised to blend the filled area and natural surfaces.

- f) Earth moved from areas containing noxious weed material must be disposed of at an approved waste disposal facility and transported in compliance with the *Noxious Weed Act 1993*.
- g) Fill within 10m of adjoining bushland must not be carried out. Any fill in the vicinity of bushland must only use material from the local area (in order to minimise spread of weeds) and must be carried out in a manner that does not cause adverse impacts to surrounding properties, local drainage systems and existing vegetation. Material which is likely to have an adverse environmental effect due to it being combustible, toxic, hazardous or dangerous must not be used.
- h) Fill must not be carried out within the drip line of existing trees.

4.3. Erosion and Sedimentation

A. Background

One of the major impacts of erosion is the removal of the topsoil, which results in the loss of essential nutrients for plant development and animal nutrition, and the loss of soil structure and permeability to water. This reduces the viability of plants and soil habitats which support ecosystems, agriculture and the natural landscape.

Another major impact is the relocation of the eroded soil to other locations, called sedimentation. Sedimentation can damage natural vegetation, block stormwater drains and flowpaths, and cause significant impacts on natural watercourses and other waterbodies such as wetlands. The impact on natural waterbodies includes the smothering of aquatic plants and animals, with additional nutrient loads promoting rapid growth of invasive organisms and species such as blue-green algae and water hyacinth. This reduces water quality and the recreational value of these water systems.

This section applies to all land where any proposed development or land use:

- a) Involves disturbing the existing ground surface or placing fill, and/or results in changes to the shape of the land; and
- b) Involves changes in the velocity and/or volume of water runoff entering directly or indirectly into a watercourse or wetland, or flowing over the land.

While this will include the excavation and filling of land, it may also include significant landscaping works and topsoil stockpiling.

This section also seeks to supplement the controls set out in clauses relating to earthworks of the LEP.

B. Objectives

- a) To minimise site disturbance during the construction and operation of developments and land uses;
- b) To reduce the amount of erosion and/or sedimentation of land within the Penrith LGA;
- c) To maximise the amount of vegetation retained on development sites and ensure its protection during construction and operation of the development;
- d) To protect the natural environment, particularly natural water bodies, from erosion and sedimentation; and

- e) To encourage prompt rehabilitation of development sites by the implementation of revegetation strategies.

C. Controls

1) Erosion and Sediment Controls Plans (ESCP)

- a) All applications for subdivision and development which involve site disturbance must be accompanied by an Erosion and Sediment Control Plan (ESCP), except in the following circumstances:
 - i) The construction of minor structures including carports, pergolas, verandahs, garden sheds and the like; and
 - ii) Dwelling additions and alterations which are deemed by Council as not likely to cause erosion and sediment loss from the site.
- b) An ESCP is necessary to ensure that a strategy to manage erosion and sedimentation is considered at an early stage in the planning process. The ESCP must consider the potential for soil erosion and sedimentation during all stages of the development – demolition, construction and operation of the development. The ESCP must demonstrate that appropriate controls have been planned which will, when implemented, minimise erosion of soil from the site and, accordingly, sedimentation of drainage systems and waterways.
- c) The ESCP must be submitted in accordance with best practice guidelines for erosion and sediment control, including Landcom's, *Managing Urban Stormwater – Soils and Construction*, 2004.
- d) Where the applicant is uncertain of the most suitable method of control for a particular situation, the applicant is requested to consult with Council officers to discuss the proposal prior to the submission of an ESCP.

2) Requirements for Erosion and Sediment Control

- a) Soil erosion and sediment control measures are to be provided on-site before the commencement of any earthworks or development activity, in accordance with the approved ESCP. These must be maintained throughout the course of construction until disturbed areas have been revegetated and the soil stabilised. The applicant will be required to provide certification to this effect, which is to be lodged with Council prior to construction.
- b) All erosion and sediment control measures are to be installed to the satisfaction of Council or the proposed Certifier, in accordance with best management practices recommended by recognised authorities (including *Managing Urban Stormwater – Soils and Construction*).
- c) The work supervisor is responsible for ensuring that all erosion and sediment control measures are implemented in accordance with conditions of approval and are maintained until a final inspection has indicated that the site is sufficiently rehabilitated and stabilised.
- d) The decision to install a particular mechanism to prevent erosion and/or sedimentation depends on the location and type of activity proposed and may vary from site to site.
- e) Council may require erosion and sediment control works to be carried out in addition to, or in variation from, the approved ESCP, should circumstances necessitate it. Any variations are to be approved by Council and implemented in accordance with this

section and current best practice guidelines (including *Managing Urban Stormwater – Soils and Construction*), where relevant.

- f) All erosion and sediment control measures should be maintained for the duration of the specified maintenance period. An established, stabilised ground cover must be in place and approval should be obtained from the Certifying Authority before removing erosion and sediment control measures.

3) Additional Measures for Large Sites

Where an application is for a site over 2,500m² and there will be substantial earthworks, the applicant is required to address a number of additional measures in the ESCP, including:

- a) Identify all areas likely to cause pollution of waterways from the transport of stormwater run-off containing sediment and silt and implement appropriate devices to stop the risk of pollution;
- b) Divert clean water around the construction site to prevent contamination;
- c) Retain as much natural vegetation as possible and limit site disturbance;
- d) Control stormwater that enters the construction site from upstream;
- e) Divert stormwater from undisturbed upper slopes onto stable areas;
- f) Retain and stockpile all excavated topsoil on site for future landscaping and to minimise risk of erosion;
- g) Prevent sediment/silt from entering adjoining public or private property (especially drains) by installing sediment control devices at the low side of sites and wash down areas;
- h) Provide a single, stabilised entry/exit point to the site;
- i) Prevent sediment, including building materials, from reaching the road or Council's stormwater system. Sediment is to be removed by sweeping, shovelling or sponging. Under no circumstances shall sediment be hosed;
- j) Where a work zone permit over public property is applicable, ensure that appropriate debris control devices are implemented to prevent spillage of building materials into stormwater drains;
- k) Compact all drainage lines when backfilling;
- l) Connect downpipes to the stormwater system as early as possible;
- m) Revegetate all disturbed areas, after on-site works are completed, in order to stabilise the surface; and
- n) Maintain all sediment control devices during earthworks and construction to standards acceptable to Council.

4) Implementation, Monitoring and Maintenance

- a) Requirements for erosion and sediment control will be incorporated in approval conditions for development consents. The supervisor of the development is responsible for ensuring that all conditions are implemented and maintained throughout the development process. All control measures are to be regularly inspected and maintained by the work supervisor in accordance with current best practice (including *Managing Urban Stormwater – Soils and Construction*).

- b) In the case of new dwellings, the frame inspection will not be carried out by Council unless erosion and sediment control measures are satisfactorily installed and gutters and downpipes are connected to direct roof water to the stormwater system approved by Council.
- c) The consent holder, owner, contractor builder and all persons on site are responsible for controlling soil erosion and preventing the discharge of sediment from the building site.
- d) Erosion and sediment control measures will be inspected in the course of Council site inspections following issue of a construction certificate.
- e) The Landscape Design Section of this Plan also contains requirements relating to erosion and sedimentation control during landscape works.

5) Penalties for Non-Compliance

- a) An environmental bond/security may be required to be lodged with Council and may be used to make good any damage that has the potential to cause pollution.
- b) Where there is non-compliance with any controls in this DCP relating to erosion and/or sedimentation, Council may charge a reinspection fee, claim the environmental bond, or issue a Clean-up Notice, Prevention Notice or Penalty Infringement Notice if a pollution incident has occurred or has the potential to occur.
- c) Any person(s) who fails to satisfactorily implement erosion and sediment controls may be subject to action under state or federal legislation.
- d) In more serious cases, legal action may be considered under legislation dealing with environmental protection.

D. Other Information

This section must be read in conjunction with:

- a) *Guidelines for Engineering Works for Subdivisions and Developments* (Penrith City Council, November 2013)
- b) *Managing Urban Stormwater – Soils and Construction* ('The Blue Book') (Landcom, March 2004)

4.4. Contaminated Lands

A. Background

Impacts of Contamination

There are a number of activities that use, store and dispose of contaminants which can potentially impact on soils, groundwater, surface water and air. The Technical Information Appendix of this DCP lists key uses/activities that may result in contamination and the likely chemicals used in such activities. Such contamination can impact on the health and well-being of the community and on the integrity of buildings, structures and service facilities.

Adverse impacts from contamination can occur as a result of accidents or of ongoing poorly managed industrial, agricultural or commercial activities. Accordingly, steps need to be taken to minimise the creation of contaminated sites and to prevent the further contamination of already contaminated sites. Contaminated land is to be remediated before development can occur on that land. Remediation involves the treatment and/or mitigation of the contaminants.

Addressing Contamination

Under the *Environmental Planning and Assessment Act 1979*, Council has a duty of care, when considering development proposals, to fully consider the possibility of land contamination and the implications it has for any proposed future use of land. In particular, this section refers to, and formally adopts, the *Managing Land Contamination - Planning Guidelines* (Department of Urban Affairs and Planning & NSW Environmental Protection Authority, 1998) and other relevant legislative requirements.

In recognition of its duty of care, Council will adopt a precautionary approach to its consideration of applications involving contaminated or potentially contaminated land. The object of this approach is to enable any land contamination issues to be identified and dealt with at an early stage in the planning process.

In order for this to occur, Council has developed a set of procedures to be followed for development proposals. These procedures allow for a merit-based consideration of land contamination issues. All investigations, reporting, sampling, development of plans, etc in relation to contaminated land must be completed by a suitably qualified person in accordance with the relevant guidelines.

In considering the implications of contamination, Council will have regard for the sensitivity of a proposed land use, in addition to any technical standards or requirements published by:

- The NSW Environment Protection Authority (EPA);
- National Health and Medical Research Council (NHMRC);
- National Environment Protection Council (NEPC); and
- Any other relevant authority.

B. Objectives

- a) To prevent or minimise the risk of contamination of land and any associated impacts or harm from any such contamination;
- b) To enable Council to more adequately identify, record and manage known and potentially contaminated land;
- c) To provide direction for Council in the gathering and assessment of information in relation to previous land use activities that may have resulted in contamination;
- d) To assist Council in the discharge of its functions and responsibilities in relation to existing and potential contaminated land with reasonable care and due diligence to minimise potential risk to both public health and the environment;
- e) To inform the community, particularly those interested or involved in the planning and development process, of Council's procedures relating to existing or potential contaminated land; and
- f) To ensure that all stakeholders are aware of their responsibilities for the ongoing management of contaminated land.

4.4.1. Preventing Contamination

A. Background

A proactive approach which ensures that the potential for contamination is reduced or prevented must be linked to the nature of an activity on a particular site. Contamination of

land may often be associated with new developments that involve potentially contaminating activities. Such activities may result in accidental releases of chemicals to land which, in turn, will render the land contaminated.

B. Controls

- 1) Development applications for new or for expanding existing developments may be required to include information on the potential for the activity to contaminate.
- 2) Environmental impact assessments are required to address the potential and likelihood of contamination.
- 3) In assessing development applications for activities which could be potential sources of contamination, Council will ensure it is satisfied that the proposed technical and management controls will be adequate to prevent contamination. Conditions of consent may be imposed by Council to ensure adequate controls are applied to an activity or development.
- 4) Periodic environmental audits of activities may be required as a condition of consent by Council.

4.4.2. Triggers for Contamination Investigation

A. Background

A contamination investigation is triggered when a land use change is proposed on lands which have previously been used for certain purposes that have the potential to result in contamination. A list of activities and land uses that could potentially result in contamination is included in the Technical Information Appendix of this DCP.

In determining applications for development proposals, Council will fully consider the possibility of land contamination and the implications it has for any proposed future use of the land. A precautionary approach will be taken to ensure that any land contamination issues are identified and dealt with early in the planning process. Accordingly, Council will:

- a) Proceed with the application according to its usual practice if the site has been proven suitable for the proposed uses without the need for further testing or treatment; or
- b) Proceed with the application according to its usual practice if the site has been proven to be capable of being remediated to a standard that is suitable for the proposed use either in its contaminated state or after remediation; or
- c) Request the applicant to provide additional information; or
- d) Refuse the application with stated reasons.

B. Controls

- 1) Any application must provide appropriate information relating to past, present and proposed land uses.
- 2) Council will evaluate the site's potential for contamination in accordance with procedures established by this section. If there is any indication of a past land use or activity that may have caused contamination, Council will require additional information to prove that the site is suitable for the proposed use.
- 3) Council may require any site investigation report or similar information submitted in support of an application to be referred to a site auditor for an independent review. The

auditor shall be nominated by Council. All costs associated with the review shall be borne by the applicant. All communication with the auditor shall be either with the knowledge of Council or in the presence of Council officers.

4.4.3. Stages of Contamination Investigation

A. Background

If contamination is, or may be, present the applicant must investigate the site and provide Council with the information it needs to carry out its planning functions.

There are four main stages in the investigation of contaminated or potentially contaminated land. At each stage, it is the applicant's responsibility to provide the necessary documentation to Council and to fund the work required to prepare such documents. Not every site will require all four stages of investigation. The appropriate level of investigation will depend on the circumstances and may involve one or more stages. In providing the necessary information to Council, the applicant must engage an appropriately qualified person, experienced in contaminated site assessment and management.

B. Controls

The four stages are as follows:

Stage 1 - Preliminary Investigation

- a) To identify any past or present potentially contaminating activities;
- b) To provide a preliminary assessment of any site contamination; and
- c) To provide the basis for a more detailed investigation, if required.

This stage involves the investigation and reporting of the site history and is typically based on readily available information such as historical records of land use, aerial photographs, consultations with previous occupants and relevant authorities, and a site inspection.

Where contaminating activities are suspected to have had an impact on the land, some initial sampling and analysis will need to be undertaken to confirm and support any conclusions reached from the site history appraisal.

Stage 2 – Detailed Investigation

A detailed investigation is only necessary when a preliminary investigation indicates that the land is contaminated or is, or was, formally used for a potentially contaminating activity.

The objectives of a detailed investigation are to:

- a) define the nature, extent and degree of contamination;
- b) assess potential risk posed by contaminants to health and the environment; and
- c) obtain sufficient information for the development of a Remedial Action Plan (RAP), if required.

Should the initial investigations fail to clearly demonstrate that the land is suitable for its proposed use, a more detailed assessment and evaluation must be undertaken. This detailed evaluation stage involves formal sampling. Typically, a site specific work plan is developed during this stage, based on previous investigations.

Stage 3 - Remedial Action Plan

The objectives of a RAP are to:

- a) Set remediation objectives; and
- b) Document the process to remediate the site.

The RAP or plan of remediation should demonstrate how the applicant or their consultant proposes to reduce risks to acceptable levels and achieve the desired clean-up levels. The ultimate goal of site clean-up is to ensure that the site is remediated to a level where the proposed development/land use can occur on that land and there will be no risk of harm to human health or any other aspects of the environment in accordance with that use.

Stage 4 - Validation and Monitoring

The objectives of validation and monitoring are to demonstrate whether the objectives stated in the RAP and any conditions of development consent have been achieved.

The purpose of validation is to confirm whether the pre-determined clean-up objectives have been attained and whether any further remediation or restrictions on land use are required. Ideally, validation should be conducted by the same consultant that conducted the rest of the site investigation and remediation process.

Depending on the extent of contamination and the method of remediation (e.g. containment), there may be a need for continual site monitoring and/or restrictions on the development potential of the land. A proper monitoring program should include a monitoring strategy, the parameters to be monitored, the monitoring locations, the frequency of monitoring and the appropriate reporting requirements. Any restrictions on the land's development potential would normally be imposed by Council at the stage the application is determined.

As a general rule, Council prefers remediation strategies that do not rely on site monitoring or land restrictions. Such strategies may include the removal of contaminants and their off-site disposal or their in-situ treatment (e.g. bio-remediation). (See the Technical Information Appendix of this DCP for further details).

4.4.4. Site Audit

A. Background

In determining applications for development proposals, Council may require an independent review (Site Audit) of any or all stages of the site investigation, remediation or validation process, conducted in accordance with the *Contaminated Land Management Act 1997* (CLM Act).

A site audit will lead to the provision of a site audit statement, stating for what use the land is suitable, including any conditions that should be adhered to for that land use. Only site auditors accredited by the EPA under the *Contaminated Land Management Act 1997* can issue site audit statements. A site audit statement must be prepared in accordance with the *Guidelines for the NSW Site Auditor Scheme* and must be in a prescribed form.

B. Controls

- 1) Council may require a site audit if it:
 - a) Believes on reasonable grounds that the information provided by the applicant is incomplete;

- b) Wishes to verify whether the information provided by the applicant has adhered to appropriate standards, procedures and guidelines; or
 - c) Does not have the internal resources to conduct its own technical review.
- 2) Council will inform the applicant if a site audit is required, after Council has conducted a review of the contamination reports and associated documents submitted to Council.
 - 3) The applicant is responsible for engaging an EPA accredited site auditor for contaminated land to perform a site audit.
 - 4) If Council requires a site audit to make its planning decision, the cost shall be fully borne by the applicant and not Council.
 - 5) The *Guidelines for the NSW Site Auditor Scheme* outline what may be included in a site audit, however, the guidelines state that, in some situations, Councils may also need to contribute to defining the scope of the site audit.
 - 6) When Council requests a site audit, Council will specify any issues that shall be included within the scope of the site audit. Either the applicant or the appointed EPA accredited site auditor shall liaise with Council during the preparation of the site audit to ensure that the scope of the site audit addresses the concerns raised by Council.
 - 7) A copy of all statutory site audit statements must be given to the EPA and Council at the same time as the site auditor gives the statutory site audit statement to the person who commissioned the site audit.
 - 8) A request for a site audit included as a condition in any development consent is a statutory site audit.
 - 9) The “Guidelines for the NSW Site Auditor Scheme” indicate the content and format of Site Audit Statements.
 - 10) Before issuing a site audit statement, the site auditor must prepare and finalise a summary site audit report. The *Guidelines for the NSW Site Auditor Scheme* outline what must be included in a site audit report.

4.4.5. Remediation Procedures

A. Background

It is the policy of Council that all remediation required to be carried out will be done so in such a manner that will not cause any adverse impact or harm to the environment. The preferred remediation method should result from a consideration of the cost benefit analysis of options, including their practicability, reliability and impact.

Remediation of contaminated land will require development consent, even if the proposed land use does not require consent. A RAP must be submitted to Council for approval with the development application for remediation.

All remediation work must be consistent with the *Managing Land Contamination – Planning Guidelines* and be carried out in accordance with *Sydney Regional Environmental Plan No.20 Hawkesbury-Nepean River* (SREP 20), *State Environmental Planning Policy No.55 - Remediation of Land* (SEPP 55), the *Contaminated Land Management Act 1997*, all relevant EPA guidelines and this section.

B. Controls

1) When is Consent Required for Remediation?

- a) Council consent is required for the remediation of all contaminated land within the Penrith LGA. This requirement is prescribed by SREP20 and SEPP 55.

2) Determination Procedures

- a) For land which has been previously remediated, Council may still require further investigation and a statement from the applicant's consultant that the site has been remediated in accordance with applicable guidelines and standards, and other appropriate regulatory requirements to allow the intended use.
- b) If Council considers that contamination makes the land unsuitable for the proposed use and requires remediation, Council may enforce remediation requirements by:
 - i) Requiring the applicant to amend the development application to include a remediation proposal; or
 - ii) Requiring a new and separate development application for the remediation before the development application for the use is considered.
- c) If Council considers that contamination makes the land unsuitable for the proposed use and the land may not be appropriately remediated or the applicant does not wish to remediate:
 - i) The proposal may be modified to a use that is suitable for the land without remediation; or
 - ii) The application may be withdrawn; or
 - iii) The application may be refused.
- d) In issuing any development consent, Council may impose conditions relating to contaminated land. Such conditions will be consistent with the requirements of this section and any relevant legislation or guidelines.
- e) Where Council requires further information prior to the commencement of a development activity, it may issue a deferred or staged consent incorporating relevant conditions.
- f) Applicants are advised to carefully read any consent issued to them and identify all matters requiring attention.
- g) Council will not refuse consent to a development application to carry out remediation work on land unless the work would present, or result in, a more significant risk of harm to human health or some other aspect of the environment (whether or not the harm would occur on the same land) than not proceeding with that work.

3) Advertised Development

A development application for Category 1 remediation work is advertised development in accordance with SEPP 55.

4) Remedial Action Plan (RAP)

- a) A RAP shall be prepared for all remediation proposals and shall be submitted to Council with a development application for assessment. The RAP may form part of an environmental impact statement if the remediation work is designated development.
- b) The RAP shall:

- i) establish remediation goals that ensure the site will be suitable for the proposed land use and will pose no unacceptable risk to human health or to the environment;
 - ii) determine the most appropriate remedial strategy;
 - iii) provide details of the selected remedial strategy;
 - iv) identify all necessary approvals or licences required from all relevant regulatory authorities; and
 - v) provide details of monitoring to be undertaken both during and after the remedial works.
- c) The RAP shall demonstrate how the risk posed by contamination will be reduced to acceptable levels and how the remediation goals could be met. The objectives of the remediation strategy and the clean-up criteria recommended shall be clearly stated in the RAP. Applicable EPA guidelines provide details of what the RAP should cover.

5) Independent Review of the RAP

- a) Council may require the RAP to be reviewed by an EPA accredited site auditor. All costs associated with the review shall be borne by the applicant.
- b) Council may require the applicant to incorporate the comments of the site auditor into their RAP and to provide evidence that all necessary licences and permits have been obtained.

6) Monitoring of Remediation

- a) All remediation work must be carried out in accordance with:
 - i) the *Managing Land Contamination – Planning Guidelines*;
 - ii) any guidelines made under the *Contaminated Land Management Act 1997*;
 - iii) applicable OEHL/EPA guidelines; and
 - iv) the RAP submitted to and approved by Council with the development application.
- b) Council may undertake visits to the site during the remedial works to monitor the progress of such works. These visits may be carried out with personnel from the EPA, other relevant regulatory authorities or the site auditor. All costs (as described in Council's approved Fees and Charges Schedule) associated with such visits shall be borne by the applicant.

7) Validation Report

- a) Council will require the applicant to submit to Council a validation report confirming that the remediation goals established in the RAP have been achieved. (The degree of validation required will depend on the degree of contamination originally present on the site, the type of remediation processes that have been carried out and the proposed land uses).
- b) The validation report must confirm statistically that the remediated site complies with the clean-up criteria, and does not pose an unacceptable risk to human health or the environment.
- c) The validation report shall assess the results of the post-remediation testing against the clean-up criteria nominated in the RAP. Where these have not been achieved, reasons for such failure must be stated and additional site work shall be proposed that will achieve the original objectives. The validation report shall also detail any ongoing

monitoring requirements for the site. If clean-up criteria cannot be achieved, other development options may need to be considered.

- d) Development applications for sites where remediation has been undertaken prior to lodgement must include a validation report.

8) Review of Validation Report

Council may require the validation report to be reviewed by an EPA accredited site auditor. All costs associated with the review shall be borne by the applicant.

4.4.6. Clean Up Notices

A. Background

Clause 21 of SEPP 55 states that the SEPP 55 provisions do not apply to clean-up notices. At present, all appropriate regulatory authorities (including Penrith City Council), as defined in the *Protection of the Environment Operations Act 1997* can issue a clean-up notice.

B. Controls

Any development or activity carried out for the purpose of complying with a clean-up notice:

- a) May be carried out without development consent; and
- b) To the extent that it involves carrying out any remediation work must be carried out in accordance with:
 - i) the *Managing Land Contamination – Planning Guidelines*; and
 - ii) any guidelines in force under the *Contaminated Land Management Act 1997*.

4.4.7. Council Records and Community Information

Council does not hold comprehensive information about land contamination. In the past, little information was kept about contaminated land. Council holds specific information about contamination on only a very small number of sites.

Land contamination is dynamic and no information system can record the nature of all contamination within the local government area at any one time. Council records will change over time as information comes to light. Specifically, the following information will be added to the record for individual parcels of land from time to time:

- a) Information contained in development applications, indicating the use of a site for a potentially contaminating activity listed in the Submission Requirements Appendix of this DCP.
- b) Reports submitted to Council, including preliminary investigation, detailed investigation, remedial action plans, validation and monitoring reports, and site audit statements.
- c) EPA declarations and orders issued under the *Contaminated Land Management Act 1997* (including voluntary management proposals approved by EPA).
- d) Notification of completion of Category 1 and Category 2 remediation work.

Information about land contamination held within the Council's records will be supplied to the public by the following means (subject to payment of any prescribed fees):

- a) By issuing planning certificates (Section 149 certificates) on application.

- b) By providing access to documents in accordance with the Freedom of Information Act 1989 and other legislation.

Total reliance should not be placed on Section 149 certificates. Interested parties should request a detailed search by Council of its records in regard to previous uses of a site and/or have a contamination assessment conducted by a qualified consultant.

C. Other Information

People seeking further information on contaminated lands or preparing development applications may wish to refer to the following:

- a) NSW Department of Urban Affairs and Planning and the NSW Environment Protection Authority (1998) – *Managing Land Contamination - Planning Guidelines SEPP 55 – Remediation of Land*.
- b) NSW EPA (2003) *Contaminated Sites: Guidelines for Assessing Service Station Sites*.
- c) NSW EPA (1995) *Contaminated Sites: Guidelines for the Vertical Mixing of Soil on Former Broad-Acre Agricultural Land*.
- d) NSW EPA (1995) *Contaminated Sites: Sampling Design Guidelines*.
- e) NSW EPA (2003) *Contaminated Sites: Guidelines for Significant Risk of Harm from Contaminated Land and the Duty to Report*.
- f) Department of Environment and Conservation NSW (2005) *Contaminated Sites: Guidelines for Assessing Former Orchards and Market Gardens*.
- g) Department of Environment and Conservation NSW (2007) *Guidelines for the Assessment and Management of Groundwater Contamination*.
- h) ANZECC & Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) (2000) *Australian and New Zealand guidelines for fresh and marine water quality: Volume 1 – The Guidelines*.
- i) NHMRC Natural Resource Management Ministerial Council (NRMMC) (2011) *Australian Drinking Water Guidelines Paper 6 National Water Quality Management Strategy*.

Council considers these guidelines to be a mandatory reference for consultants assessing contamination levels and undertaking remediation works. Consultants preparing contamination reports should also have a practical working knowledge of the various EPA and National Environment Protection Council (EPC) publications on contaminated land including:

- a) NSW EPA (2006) *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme*.
- b) National Environment Protection Council (NEPC) (2013) *National Environmental Protection (Assessment of Site Contamination) Measure 1999*.
- c) NSW OEH (2011) *Guidelines for Consultants Reporting on Contaminated Sites*.

4.5. Salinity

A. Background

Salinity is increasingly recognised as an issue that can potentially cause significant economic, environmental and social costs in both rural and urban areas. Some areas in the Penrith LGA are affected by levels of salinity that are high enough to damage buildings and

corrode concrete structures. Salinity can also result in the degradation of vegetation and soils, including the loss of productive agricultural land.

Salinity occurs when salts naturally found in soil or groundwater mobilise and rise to concentrate at the ground's surface. This is due to changes in the natural water cycle caused by such activities as vegetation removal and replacement with shallow rooted, high water using plants; concentrated stormwater flows; leaking underground water pipes; and over-watering of parks and gardens.

This section seeks to ensure that consideration is given to the impact of new development on salinity processes, as well as the impact of salinity on new development. It seeks to supplement the salinity controls set out in the LEP.

B. Objectives

- a) To avoid or mitigate the impacts of development on salinity processes to prevent any degradation in soils, groundwater or vegetation;
- b) To avoid or mitigate the impacts of salinity on development, including damage to buildings and infrastructure and the loss of productive agricultural land; and
- c) To ensure development will not significantly increase the salt load in existing watercourses.

C. Controls

1) Salinity Analysis

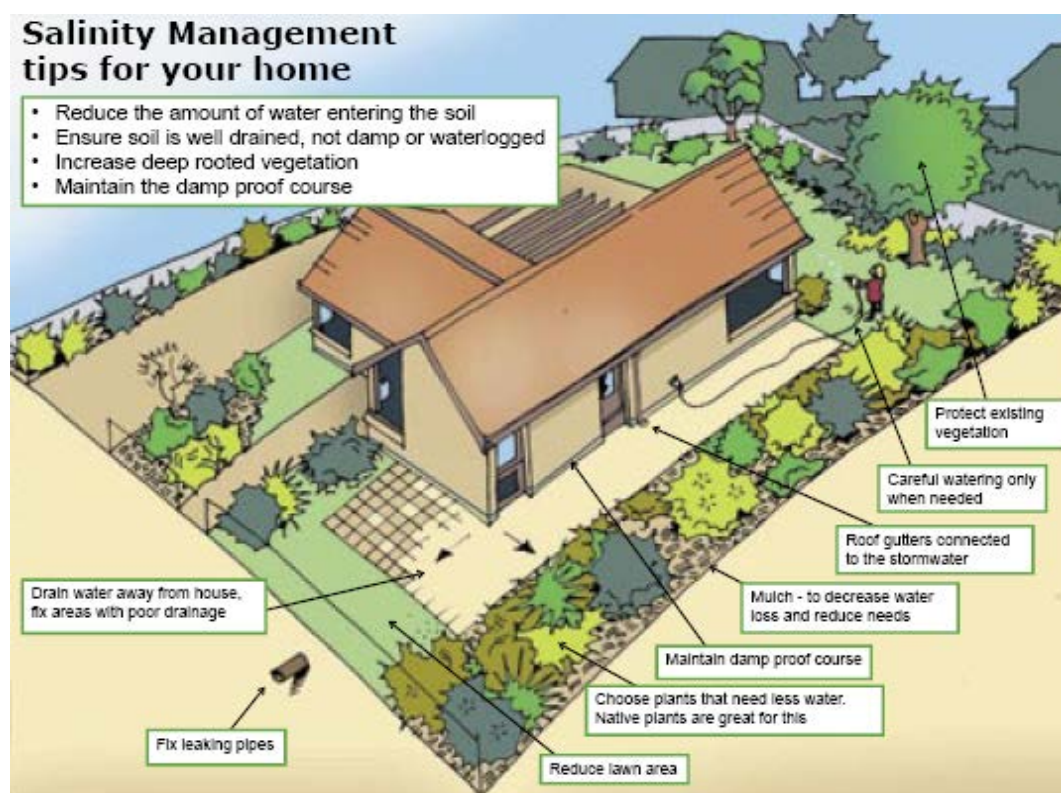
- a) A detailed salinity analysis will be necessary if:
 - i) The site of the proposed development has been identified as being subject to a potential risk of salinity (refer to the map *Salinity Potential in Western Sydney 2002*), or
 - ii) An initial investigation shows the site is saline or affected by salinity.
- b) Investigations and sampling for salinity are to be conducted in accordance with the requirements of *Site Investigations for Urban Salinity*.
- c) The author of the salinity analysis must sign off on the project on completion of works and submit this to Council prior to an occupation certificate being issued, if required.

2) Salinity Controls

- a) Disturbance to the natural hydrological system shall be minimised by maintaining good drainage and reducing water logging on the site.
- b) Groundwater recharge shall be minimised by such measures as:
 - i) Directing runoff from paved areas (roads, car parks, domestic paving, etc) into lined stormwater drains rather than along grassed channels as necessary;
 - ii) Lining or locating any water storages/ponds/drainage basins higher in the landscape to avoid recharge where proximity to the water table is likely to create groundwater mounding; and
 - iii) Encouraging on site detention of roof water runoff.
- c) Soil erosion and sediment control measures, in accordance with erosion and sedimentation controls in this section, shall be incorporated into the development during its construction and following its completion.

- d) Construction techniques shall be employed that prevent structural damage to the development as a result of salinity (see “Building in a Saline Environment”). For example, building footings shall be constructed so as not to impede groundwater movement and building materials that are resistant to salt effects shall be used.
 - e) The removal of vegetation, particularly native vegetation, on the site shall be minimised.
 - f) All landscape designs should undertake the following practices:
 - i) Select salt tolerant plant species (generally native trees and shrubs);
 - ii) Use mulch in all garden beds;
 - iii) Minimise the area of lawn as this requires large quantities of water;
 - iv) Use ‘water wise’ garden and landscape design (including timers, selection of plants with low water needs, grouping plants of similar water usage together, etc); and
 - v) Use non-corrosive materials when constructing pipes and channels.
 - g) All works are to conform with the *Western Sydney Salinity Code of Practice*, June 2003.
- Figure C4.2 below illustrates some of these controls.

Figure C4.2: Salinity Management Tips



(Source: WSROC 2005, *Good Housekeeping to Manage Urban Salinity*)

C. Other Information

People seeking further information on salinity or preparing development applications may wish to refer to the following:

- Department of Planning, Infrastructure and Natural Resources 2002, *Map of Salinity Potential in Western Sydney* and accompanying *Guidelines*
- Western Sydney Regional Organisation of Councils (WSROC) 2003, *Western Sydney Salinity Code of Practice*
- WSROC 2005, *Good Housekeeping to Manage Urban Salinity*
- Local Government Salinity Initiative series by the former Department of Natural Resources (2002) including:
 - *Site Investigations for Urban Salinity*
 - *Land Use Planning and Urban Salinity*
 - *Building in a Saline Environment*
 - *Roads and Salinity.*

Table of Contents

C5 WASTE MANAGEMENT	2
5.1. WASTE MANAGEMENT PLANS	4
5.2. DEVELOPMENT SPECIFIC CONTROLS	5
5.2.1. SITING AND DESIGN OF WASTE BIN STORAGE AREAS FOR RESIDENTIAL DEVELOPMENT	5
5.2.2. RESIDENTIAL DEVELOPMENT CONTROLS	7
5.2.3. MIXED USE DEVELOPMENT CONTROLS	12
5.2.4. NON-RESIDENTIAL DEVELOPMENT CONTROLS	12
5.3. GENERAL CONTROLS	14
5.3.1. SITE MANAGEMENT	14
5.3.2. SELECTION OF BUILDING MATERIALS	16
5.3.3. DESIGNING FOR WASTE MINIMISATION	18
5.3.4. SITING AND DESIGN OF WASTE STORAGE AND COLLECTION AREAS	18
5.3.5. MANAGEMENT OF WASTE STORAGE AND COLLECTION AREAS	19
5.4. HAZARDOUS WASTE MANAGEMENT	20
5.5. ON-SITE SEWAGE MANAGEMENT	20

C5 Waste Management

A. Background

Waste management has developed into a major environmental issue linked to sustainability, and is increasing in priority for all levels of government within Australia. There is an increasing realisation that 'waste' is a significant resource, like land and water, due to the potential to reuse, recycle and recover products from waste streams.

Waste management is relevant to all stages of a development from construction, through its ongoing use, to demolition. Waste management also includes the way in which waste is stored and collected.

The Waste Hierarchy

The *Waste Avoidance and Resource Recovery Act 2001* highlights the need for a holistic approach to waste management. The 'waste hierarchy' (see Figures C5.1 and C5.2) attempts to prioritise waste management based on reducing waste generation, re-using existing products, recycling products, recovering products and finally disposing responsibly of waste with the aim of reducing the need for landfill sites.

Figure C5.1



Figure C5.2



Types of Waste

Waste comes in a number of forms including solid, liquid and hazardous wastes. Liquid and hazardous wastes are primarily dealt with by existing Acts and Regulations, but there are some issues relating to rural, health and industrial land uses that are covered by this Plan. Traditionally, solid wastes focussed on municipal wastes such as garbage. Since 2001, waste has been recognised as a by-product of development, with the building and construction industry identified as a major generator of waste.

Benefits of Waste Management

Effective waste planning and on-site management assists in improving the efficiency and lowering the cost of the development/construction process. A few of the benefits of good waste planning include:

- **Costs:** Material wasted on site is paid for twice – once in the original purchase, and secondly, in its disposal. Reducing waste reduces these costs.
- **Safety:** Good site management can improve site safety and reduce liabilities – 'A Clean Site is a Safe Site'.

- **Image:** Waste is a significant marketing issue. Good waste management practices can provide a positive image for the builder/developer.

B. General Objectives

- a) To facilitate sustainable waste management within the City of Penrith in accordance with the principles of Ecologically Sustainable Development;
- b) To manage waste in accordance with the 'Waste Hierarchy' to:
 - i) Avoid producing waste in the first place;
 - ii) Minimise the amount of waste produced;
 - iii) Re-use items as many times as possible to minimise waste;
 - iv) Recycle once re-use options have been exhausted; and
 - v) Dispose of what is left, as a last resort, in a responsible way to appropriate waste disposal facilities;
- c) To assist in achieving Federal and State Government waste minimisation targets as set out in the *Waste Avoidance and Resource Recovery Act 2001* and *NSW Waste Avoidance and Resource Recovery Strategy 2007*;
- d) To minimise the overall environmental impacts of waste by:
 - i) Encouraging development that facilitates ongoing waste avoidance and complements waste services offered by both Council and/or private contractors;
 - ii) Requiring on-site source separation and other design and siting standards which assist waste collection and management services offered by Council and/or the private sector;
 - iii) Encouraging building designs and construction techniques that minimise waste generation;
 - iv) Maximising opportunities to reuse and recycle building and construction materials as well as other wastes in the ongoing use of a premise; and
 - v) Reducing the demand for waste disposal.

C. When does this Section apply?

The provisions of this Section apply to proposals requiring development consent or a Complying Development Certificate, and will include demolition, construction (including earthworks), alteration/addition and/or change of use of buildings for all types of developments in the City of Penrith. This section should also be used as a guide for activities which are classified as exempt development or development which falls under Part 5 'Environmental Assessment' of the *Environmental Planning and Assessment Act 1979*.

D. How to Use this Section

This Plan is a multi-layered document that recognises the relationship of a number of issues to achieving sustainable outcomes. Therefore, when addressing waste management, it is important to read all relevant parts of this Plan.

E. Other Information

People seeking further information on waste management or preparing development applications may wish to refer to the following:

- *NSW Waste Avoidance and Resource Recovery Strategy 2007 and Performance Report 2008* - Department of Environment and Climate Change
- *Better Practice Guide for Waste Management in Multi-unit Dwellings* (2008) – Department of Environment and Climate Change
- *Better Practice Guide for Waste Management and Recycling in Commercial and Industrial Facilities* (2012) – Department of Environment and Climate Change
- *Waste Classification Guidelines* (2008) - Department of Environment, Climate Change and Water.
- Waste Management Guideline Document: Residential Flat Buildings
- Waste Management Guideline Document: Town Houses
- Waste Management Guideline Document: Sub-division

F. Lifting the Bar

The following represent some ways in which applicants can demonstrate additional commitment to waste avoidance and management expressed in this Plan. Demonstration of this commitment may lead to Council considering variation of development controls.

Applications that vary the development controls listed in this section will need to demonstrate that the proposed development complies with the objectives relevant to the development controls it seeks to vary.

- a) Reduce the volume of demolition and construction waste going to landfill by 76%;
- b) Demonstrate ongoing commitment to waste avoidance and reduce the volume of waste generated by occupants of the development by:
 - i) Setting a target for commercial uses,
 - ii) Setting a target for industrial uses,
 - iii) Setting a target for residential/domestic uses,
 - iv) Setting a target for Council's buildings/facilities,consistent with targets established in the NSW Waste Avoidance and Resource Recovery Strategy 2007; and
- c) Monitor waste generated, recovered and/or sent to landfill by installing a Building Management System.

5.1. Waste Management Plans

A. Controls

- 1) Applicants are to submit a Waste Management Plan when lodging a development application for:
 - a) Demolition or construction of buildings;
 - b) Change of use of buildings for rural, residential, commercial and industrial developments;

- c) Subdivision of land and/or buildings; or
 - d) Alterations to 50% or more of the existing gross floor area of buildings, or additions to buildings resulting in a 50% increase (or more) to the existing gross floor area.
- 2) The Waste Management Plan must be supported by scaled waste management drawings that are to assist in demonstrating compliance with the provisions of this Plan.
- 3) A Waste Management Plan will also be required for applications for a Complying Development Certificate.
- 4) The Waste Management Plan enables Council (or the Certifying Authority) to assess the waste likely to be generated by the development and ensure that appropriate actions are taken so as to properly manage the generation, storage and disposal of wastes.
- 5) The Waste Management Plan must include details of:
 - a) The types and volumes of wastes and recyclables likely to be generated as a result of the development;
 - b) How waste and recyclables will be stored and treated on site;
 - c) How the residual non-reusable or non-recyclable wastes and recyclables are to be disposed of; and
 - d) How ongoing waste management will operate once the development is complete (for the life of the development).

5.2. Development Specific Controls

A. Background

Different types of development have different requirements for waste management. The following controls for specific types of development are additional to the general controls in this Chapter.

B. Objectives

- a) To minimise waste generation for a number of specific development types by providing specific controls for these types;
- b) To maximise re-use and recycling of materials through appropriate provision and design of waste recycling areas for each development type;
- c) To ensure the appropriate storage and collection of waste from each development type; and
- d) To ensure new developments can be serviced efficiently and effectively by Council's standard waste service.

5.2.1. Siting and Design of Waste Bin Storage Areas for Residential Development

- 1) This section provides design requirements for waste bin collection/storage areas for residential development referred to in this Chapter.
- 2) **Waste Bin Storage Area Size:**
 - a) The development must provide a waste bin storage area that is of sufficient size to accommodate all required waste bins associated with the development. This is to be

achieved through the provision of a communal waste storage area. For larger developments, multiple waste bin storage areas may be required.

- b) All waste streams must be catered for, including general waste, bulky waste and recyclable waste.
- c) Sufficient space must be provided onsite to ensure that adequate room is provided to manoeuvre, clean and maintain all waste and recycling bins for the development.
- d) Sufficient space must be provided onsite for any required equipment to manage waste, waste bins (including washing and cleaning) and the waste bin storage area.

3) Waste Bin Storage Area Location:

- The waste bin storage area is to be located within the basement footprint of the residential flat building developments.
- The waste bin storage area is to be located on the ground level for multi-unit housing developments.
- The waste bin storage area is to be located where its use and operation will not adversely impact the amenity of development occupants in terms of noise and odour.
- If the waste bin storage area is to be used as the collection point (for multi-unit housing), it must be located and designed to meet the applicable requirements for servicing.

4) Waste Bin Area Layout

- The layout of the waste bin storage area is to be designed so that the area is free from obstructions so not to restrict the movement and servicing of the bins.
- An aisle space of 1.2m is required to access and manoeuvre the bins.
- In determining the layout and size of the waste bin storage area, consideration should be given to whether waste bins are required to be rotated. If waste bins are to be rotated, additional room size to aisle width will be required to manoeuvre bins.

5) Waste Bin Storage Area Construction

- a) Waste Bin Storage Rooms are to be designed so that they can be constructed to the following:
 - i) Floors must be constructed of concrete at least 75mm thick and graded and drained to a Sydney Water approved drainage fitting.
 - ii) The floors must be finished to a smooth even surface.
 - iii) The walls must be constructed of solid impervious material.
 - iv) The ceilings must be finished with a smooth faced non-absorbent material capable of being cleaned.
 - v) Walls, ceilings and floors must be finished in a light colour.
 - vi) It is to be provided with an adequate supply of hot and cold water mixed through a centralised mixing valve with hose cock.
 - vii) A close fitting and self-closing door openable from within the room.
 - viii) Must be constructed to prevent the entry of vermin.
 - ix) Be provided with adequate light and ventilation. The light source must be through controlled light switches located both outside and inside the room.

5.2.2. Residential Development Controls

5.2.2.1 Controls applicable to all types of residential development (including dwellings and dual occupancies)

- 1) The kitchen of each dwelling should be designed with sufficient space (or an alternate location) for the interim storage of organic waste, other recyclable waste and non-recyclable waste. It should be of sufficient size to hold at least a single day's waste and to enable source separation of garbage, recyclables and compostable materials.
- 2) The design and location of waste storage areas/facilities should be such that they:
 - a) Complement the design of both the development and the surrounding streetscape;
 - b) Have access to a cold water supply for the cleaning of bins and the waste storage areas; and
 - c) Not be visually prominent from public areas.
- 3) An area for composting is to be provided on site and made available for residents' use. The siting of composting facilities should consider:
 - a) The location and proximity of dwellings (including those adjoining the subject property), to minimise likely odour impacts/nuisance;
 - b) The location of the drainage system;
 - c) Whether the facility is appropriately designed for composting; and
 - d) Provision of signposting to ensure inappropriate waste is not added to the compost.

5.2.2.2 Dwelling houses and dual occupancies

- 1) Waste containers are to be stored in a suitable and easily accessible location on site:
 - a) with unobstructed access to Council's usual collection point; and
 - b) to avoid vandalism, nuisance and visual clutter.

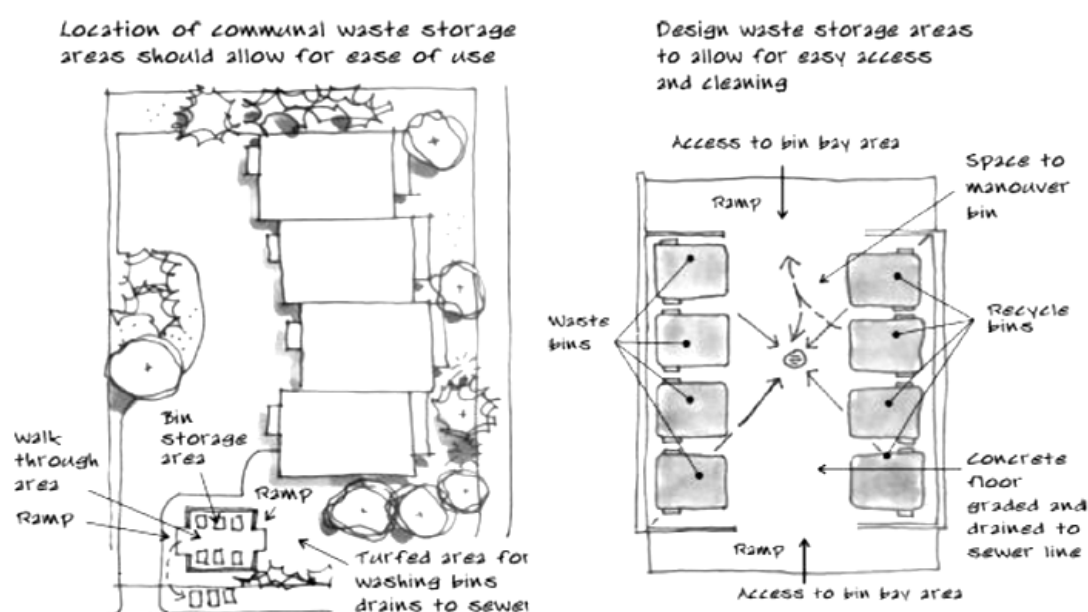
Figure C5.3: Example of location for waste storage area



5.2.2.3 Multi dwelling housing

- 1) The term 'multi dwelling housing' is defined in Penrith LEP 2010.
- 2) For developments comprising up to three dwellings, please refer to the controls applying to "Dwelling houses and dual occupancies" unless the characteristics of the site will restrict or impede access to the collection site. A communal waste storage area must be provided for residential developments in the following circumstances:
 - a) Contain four or more dwellings;
 - b) Include non-residential uses located in the same building (known as 'mixed use developments' and defined in Penrith LEP 2010);
 - c) Where the number of bins would not fit comfortably on the street frontage or where the placement of bins along the nature strip would have a detrimental effect on residential amenity; or
 - d) Where the characteristics of the site restrict or impede access to the collection site.
- 3) The development must provide a waste bin storage/collection area that is of sufficient size to accommodate all required waste bins associated with the development. This is to be achieved through the provision of a waste storage bin area either at ground level or within the basement footprint of the development which:
 - a) Provides direct and convenient access for the occupants of the development;
 - b) Allows for the safe and direct transfer of all waste bins from the waste bin storage area to the collection point;
 - c) Does not impact the amenity of occupants within and adjoining the development in relation to visual amenity, noise and odour; and
 - d) Does not interfere with the car parking (on or off-street), driveways, footpaths, landscaping and any existing trees and vegetation.
 - e) The waste bin storage area is to be designed in accordance with Section 5.2.1 Siting and Design of Waste Bin Storage Areas for Residential Development.
 - f) Swept paths demonstrating adequate manoeuvring area are to be provided with the application.

Figure C5.4: Communal waste storage area location layout



- 4) Where the waste storage area will be secured, the locking mechanism installed must be an Abloy system employed by Council. The installation of the locking system and the supply of keys will be provided by Council at the developer's cost.
- 5) The size and number of the waste bins shall be determined by Council, having regard to the need for either on-site access by collection vehicles or the requirement for bins to be wheeled to the collection point for collection by a contractor. If transferred to the street for collection, the body corporate or a caretaker must be responsible for the movement of bins to their collection point and their subsequent return.
- 6) Where on-site collection is required to service the development, adequate and safe access must be provided for Council's Standard Waste Collection Vehicles and waste collection staff as follows:
 - a) The site must be designed to allow collection vehicles to enter and exit the site in a forward direction with limited manoeuvring and reversing on-site;
 - b) The route of travel (including vehicle manoeuvring areas) for the waste collection vehicle to the collection point is to satisfy the typical dimensions of heavy rigid vehicle. This also includes adequate vehicle clearance for the vehicle. Australian Standard AS2890.2 Parking Facilities: Off-Street Commercial Vehicle Facilities provides typical dimensions, turning circles and clearance heights.
 - c) The route of travel for the waste vehicle is to be adequately paved and of sufficient strength to support the waste collection vehicle.
 - d) The grades of entry and exit ramps must not exceed the capabilities of the waste collection vehicle and are to comply with AS2890.2 Parking Facilities: Off-Street Commercial Vehicle Facilities.
 - e) The waste collection point and parking area for the waste vehicle is to be clearly nominated with dimensions on the site plan. The collection point is to be of sufficient space to accommodate and safely manoeuvre all required waste bins.
 - f) Access to the nominated waste collection point for the development is to be designed to ensure that Council's standard waste vehicle can safely access and manoeuvre within the site. Typical dimensions (and turning circles) for a heavy rigid vehicle are provided within AS 2890.2 Parking Facilities: Off-Street Commercial Vehicle Facilities.
- 7) Where on-site collection is not possible because of topographic or access constraints, and/or restrictive site dimensions, adequate arrangements need to be made for the convenient, safe and direct access between the waste storage room and the collection point. These arrangements need to be discussed at a pre-lodgement meeting with Council.
- 8) For developments where on-site collection is required or where Council collectors are required to enter a site for the purpose of waste collection services, an agreement will be required to be entered into with Council. This agreement is to be entered into with Council giving power and authority to Council to enter the; and for the purpose of waste services. Council is also to be provided with indemnity against any future claims for damage and loss.

5.2.2.4 Residential Flat Buildings

- 1) The development must provide a waste bin storage area that is of sufficient size to accommodate all required waste bins associated with the development. This is to be achieved through the provision of a waste storage bin area located within the basement footprint of the development. For larger developments, multiple waste bins storage areas may be required.
 - a) The waste bin area is to be designed in accordance with Section 5.2.1 Siting and Design of Waste Bin Storage Areas for Residential Development.
 - b) Additional storage space for bulky items is to be provided for the development.
 - c) Swept paths demonstrating adequate manoeuvring area are to be provided with the application.
- 2) For developments comprising three or more storeys, the development is to incorporate a waste chute system that:
 - a) The waste chute system will provide a separate chute for both residual and recyclable material.
 - b) Waste Disposal points are to be provided on each residential level of the development located within a high trafficked area for residential use.
 - c) Larger recyclable goods are to be placed in a separate location identified by the strata management for collection.
 - d) The chute is to be designed to minimise noise and fire risk is reduced.
 - e) The chute is to be completely enclosed and fire-rated and comply with the BCA.
 - f) The chute is to terminate in a garbage and recycling room and discharge directly into a receptacle.
 - g) The waste chute service room must be located directly under where the chute terminates. The room will need to accommodate the entire fleet of bins allocated to the development.
 - h) A separate bin storage room located in the basement will need to accommodate the entire fleet of bins allocated to the development.
 - i) A site caretaker/manager will be required to transfer all bins from the bin storage room to the collection room located on ground floor.
- 3) Council may consider an alternative solution to the waste chute system for developments comprising three or more storeys if the applicant can demonstrate:
 - a) That the alternative system provides a convenient method for the transfer of waste to a centralised location within the basement/ground floor;
 - b) Provides adequate room to cater for the storage and easy access to all waste bins required for the size of the proposed development; and
 - c) Does not require residents to walk to the ground floor with waste and dispose of the waste within designated bins.
- 4) The Waste Services Room is to be provided so that:
 - a) It is accessible for residents on each residential level of the development. The waste services room will include the access to the residual and recyclable chute with provisions for cardboard storage.

- b) The maximum travel distance from any dwelling to the waste services room is not to exceed 75m.
 - c) The waste service room must be of adequate size to accommodate the required access to chutes or waste infrastructure assigned to the development
 - d) The room is to be designed to accommodate waste generation rates projected for the development
- 5) On-site collection is required to service the development. Adequate and safe access must be provided for Council's Standard Waste Collection Vehicles and waste collection staff as follows:
- a) The route must be designed to allow collection vehicles to enter and exit the site in a forward direction with limited manoeuvring and reversing on-site;
 - b) The route of travel (including vehicle manoeuvring areas) for the waste collection point is to satisfy the typical dimensions of heavy rigid vehicle. This also includes adequate vehicle clearance for the vehicle. Australian Standard AS2890.2 Parking Facilities: Off-Street Commercial Vehicle Facilities provides typical dimensions and turning circles.
 - c) The route of travel for the waste vehicle is to be adequately paved and of sufficient strength to support the waste collection vehicle.
 - d) The grades of entry and exit ramps must not exceed the capabilities of the waste collection vehicle and are to comply with AS2890.2 Parking Facilities: Off-Street Commercial Vehicle Facilities.
 - e) The waste collection point and parking area for the waste vehicle is to be clearly nominated with dimensions on the site plan. The collection point is to be of sufficient space to accommodate and safely manoeuvre all required waste bins.
 - f) Access to the nominated waste collection point for the development is to be designed to ensure that Council's standard waste vehicle can safely access and manoeuvre within the site. Typical dimensions (and turning circles) for a heavy rigid vehicle are provided within AS 2890.2 Parking Facilities: Off-Street Commercial Vehicle Facilities.
- 6) The on-site collection point is to be clearly nominated on the site plan which accompanies the development application. The collection point is to only temporarily store waste bins so that they can be serviced. The waste bin holding area is to be located fully within the development site. Consideration will be given to multiple waste bin holding areas for larger developments. The collection point is to be designed so that:
- a) It is of sufficient size to accommodate all required waste bins for the development;
 - b) It is located at ground level away from pedestrian entrances of the development and habitable windows (including both the development and adjoining dwellings);
 - c) It is to be clearly separated from car parking bays (on or off street), footpaths and landscaped areas.
 - d) The bin-carting route is to ensure that bin transfer complies with the requirements of Work Health and Safety legislation.
 - e) The bin-carting route:
 - is to be direct and as short as possible;
 - is to be solid, concrete and non-slip;
 - is to be paved and be a minimum of 2m wide;
 - is to be free from obstructions and is not required to be carried over any steps;

- is to be a maximum of 75m in length and a maximum grade of 7%; and
 - For larger bins (660L & 1100L), the maximum length of the route of travel is 10m.
- 7) Where on-site collection is not possible because of topographic or access constraints, and/or restrictive site dimensions, adequate arrangements need to be made for the convenient, safe and direct access between the waste storage room and the collection point. These arrangements need to be discussed at a pre-lodgement meeting with Council.
 - 8) For developments where on-site collection is required or where Council collectors are required to enter a site for the purpose of waste collection services, an agreement will be required to be entered into with Council. This agreement is to be entered into with Council giving power and authority to Council to enter the site; and for the purpose of waste services. Council is also to be provided with indemnity against any future claims for damage and loss.
 - 9) A separate area should also be provided for the storage and collection of bulky waste (such as old cardboard boxes) and old or discarded furniture/appliances. The sizing of the bulky waste area needs to be capable of holding the bulky waste generated from the development between scheduled pickups. The bulky waste area needs to be located near to the on-site loading bay).
 - 10) Council will consider alternate and innovative waste management systems for high density developments which deliver sound town planning and environmental outcomes for the development and broader community. The applicant is encouraged to discuss the innovative solutions with Council's Waste Management Team and during Council's Pre-DA service.

5.2.3. Mixed Use Development Controls

- 1) Where mixed use developments include a residential component, separate waste management facilities are to be provided, in accordance with the residential controls identified in Section 5.2 above.
- 2) For non-residential uses located in mixed use developments, separate waste management facilities are to be provided for the non-residential uses, in accordance with the controls identified in Section 5.2.4 below.

5.2.4. Non-Residential Development Controls

- 1) These controls will apply to commercial, industrial and any other non-residential development.
- 2) For any building comprising three or more storeys and not containing dwellings, a suitable system for the interim storage and transportation of waste and recyclables from each storey to the waste storage/collection area is to be integrated within the building's design.
- 3) Waste storage and collection areas should be:
 - a) Flexible in their design so as to allow for future changes in the operation, tenancies and uses;
 - b) Located away from primary street frontages, where applicable;
 - c) Suitably screened from public areas so as to reduce the impacts of noise, odour and visual amenity; and

- d) Designed and located to consider possible traffic hazards (pedestrian/vehicular) likely to be caused by the storage and collection of waste.
- 4) The following features will need to be considered in the design of waste storage and collection areas:
 - a) Dry recyclables including containers, paper, cardboard and toners for printers and photocopiers should be separated from other waste, for recycling;
 - b) Food scraps should be placed in specialised containment bins and collected on a regular basis (particularly where large volumes of perishable wastes are generated);
 - c) Refrigerated garbage rooms should be provided where there are large quantities of perishable wastes and infrequent collections; and
 - d) Clinical or hazardous and liquid waste should be placed in specialised containment bins and collected by specialised services.
- 5) Grease traps must be provided where there is a likelihood of liquid waste entering the drainage systems (contact Sydney Water to obtain trade waste requirements).
- 6) Communal storage/collection facilities are recommended where:
 - a) The design makes it difficult for all tenants to have ready access to a collection point; or
 - b) The site characteristics restrict vehicle entry.
- 7) Where a communal facility exists, each tenant should have a designated area which is clearly signposted.
- 8) Should a collection vehicle be required to enter the property, the driveway and manoeuvring area must be suitable for a collection vehicle in terms of both its strength and design.
- 9) The system for waste management must be compatible with the collection service(s) to be used whether Council or private contractor.
- 10) Swept paths demonstrating adequate manoeuvring area are to be provided with the application.

C. Lifting the Bar

The following represent some ways in which applicants can demonstrate additional commitment to the development specific waste management controls expressed in this Plan. Demonstration of this commitment may lead to Council considering variation of development controls. Applications that vary the development controls listed in this section will need to demonstrate that the proposed development complies with the objectives relevant to the development controls it seeks to vary.

- a) Incorporate and install a Building Management System which monitors the ongoing sustainability measures of the building and its occupants, such that it monitors the amount of recyclable waste and other waste being generated/collected as well as the amount that is disposed for recycle/reuse or sent to landfill.
- b) Reduce the volume of demolition, construction and fit out waste, including excavation, going to landfill by 76%.

5.3. General Controls

A. Background

Waste minimisation needs to be an integral component of the design and construction phases of a development. Issues that should be considered early in the development process include:

- a) Ensuring project management of the site includes minimising waste generation, requiring the appropriate storage and timely collection of waste materials, and maximising re-use or recycling of materials;
- b) Selecting materials to maximise re-use and recycling of existing materials;
- c) Ensuring the right quantity of materials are delivered at the right time in the construction process to avoid damage and wastage, and returning unused materials; and
- d) Considering the re-use and recycling of any new materials at the end of the development's life.

Significant reductions in waste to landfill and cost-savings can be made at the demolition, earthworks and/or construction stage of a development by implementing the waste management plan.

B. Objectives

To encourage waste avoidance and resource recovery through planning, re-use and recycling by:

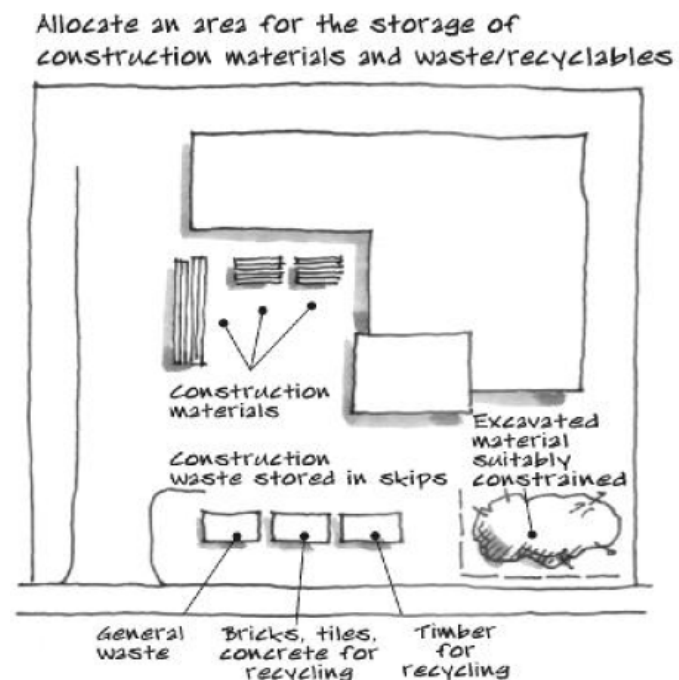
- a) Improving project management of demolition or construction works to facilitate on-site source separation and appropriate collection of waste;
- b) Ensuring that developments are designed to incorporate waste minimisation measures by facilitating source separation on site, the storage and collection of wastes and recyclables and providing maximum opportunities to use recycled materials; and
- c) Minimising the total material resources used and encouraging the selection and use of materials with low environmental impact over the lifecycle of the building.
- d) To ensure new developments are designed to maximise resource recovery through measures and features that promote waste avoidance, source separation and recycling.
- e) To ensure new developments incorporate waste storage and waste collection areas that are accessible, safe and convenient for both occupants and service providers.
- f) To promote measures which will ensure all waste streams are stored and handled appropriately to minimise adverse environmental, health and amenity impacts and which minimise risk to health and safety for all associated with waste collection and handling.
- g) To reduce illegal dumping through providing well designed and appropriate bulky waste storage areas within the development.

5.3.1. Site Management

- 1) Proposals involving demolition and/or construction (including earthworks) are to include a Waste Management Plan which addresses the following issues:
 - a) Minimising site disturbance and eliminating unnecessary excavation;
 - b) Where applicable, stripping topsoil from areas subject to excavation and storing it on site for re-use;

- c) Identifying all waste likely to result from the works on site and opportunities for the re-use or recycling of materials;
- d) Where construction is proposed, determining:
 - i) Opportunities for the use of prefabricated components and recycled materials;
 - ii) Approximate volumes of materials to be used and incorporating these volumes into a purchasing policy so that the correct quantities are purchased;
 - iii) Delivery arrangements of materials so that materials are delivered 'as needed' to prevent the degradation of materials through weathering and moisture damage; and
 - iv) Opportunities to return excess materials to the supplier or manufacturer;
- e) Considering the method of demolition to be utilised so that selective deconstruction is implemented, enabling effective recycling of materials;
- f) Identifying the area(s) on site to be used for the storage of materials, separating the areas for recycling and disposal (giving consideration to access, slope, drainage, location of waterways, stormwater outlets and vegetation);
- g) Ensuring that separated materials are to be kept uncontaminated to guarantee the highest possible reuse value;
- h) Considering where excess fill material will be disposed of, the quantity and quality of the excess material and the method of transport to be used;
- i) Identifying and providing measures to prevent the occurrence of windblown litter, dust and stormwater pollution;
- j) Where applicable, ensuring that:
 - i) Contractors are arranged for the transport, processing and disposal of waste and recycling; and
 - ii) Evidence, such as weighbridge dockets and invoices for waste disposal or recycling services, is retained and available for presentation to Council Officers upon request.

Figure C5.5: Identify areas on site for storage of materials, waste and recyclables



5.3.2. Selection of Building Materials

- 1) Choose materials with low embodied energy properties and/or materials that have been salvaged/recycled for the construction/fit out of the development. Table C5.1 on the following page identifies the building materials that can be reused/recycled.

Examples include:

- a) Concrete that utilises slag and fly ash content.
 - b) Structural and reinforced steel that uses recycled steel content.
 - c) Bulk insulation products that contain recycled content, such as recycled glass in glass-wool.
- 2) Choose certified plantation or engineered timber materials, and avoid unsustainable imported timber (such as western red cedar, oregon, meranti, luan or merbau).
 - 3) Choose low volatile organic compound (VOC) materials, including low/no VOC paints and coatings, floor coverings and underlays, as materials with a high VOC or containing hydrofluoro-carbons can become volatile at room temperature contributing to poor indoor air quality and thus affecting the health of occupants.

Table C5.1: Materials and their Potential for Re-use and Recycling

Material	Re-use / Recycling Potential
Concrete	Re-used for filling, levelling, or road base
Bricks	Can be cleaned for re-use or rendered over or crushed for use in landscaping and driveways
Roof tiles	Can be cleaned and re-used or crushed for use in landscaping and driveways
Hardwood Beams	Re-used as floorboards, fencing or furniture or sent to second hand timber suppliers
Other Timber	Re-used as formwork, bridging, blocking and propping, mulching or sent to second hand timber suppliers
Doors, Windows, Fittings	Sent to second hand building suppliers
Glass	Re-used as glazing or aggregate for concrete production
Synthetic Rubber (carpet underlay)	Reprocessed for use in safety devices and speed humps
Overburden	Power screened and used as top soil
Green waste	Can be used for mulching, composting
Carpet	Can be sent to recyclers or reused in landscaping
Plasterboard	Removed for recycling, returned to supplier
Excavated material	Re-used on site or disposal to approved site
Plumbing and metal fittings	Recycled off-site

5.3.3. Designing for Waste Minimisation

- 1) The design of developments should incorporate principles on how waste can be minimised in the design by:
 - a) Incorporating the use of modular components;
 - b) Minimising excavation and fill (See the “Land Management” section of this Plan);
 - c) Using prefabricated frames, trusses and cladding;
 - d) Using standard material sizes or negotiating with manufacturers for the supply of non-standard material sizes;
 - e) Selecting materials that do not require finishes;
 - f) Grouping wet areas together to minimise the amount of pipe work required;
 - g) Implementing measures to prevent the occurrence of windblown litter, dust and stormwater pollution;
 - h) Incorporating existing trees/shrubs into the landscape plan;
 - i) Designing for de-construction;
 - j) Incorporating facilities for the source separation of wastes and recyclables (both internal and external); and
 - k) Designing waste storage areas complementing the development and the surrounding streetscape.

5.3.4. Siting and Design of Waste Storage and Collection Areas

- 1) Waste storage and/or collection areas (or the required space for these facilities) should be available both on-site and within individual tenancies of all developments for the source separation of waste, recyclables and compostable materials.
- 2) The expected volumes of waste and recyclables generated by the construction and ongoing use of the development, including individual tenancies, must be calculated. The selection of appropriate waste equipment and the floor area requirements for waste storage will need to be an integral element of the design for the development.
- 3) Space must be provided to allow for the storage, access and manoeuvring of waste bins to facilitate ease of use and servicing.
- 4) Waste and recycling containers must be stored at all times on the site unless Council has issued an approval under the *Local Government Act 1993* to store waste in a public place.
- 5) All waste management facilities must comply with the *Building Code of Australia* and relevant Australian Standards.
- 6) The nominated collection area for the development on-site is to be clearly nominated on scaled site plans accompanying the development application.

5.3.4.1 Access to Waste Storage and/or Collection Areas

- 1) The design and location of waste storage and/or collection areas should allow for ease of access for both tenants and waste contractors and should be separated from the car parking area(s) or located away from the circulation path of other vehicles.
- 2) The location of the waste storage and/or collection area(s):

- a) Is to be convenient and accessible to the occupants of all tenancies in the development; and
 - b) Must allow 120/240 litre bins to be wheeled to the street kerb over flat or ramped surfaces with a maximum grade of 7% and not over steps, landscape edging or gutters; or
 - c) Must allow for bulk garbage bin(s) to be wheeled out and be serviced by a front loading garbage truck on a flat surface with a maximum grade of 5%, and not over steps, landscape edging or gutters; and
 - d) Be screened or discreetly located away from public spaces.
- 3) There must be sufficient manoeuvring area on-site to allow collection vehicles to enter and leave the site in a forward direction and service the development efficiently with little or no need to reverse.

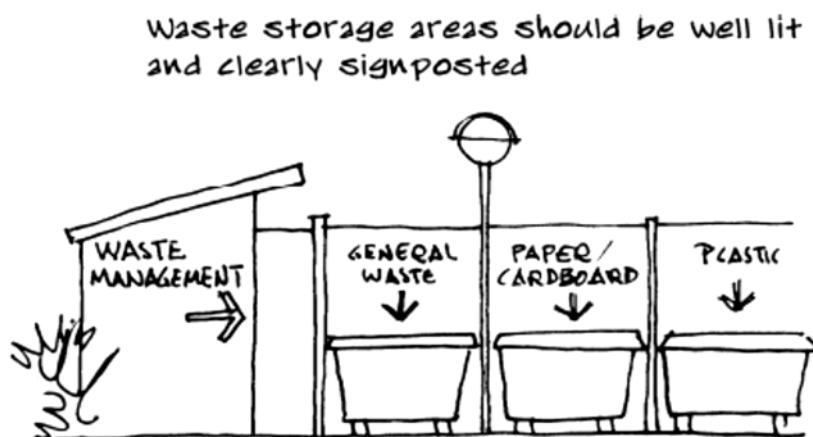
5.3.4.2 Design of Waste Storage and/or Collection Areas

- 1) The design and location of waste storage and/or collection areas are an integral part of the development's design and should complement the public domain by:
 - a) Reducing potential noise and odour impacts;
 - b) Being well lit and well ventilated, with appropriate measures installed so as to prevent vermin; and
 - c) Enhancing public safety.
- 2) Waste storage and/or collection areas must have access to a water outlet for washing purposes, with wash water discharging to an approved sewer outlet.
- 3) Waste equipment should be protected from theft and vandalism.

5.3.5 Management of Waste Storage and Collection Areas

- 1) Administrative arrangements for ongoing waste management must be provided, including signs.
- 2) Waste storage and/or collection areas (including individual containers) should be suitably signposted so as to ensure appropriate use.
- 3) The responsibility for the ongoing management of waste facilities must be determined prior to the commencement of construction work on a development.

Figure C5.6: Waste storage areas should be well lit and clearly signposted



C. Lifting the Bar

The following represent some ways in which applicants can demonstrate additional commitment to the general waste management controls expressed in this Plan. Demonstration of this commitment may lead to Council considering variation of development controls. Applications that vary the development controls listed in this section will need to demonstrate that the proposed development complies with the objectives relevant to the development controls it seeks to vary.

- a) Ensure the design and fit out of the development is above the 4 star rating under Green Star or 4.5 star rating under the Australian Building Greenhouse Rating system, now part of the National Australian Built Environment Rating System (NABERS), depending on the type of development;
- b) Reduce the use of timber from old growth forests, rainforests and forests/plantations which do not have certified environmentally responsible forest management practices. Applicants need to demonstrate that a significant percentage of the timber and composite timber products used in the building and construction works is from Forest Stewardship Council Certification, utilises reused or recycled timber or is specified using the Friends of the Earth 'Good Wood Guide' 9th Edition; and
- c) Reduce the volume of demolition, construction and fit out waste, including excavation, going to landfill by 76%.

5.4. Hazardous Waste Management

The NSW Environment Protection Authority (EPA) generally regulates the management of hazardous waste. Therefore, any applications that will involve hazardous waste may require a licence or permit from the EPA in addition to approval from Council. Please contact Council or the EPA to discuss the requirements for hazardous waste.

5.5. On-Site Sewage Management

The need to provide on-site sewage management is set out in the 'Infrastructure and Services' Section of this Plan.

The location and design of on-site sewage treatment and disposal is regulated by Council. (See Penrith City Council's *On-site Sewage Management and Greywater Reuse Policy*, 2014).

Please contact the Council to discuss the most suitable on-site sewage management system for your development.

Table of Contents

C6 LANDSCAPE DESIGN	2
6.1. CONTROLS	4
6.1.1. DEVELOPMENT PROCESS	4
6.1.2. PROTECTION OF THE ENVIRONMENT	6
6.1.3. NEIGHBOURHOOD AMENITY AND CHARACTER	10
6.1.4. SITE AMENITY	12
6.1.5. CONSTRUCTION	16

C6 Landscape Design

A. Background

Landscaping can have an impact on the scenic quality of an area. It can complement built forms and enhance the amenity of adjacent spaces and buildings. It can also improve a development's environmental performance in terms of managing water and land impacts.

The process for preparing and submitting landscape designs for development is described in Table C6.1 below. The table also describes the process for the implementation and approval of landscaping works, including the role of landscape design professionals in overseeing and reporting on such works.

Table C6.1

Step No.	Summary	Detail
1	Decision to develop	Determine what landscaping category the proposal falls within.
2	Employment of appropriate landscape professional	Landscape design consultant undertakes design in accordance with the controls outlined in this Section.
3	Lodgement of DA	Development application, including required landscaping information, is lodged with Council.
4	Determination of DA	Council approves or refuses DA.
5	Conditions of consent	If approval is granted, the consent may include conditions relating to one or all of the following issues: <ul style="list-style-type: none">• Requirement for various post approval landscaping reports.• Requirement for a landscaping bank guarantee to be paid.
6	Employment of appropriate landscape contractor to implement proposal.	Approved landscaping works are constructed and implemented in accordance with the consent.
7	Implementation Report	On completion of the landscaping works, an implementation report is to be provided to and approved by Council. This will provide written certification that the works have been completed in accordance with the consent and this section .
8	Occupation certificate	On receipt of an acceptable implementation report and any other non-landscape requirements of Council, the occupation certificate may be issued.

Step No.	Summary	Detail
9	Maintenance Report	A maintenance report is to be provided 12 months after the occupation certificate date. This is to certify that the landscaping works are still in accordance with the consent and that the plant material has established and is thriving.
10	3 year landscaping report	<p>Council may place a condition on consents for larger and more visually prominent developments requiring that a 3 year landscaping report be provided. This report is to be provided 3 years after the issuing of an occupation certificate and is to certify the following:</p> <ul style="list-style-type: none"> • That landscaping has matured and is in accordance with the original landscape approval, or • That landscaping has not matured and is in accordance with the original design philosophy and requires significant restoration. <p>If the latter is the case, restoration plans are to be submitted to Council for approval and implemented at the expense of the property owners.</p>

Legal Qualifier: This Section provides guidance and advice on landscaping and the development process and in some cases minimum acceptable standards which must be met. The provision of this advice, minimum standards and the approval of landscape information with a development application in no way results in Council being legally responsible for the damage that a plant species or landscape element may cause to property or person.

B. Objectives

- To promote landscape design and planning as part of a fully integrated approach to site development;
- To ensure landscape design takes into account the site's context, landscape and visual character, existing landscape features and amenity, both at the local and regional scale;
- To encourage the development of quality landscape design associated with new development that is consistent with industry best-practice;
- To encourage the retention of existing trees and vegetation to enhance landscape character;
- To ensure landscape design adequately complements the proposed built form and minimises the impacts of scale, mass and bulk of the development in its context;
- To encourage landscape design that can be effectively maintained to a high standard for the life of that development; and
- To establish a framework for allowing "Controlled Private Certification" of the landscape design components of new developments.

6.1 Controls

6.1.1. Development Process

1) Development Categories

This section classifies all development in the Penrith local government area into 3 categories (see Table C6.2 below). Each of these categories has different requirements in relation to the landscape design component of the development (i.e. different parts of this section apply to different types of developments).

Table C6.2

Category	Definition
Category 1	<ul style="list-style-type: none">• New single dwelling houses• Alterations and additions to single dwelling houses• Minor alterations and additions to commercial and industrial development as determined by Council• Complying development• Other minor development that in the opinion of Council would not have a significant impact on the amenity of the locality.
Category 2	<ul style="list-style-type: none">• All work below \$2 million that is not listed in category 1• Any development in category 1 which in the opinion of Council would have a significant impact on the amenity of the locality.
Category 3	<ul style="list-style-type: none">• All developments that are above \$2 million in value• Any development that is on a site with significant environmental considerations as determined by Council.• Any development that will have a significant public domain impact as determined by Council.• Any development that involves the alteration or addition to a heritage item or a property in a heritage conservation area.

In Table C6.2, there are several parameters that require an opinion or determination from Council to determine which category applies. In this regard, applicants will need to contact Council's Development Services Department for advice.

2) Submission Requirements

Depending on the type of development proposed, different types of vegetation and landscaping information will be required as part of the development application. Table C6.3 below lists the type of information to be submitted for the various categories of development.

Note: Applicants should also refer to the 'Vegetation Management' section of this Plan where landscaping works involve ringbarking, cutting down, topping, lopping, removing, injuring or wilfully destroying any tree or other vegetation prescribed under that section.

Table C6.3

Required Information	Category 1	Category 2	Category 3
Site Analysis	✓	✓	✓
Tree Survey and Assessment Report/Arboricultural Survey Report	❖	❖	✓
Tree Management Plan	❖	❖	❖
Landscape Concept Plan	❖	✓	✓
Landscape Detail Plan and additional details		❖	✓

✓ Required Information

❖ Information may be required depending on the scale of the project, the site conditions and location. (Please discuss with Council).

- a) Detailed requirements for the information that must be addressed by these reports is set out in Appendix F3 of this DCP. All applicants should review and address these information requirements in their submissions.
- b) If more than one type of information is to be submitted with the development application, it may be appropriate for the information to be combined in the one plan or document. This depends on the scale and complexity of the proposal, and its potential impact on the environment and amenity.
- c) Landscape plans must be prepared by a suitably qualified consultant. Landscape design consultants who are members of accredited organisations should be engaged to ensure professional standards are achieved. Accredited organisations include: Australian Institute of Landscape Architects and Australian Institute of Landscape Designers and Managers.
- d) Landscape construction should be carried out by a qualified landscape contractor to ensure that adequate standards of workmanship are achieved. Landscape contractors who are members of the Landscape Contractors Association of NSW should be engaged where possible.
- e) Development that falls into Category 1 will generally not be required to submit landscaping information; however, landscaping of such development should be designed in accordance with the landscape requirements of this section. In some cases, Council may consider that a proposal in Category 1 warrants a *tree survey and assessment report* (see the 'Vegetation Management' section of this Plan) and/or *Landscape Concept Plan*. If this is the case, this information may be prepared by anyone provided it is of a suitable standard.
- f) On completion of the landscaping works (and prior to an occupation certificate being issued by Council), an *Implementation Report* is to be submitted to Council. This is to provide written certification that the works have been completed in accordance with the consent and the provisions of this DCP (See Appendix F3 for further details).

- g) Twelve months after the date of the occupation certificate, the Implementation Report and the approved landscape design must be submitted with a *Maintenance Report*. This is to certify that the landscaping works are still in accordance with the consent and that the plant material has established and is thriving (See Appendix F3 for further details).
- h) Council may place on consents for larger and more visually prominent developments, a condition requiring that three years after the date of the occupation certificate, an Implementation Report and Maintenance Report and 3 Year Landscaping Report must be submitted (see Appendix F3 for further details). This is to certify one of the following:
 - i) The landscaping has matured and is in accordance with the original landscape approval. (This includes retained vegetation being in good condition); or
 - ii) The landscaping has not matured in accordance with the original design philosophy and requires significant restoration. (This includes retained vegetation declining in condition or has died). If this is the case, restoration plans are to be submitted to Council for approval and implemented at the expense of the property owners.

6.1.2. Protection of the Environment

1) Environmentally Sustainable Design

Council requires that all landscape designs promote best practice Environmentally Sustainable Development principles. Some of these measures are addressed in the controls below and include the following:

- a) Planting deciduous trees - These are best planted on northern and western aspects. This will allow the sun in during winter, and provide shelter from the sun in summer and morning sun year round adding to energy efficiency;
- b) Selecting low water/low maintenance plants, including drought tolerant species;
- c) Planting native or indigenous plants – These plants have lower water requirements and have evolved to cope best with the existing conditions, hence reducing maintenance, fertilising and watering requirements;
- d) Using irrigation systems that utilise drip irrigation systems;
- e) Using recycled and biodegradable products in the landscape design - Such elements could include recycled soils and other hard paving features;
- f) Allowing for composting, mulching and worm farms on site;
- g) Using quality, long lasting materials; and
- h) Using soils and mulches manufactured with recycled waste.

2) Soil Landscapes

Any Landscape Plan or assessment should include a study of the soil profile on the particular site and select plant species accordingly. In this regard, soil landscape maps and accompanying interpretive reports for Western Sydney have been produced (by the former Department of Natural Resources) and may be of assistance.

3) Minimising Soil Erosion

- a) Landscaping works must comply with the 'Erosion and Sedimentation' in the 'Land Management' section of this DCP, including the submission of an Erosion and Sediment Control Plan where required under that section.

- b) Care should be taken when undertaking landscaping works to ensure that soil from the site and any that may be brought to the site is not lost into the drainage system or surrounding environs as this may impact on indigenous flora and fauna and local waterways.
- c) Sediment control measures are to be installed prior to any excavation on site. These measures are to be maintained throughout construction of the landscaping works and until the landscaping is established.

4) Avoidance of Excavation and Filling

- a) Landscape works must comply with the 'Site Stability and Earthworks' controls in the 'Land Management' section of this DCP.
- b) Landscaping works should minimise any earthworks by accommodating the natural landform and utilising designs that require minimal cut and fill, particularly around existing trees to be retained.

5) Conserving Site Soil

- a) Where it is necessary to remove areas of topsoil as a result of cut and fill requirements, this should not be removed from the site but stockpiled in another part of the site for re-use in the landscaping process. This is both beneficial for the environment and saves money.
- b) The following controls apply to topsoil stockpiled on-site:
 - i) Do not store topsoil in any of the tree protection areas (see item 8 below);
 - ii) Ensure that the stockpile is stabilised during the construction period by covering it with hessian, mulch or a cover crop;
 - iii) Ensure that the stockpile will not blow away on windy days by either providing adequate covering or ensuring that it is kept well watered; and
 - iv) Use appropriate sediment and erosion control techniques to ensure that the stockpile is retained and does not leave the site.
- c) The proposed location and management of stockpiles of topsoil should be detailed in the landscape information that accompanies the development application.

6) Species Selection

- a) Plant selection for all landscaping works must consider and will be assessed for its suitability to existing site conditions such as soils, aspect, drainage and micro-climate.
- b) Native species is encouraged for any landscape design.
- c) The use of exotic or introduced species may be considered if they are part of a site's and locality's existing landscape character and there is a low chance of spreading into native bushland.
- d) If a site has remnant native bushland or is located adjacent to native bushland, the plant species that should be used in the landscape design should be those that occur in the bushland, preferably provenance stock.
- e) Species selected should not include those listed in the *Noxious Weeds Act 1993* or on the list of environmental weeds (see Appendix F4 Technical Information to this DCP).
- f) Planting should consist of a variety of trees, shrubs and ground covers to contribute to biodiversity.

7) Bushfire Resistant Species

To determine whether a particular site is 'bushfire prone land', advice should be sought from Council's Development Services Department. In these areas, appropriate landscape design and plant species selection will help reduce the risk of bushfires. While no plant is fire proof or completely fire resistant, some plants are less flammable than others.

Landscape design and plant selection should consider bushfire risk. The recommended list of indigenous species in Appendix F4 has a reference to some plants, which are appropriate to these areas due to their low level of flammability and ability to regenerate after a fire.

8) Protection of Trees and Vegetation on Construction Sites and Adjoining Public and Privately Owned Land

- a) If a Tree Management Plan is required, it must identify the vegetation that is to be retained with the development and how it will be protected during and after construction. Tree protection measures must be in accordance with Australian Standard AS4970-2009 Protection of trees on development sites.
- b) Where existing vegetation is to be retained, that vegetation must be protected from soil compaction, root, trunk and limb damage, soil contamination and changes in surface levels that affect the health of the vegetation.
- c) The Tree Management Plan is to be in place prior to commencement of any site works. "Site works" includes the demolition of existing structures or the entrance onto the site of any machinery for excavation, demolition or large scale rubbish removal. Protection measures are to be installed prior to the commencement of any site work in accordance with Australian Standard AS4970-2009 Protection of trees on development sites.
- d) Trees, vegetation and their root zones on public property and private land adjacent to the development site may also need to be protected during the construction process. A common example of this is the protection of street trees located in the public footpath. These trees and vegetation will also need to be included in the Tree Management Plan and protected in accordance with its recommendations.

9) Vegetation Communities

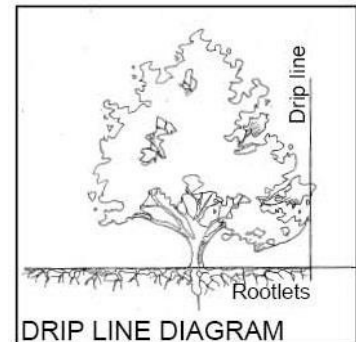
- a) In some cases, there may be sites that contain remnant native vegetation. Where remnant native vegetation exists on a site, a flora and fauna assessment report will be required. (See the 'Vegetation Management' section of this Plan for further details). The purpose of the flora and fauna assessment report is to determine whether the proposed development, including landscaping works, are likely to significantly affect any threatened species, populations or ecological communities or their habitats listed under the *Threatened Species Conservation Act 1995*.

10) Irrigation/Water Consumption

- a) Landscape design should minimise water consumption through selection of indigenous and drought-tolerant species and use of water retaining mulches and soil treatments. It should also include species that can act to establish a micro-climate quickly to assist slower growing species and reduce water consumption.
- b) If additional watering is required, preference is for low water usage irrigation devices, such as drip irrigation systems, during the plant establishment period.
- c) The proposed irrigation system should be detailed in the landscape information submitted as part of the development application.

11) Minimisation of Impervious Surfaces

- a) Where possible, all landscape designs should include permeable paving options. Permeable paving includes the use of permeable/porous paving units, ornamental gravel and paving on a compacted sand bed. The benefits of using permeable paving include:
- i) Ensuring that air and water are available to roots to ensure healthy, secure growth;
 - ii) Providing a safe and stable pedestrian/vehicular surface treatment; and
 - iii) Assisting in the protection and conservation of large, established trees where the root system extends beyond the drip line.
- b) The following minimum areas of permeable surfaces are required to facilitate on-site stormwater infiltration for each land use:
- i) Residential – please refer to controls included in the Residential Development section of this Plan.
 - ii) Industrial - 15% of the site area.



12) Salinity

- a) Landscape designs must take into account the salinity controls in the 'Land Management' section of this Plan.
- b) All landscape designs should consider soil salinity and undertake the following practices:
- i) Select salt tolerant plant species and raise garden beds, ensuring adequate drainage;
 - ii) Use mulch in all garden beds;
 - iii) Minimise the area of lawn as this requires large quantities of water;
 - iv) Use 'water wise' garden design features (including timers, selection of plants with low water needs, grouping plants of similar water usage together, etc);
 - v) Plant native trees and shrubs;
 - vi) Use non-corrosive materials when constructing pipes and channels;
 - vii) Assess current and proposed water storages, artificial lakes and drainage basins as they contribute to groundwater recharge, and minimise where possible;
 - viii) Correct drainage to protect building footings and foundations; and
 - ix) Refer to the Map of Salinity Potential in Western Sydney (DIPNR, 2002) and the accompanying Guidelines for advice on specific ways salinity may affect a particular site.
- c) Soil tests and urban capability mapping are recommended to determine whether salinity is likely to be a problem. If the land is potentially affected by salinity, prevention and monitoring strategies should be employed, such as:
- i) Carrying out soil tests as advised by the Office of Environment and Heritage;
 - ii) Ensuring adequate drainage is located away from buildings and associated infrastructure to avoid ponding;
 - iii) Connecting roof drainage to stormwater systems, rather than sillage pits;
 - iv) Monitoring changes in water table levels and groundwater quality by installing piezometer ('monitoring bore') networks;

- v) Avoiding over-watering of lawns and gardens;
- vi) Selecting plants with low water requirements and applying mulch; and
- vii) Checking and repairing water leaks as soon as possible.

13) Materials Selection

- a) Landscaping works must comply with the controls relating to the use of sustainable materials in the 'Waste Management' section of this Plan.
- b) The use of recycled and biodegradable products is preferred in landscape design, such as recycled on-site soils and recycled hard landscaping materials.

6.1.3. Neighbourhood Amenity and Character

1) Landscape Character

- a) Landscape design should reinforce the identified natural attributes of the site including, but not limited to, watercourses, landmark elements, landforms, views and vistas, significant trees, vegetation patterns and historic buildings.
- b) Remnant native vegetation should be retained, managed and incorporated into landscape designs to conserve the natural biodiversity across the landscape.
- c) Landscape design should enhance the amenity and visual quality of the site. Landscaping solutions are to be used to screen and enhance visually obtrusive land uses or building elements within their setting.

2) Integration of Design

- a) All landscape and building designs should be complementary and aim to achieve similar design outcomes. The design of both buildings and landscaping should utilise the same site analysis drawings and concepts. In this way, the site will be developed with a building design and a landscape design that deliver the best possible development solution for the owners and the community.

3) Streetscape

- a) All sites make a contribution to the streetscape by way of the design of any structures or vegetation. Therefore, any landscape submission must include an assessment of the streetscape.
- b) Generally, Council requires that dominant positive streetscape elements are to be continued in the design of any landscaping works to ensure that the development integrates into and enhances the existing streetscape character. Features that contribute to the existing streetscape include:
 - i) Street trees and vegetation;
 - ii) Pavement materials/details;
 - iii) Architectural character;
 - iv) Setbacks of buildings and other structures;
 - v) Existing uses, e.g. residential/retail/industrial;
 - vi) Heritage items;
 - vii) Traffic – vehicular and pedestrian;

- viii) Car parking – off street, on street, access, etc;
 - ix) Privacy;
 - x) Building heights, mass, material and colour;
 - xi) Links with other spaces;
 - xii) Street dimensions/scale – street width, verge and path treatments;
 - xiii) Lighting;
 - xiv) Maintenance issues, e.g. rubbish collection, letterboxes;
 - xv) Landscape style; and
 - xvi) Street furniture, fences, gates and signage.
- c) Some elements of landscape design and streetscape that should be implemented include the following:
- i) Landscape design should be used to soften the impact of buildings and as a visual element between the street and the development;
 - ii) Fencing that is forward of the building line should be incorporated with the landscape and consistent with that in the street or locality;
 - iii) Landscape design should be used to soften the impact of car parking areas; and
 - iv) In open car parking areas, one large shade tree for every 6 car spaces is to be provided as a minimum to improve visual amenity and reduce the heat island effect.

4) Community Safety

- a) Landscape designs must comply with the safety and crime prevention controls in the 'Site Planning and Design Principles' section of this DCP.
- b) All landscape designs should promote the safety of the community through the maximisation of natural surveillance and appropriate lighting. Such measures include the following:
 - i) Appropriate levels of lighting of public spaces such as driveways, gardens and links through the site;
 - ii) Appropriate lighting and visibility of the entry to dwellings;
 - iii) Provision of appropriate plant species that minimise opportunities for concealment of intruders and do not provide hidden recesses;
 - iv) Dwelling entries that are visible from the street or other public areas;
 - v) Fences or planting that allow glimpses or overview of the street, private courtyards and other open space areas;
 - vi) At driveways, street intersections and other crossing points, landscaping that does not block views between pedestrians and approaching vehicles; and
 - vii) Landscaping that does not prevent surveillance of car parking areas.

5) Fencing and Retaining Walls

- a) Landscape designs must comply with fencing controls required by this DCP.
- b) Fencing and retaining walls are an important part of any landscape design and can alter the style and character of the development and the streetscape. Considerations when designing fencing or screening include:

- i) Rights of access;
 - ii) Community safety;
 - iii) Design;
 - iv) Aesthetics;
 - v) Existing vegetation;
 - vi) Boundaries, easements and emergency access routes - these are not to be compromised;
 - vii) Materials and size relative to the proportions, scale and character of the street, surrounding buildings and landscape; and
 - viii) Maintenance issues to avoid graffiti and vandalism, and life cycle cost (i.e. considering the cost of a product over its entire life span).
- c) Retaining walls are to be kept to a minimum to reduce earthworks. See the 'Land Management' section of this DCP for requirements for excavation and filling.
 - d) All retaining walls are to be constructed of masonry or concrete material. Timber retaining walls are not permitted.
 - e) Development involving earthworks and retaining walls need to have regard for the amenity of any adjoining/surrounding properties and natural flow of water across the land. See Council's *Stormwater Drainage Specification for Building Developments*.

6) Planting on Structures

- a) Landscape designs that propose planting on structures will require a Landscape Concept Plan which must outline how the area of planting on structures will be maintained for the life of the development.

7) Buffer zones

- a) Where buffer zones are provided to help minimise land use conflicts, they must be densely planted in accordance with the requirements of this section of the DCP, using generally native or indigenous species. Council requires that these buffer areas be fully maintained continuously, with failed plants and trees to be replaced immediately with new plantings of the same species.

6.1.4. Site Amenity

1) Contextual Design

- a) Landscape designs should seek to screen development, particularly from the sides and rear of an allotment.
- b) Landscape design should be used to highlight architectural features, define entry points, indicate direction, and frame and filter views into the site. Landscape design should also be responsive to the bulk and scale of the development.
- c) Shrubs and small trees should be used to screen service areas and block unwanted views that reduce privacy.
- d) Plantings should be of advanced species except where it is demonstrated to Council's satisfaction that semi-advanced stock is more suited to soil and/or plant characteristics.
- e) Landscape design should ensure that plantings when mature will not conflict with structures and services.

2) Open Space Requirements

- a) The amount of open space is crucial to the landscape design. This amount will vary depending on:
 - i) The use proposed on the site;
 - ii) The requirements of the occupants;
 - iii) Character of the neighbourhood;
 - iv) Requirements in other sections of this DCP;
 - v) Retention of mature/significant trees/vegetation; and
 - vi) Whether the space is a private or public space.
- b) Communal space/recreational facilities must be located and designed to avoid nuisance or danger to neighbours, residents and visitors. Consideration should be given to the type of activities to be undertaken, hours of use, noise generation and on-going maintenance and safety of the space/recreational facility. Consideration should also be given to:
 - i) Separating conflicting activities (e.g. play spaces away from driveways); and
 - ii) Including equipment such as seating, shade structures and children's play equipment.
- c) Communal open space should generally have access only from within the site. Communal open space for multi dwelling housing should be accessible from all dwellings within the development. Surveillance of this space should be possible from at least 2 dwellings.
- d) The design of a development should maximise solar access to all open spaces.
- e) Trees should be selected and located to regulate solar access to buildings. Deciduous trees are best planted on northern and western aspects to allow solar penetration in winter and shade in summer.

3) Deep Soil Zones

- a) Landscape design should maximise the area of a deep soil zone, especially around existing trees to provide sufficient soil depth for roots.
- b) The following minimum areas for a deep soil zone are required for each land use:
 - i) Residential - please refer to controls included in the Residential Development section of this DCP;
 - ii) Industrial - 10% of the site area.

4) Equal Access

- a) In accordance with the Federal *Disabilities Discrimination Act 1992* and the NSW *Anti Discrimination Act 1977*, and all relevant Australian Standards, the following design elements must be considered when designing any landscape projects to ensure equal access for people with disabilities:
 - i) Pedestrian routes;
 - ii) Tactile warning strips with a strong contrast to adjoining paving;
 - iii) Stairways/steps;
 - iv) Landings;

- v) Ramps;
- vi) Handrails;
- vii) Seating;
- viii) Lighting;
- ix) Signage
- x) Luminance contrast of street and park furniture.

5) Heritage

- a) Landscape designs must comply with any relevant requirements of the 'Culture and Heritage' section of this DCP.
- b) If a site is listed as a heritage item or is within a heritage conservation area, a heritage impact statement may be required. The landscape design is to retain any natural, cultural or architectural features that are essential to the conservation of the heritage significance of the place. The landscape design should respect the importance of these heritage features, be of a sympathetic style and form, and should be influenced by any relevant heritage landscape evidence.

For more information contact Council's Development Services Department.

6) Noise, Vibration and Dust Reduction

- a) Where appropriate, all landscape designs are to incorporate landscape techniques to act as a barrier or buffer to reduce dust, noise and vibration levels from adjoining activities. Examples include fencing and planting adjacent to driveways and the like which can contribute to noise attenuation.

7) Location of Utility Services

The location of utility services, such as gas and electricity, can significantly impact upon existing vegetation and locations for proposed vegetation. As such, the following requirements are applicable:

- a) Common trenching for compatible underground services should be maximised to reduce repeated disturbance to established plantings.
- b) Overhead cabling of services should be placed in allocated easements.
- c) Selected plant species should not obstruct or interfere with infrastructure facilities having regard to:
 - i) The mature height of trees and shrubs beneath overhead services; and
 - ii) The root growth of trees and shrubs and underground services.
- d) Services should be located away from existing and proposed vegetation and their root zones.

8) Utility Areas

- a) Waste and recyclables storage facilities should be located behind the building line and not adjacent to communal outdoor seating/recreation areas.
- b) The storage area is to be suitably screened.

- c) Outdoor clothes drying facilities are to be hidden from the street.

9) Landscaping and Above Ground On-Site Stormwater Detention

- a) Landscape works must comply with the stormwater management and drainage requirements in the 'Water Management' section in this DCP.
- b) All landscape works are to include provision for adequate drainage including collection or dispersal of stormwater runoff, prevention of ponding of water on pavements or discharge of runoff onto adjoining properties or public areas.
- c) Above ground detention structures should be suitably landscaped to improve the visual amenity of the development.
- d) Detention structures should be suitably integrated into the landscaping for the whole site, including common open space areas. Ideally, such structures should appear as a feature as opposed to an engineered structure or element.
- e) Plant species used in these areas must be capable of withstanding periodic inundation and must not impact upon the functioning of the area as a detention structure.
- f) Where above ground storage of detained water is proposed, the landscape design will be required to accommodate this through the following:
 - i) The maximum allowable depth of ponding in residential areas is 300mm, and in industrial/business areas is 1.2m;
 - ii) Subsoil drainage is to be installed around the outlet to prevent the area remaining saturated during wet weather;
 - iii) The maximum batter slope around a landscaped area is to be 1 in 4, with 1 in 6 being preferable;
 - iv) Mulching with wood or bark chip in storage areas subject to inundation in more frequent storm events (i.e. up to and including the 20% Annual Exceedance Probability (AEP) storm) is not considered desirable. Weedmat or similar should be used in these areas;
 - v) Those areas of the basin subject to inundation up to and including the 5% AEP storm are to be turfed. Trees may be planted in the turfed area. Shrubs and/or groundcovers may be planted above the 5% AEP water level; and
 - vi) Careful consideration should be given to the types of planting within the basin to ensure the area can be maintained and the storage volume is not reduced to an unacceptable level. If substantial planting is proposed within the basin, the storage volume is to be increased to accommodate this. Refer to the Landscape Technical Specifications in Appendix F4 Technical Information for a plan relating to some of the above details.

10) On-Site Effluent Disposal and Landscaping

- a) As sewer is not available to some areas of Penrith, some developments may need to consider on-site effluent disposal, and in particular, land application areas for the disposal of treated effluent. If this is the case, specific vegetation will be required that can cope with this treated effluent. Appendix F4 provides a list of species which are appropriate for such land application areas. Additional requirements for on-site sewage management are included in the 'Infrastructure and Services' section of this DCP.

11) Car Wash Bays

- a) Where appropriate, landscape designs should incorporate an area with a permeable surface where a car can be washed.
- b) The car wash bay may be turfed or gravel and should prevent contaminants from entering the stormwater system.

6.1.5. Construction

All landscaping construction is to meet the minimum 'Landscape Technical Specifications' in Appendix F4 Technical Information to this DCP.

C. Lifting the Bar

The following represent some ways in which applicants can demonstrate additional commitment to the landscape principles expressed in this DCP. Demonstration of this commitment may lead to Council considering variation of development controls. Applications that vary the development controls listed in this section will need to demonstrate that the proposed development complies with the objectives relevant to the development controls it seeks to vary.

- a) Landscape irrigation/watering systems should, where possible, utilise recycled grey-water/stormwater or water from on-site detention systems to avoid use of potable drinking water for this purpose; and
- b) 'Greening' of all suitable roof spaces in order to reduce energy needs for cooling and create more sustainable roof designs.

D. Other Information

It is recommended that applicants seeking to address this issue also refer to other relevant information including:

- Centre for Architectural Ecology - Collaborations in Green Roofs and Living Walls: BCIT School of Construction and the Environment at <http://commons.bcit.ca/greenroof/case.html>
- Green Roofs Australia at <http://greenroofs.wordpress.com/>
- Penrith City Council's *Landscape Character Strategy* (2006)
- Penrith City Council's *Sustainability Blueprint for urban release areas* (June 2005)
- SEDA: Solar Access for Lots, Available at www.energysmart.com.au/brochures/Solar_Access_for_Lots_Guide.pdf.

Table of Contents

C7 CULTURE AND HERITAGE	2
7.1. EUROPEAN HERITAGE	4
7.1.1. DETERMINING THE IMPACT ON HERITAGE SIGNIFICANCE	4
7.1.2. HERITAGE ITEMS	4
7.1.3. HERITAGE CONSERVATION AREAS	6
7.1.4. DESIGN GUIDELINES	6
7.1.5. DEVELOPMENT IN THE VICINITY OF A HERITAGE ITEM OR CONSERVATION AREA	10
7.1.6. ARCHAEOLOGICAL SITES	10
7.1.7. POTENTIAL HERITAGE ITEMS	11
7.1.8. DEMOLITION	11
7.1.9. ARCHIVAL RECORDING	12
7.1.10. BUSINESS, OFFICE AND RETAIL BUILDINGS	12
7.1.11. CONSERVATION INCENTIVES AND FEE CONCESSIONS	13
7.2. ABORIGINAL CULTURE AND HERITAGE	14
7.3. SIGNIFICANT TREES AND GARDENS	17

C7 Culture and Heritage

A. Background

Overview of Controls

This DCP applies to 'heritage items', 'heritage conservation areas' and 'archaeological sites' listed in Schedule 5 of Penrith Local Environmental Plan (LEP) 2010. It also applies to land within the vicinity of heritage items and heritage conservation areas. In addition, the DCP applies to Aboriginal places of heritage significance and land on which Aboriginal objects are located. (Penrith LEP 2010 includes the definitions of these terms). This section of the DCP supplements Penrith LEP 2010, particularly clause 5.10 Heritage conservation, by providing controls to manage the heritage of Penrith City.

Controls include guidelines to conserve the heritage significance of the natural and built environment and ensure new development is sympathetic with the identified heritage values. The controls address design, streetscapes, site planning, fences, gates and landscaping. Heritage controls aim to ensure that future development takes place in a way that does not detract from the heritage values of the Penrith area.

Heritage Significance

The concept of heritage significance is based upon an idea that a building, relic or place may have historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance for past, present and future generations. The Heritage Council has established widely accepted criteria to be used in ascertaining heritage significance. An item or area will be considered to be of heritage significance if it meets one or more of the following Heritage Council criteria:

- 1) **Criterion (a):** An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area);
- 2) **Criterion (b):** An item has strong or special association with the life or works of a person, or a group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area);
- 3) **Criterion (c):** An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);
- 4) **Criterion (d):** An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons;
- 5) **Criterion (e):** An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);
- 6) **Criterion (f):** An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);
- 7) **Criterion (g):** An item is important in demonstrating the principal characteristics of a class of NSW's (or the local area's):
 - 1) Cultural or natural places; or
 - 2) Cultural or natural environments.)

It is important to note that a heritage building does not have to be completely intact or in good condition for it to be of heritage significance. Rather, it is the building's ability to demonstrate the above criteria and historical themes that is important.

Before any alterations or new works are proposed to a heritage item or within a conservation area there must be a thorough understanding of its heritage significance. Once this is known

decisions about the future of the site, such as new works, can be more easily and appropriately determined.

The concept of heritage significance is explained more fully in the Australia ICOMOS (International Council on Monuments and Sites) Burra Charter, 2013 and the document entitled 'Assessing heritage significance' prepared by the NSW Heritage Office, 2001.

B. General Objectives

- a) To promote the wise management, development and conservation of the heritage assets of Penrith;
- b) To conserve the environmental heritage of Penrith;
- c) To conserve the heritage significance of the existing fabric, relics, settings and views associated with heritage items and heritage conservation areas;
- d) To ensure that alterations, additions and infill development are sympathetic and respectful of the values of the heritage place;
- e) To promote the protection of places which have the potential to have heritage significance but are not identified as heritage items, places or heritage conservation areas;
- f) To ensure that the heritage conservation areas throughout Penrith retain their heritage significance;
- g) To provide guidance on the range and application of available conservation incentives;
- h) To control the demolition of heritage items and archivally record a heritage place in circumstances of demolition;
- i) To ensure archival records of heritage items and potential heritage places are undertaken in certain circumstances to a prescribed standard; and
- j) To ensure that proposals for development of environmental heritage are undertaken in a sustainable and appropriate way that conserves its values.

C. Other Information

People seeking further information on heritage places or preparing development applications may wish to refer to the following:

- 1) Penrith City Council - *Heritage Study Volume 2: Thematic History May 2006* prepared by Paul Davies Pty Ltd
- 2) Penrith City Council - *Heritage Study Volume 3: Locality Profiles November 2007* prepared by Paul Davies Pty Ltd
- 3) *The Burra Charter* (Australia ICOMOS, 2013)
- 4) *Assessing Heritage Significance* (NSW Heritage Office, 2001)
- 5) *How to carry out work on heritage buildings and sites* (NSW Heritage Office, 2002)
- 6) *Statements of Heritage Impact* (NSW Heritage Office and Department of Planning, 1996)
- 7) *Local Government Heritage Guidelines* (NSW Heritage Office, 2002).
- 8) *Conservation Management Documents* (NSW Heritage Office and Department for Planning, 2002).
- 9) *Maintenance Series*, NSW Heritage Office.

7.1. European Heritage

A. Background

Heritage provides both physical and cultural links to a locality's identity and assists in the creation of a sense of place and community. Heritage items are an integral part of Penrith's setting and need to be protected for the benefit of future generations. European heritage includes built items and relics, areas of conservation value due to past associations and natural environments.

7.1.1. Determining the Impact on Heritage Significance

- a) Where a proposed development could affect the heritage significance of a heritage item or heritage conservation area, the applicant is required to lodge a *Heritage Impact Statement* or *Conservation Management Plan* (as required).
- b) A proposed development could affect the heritage significance of a heritage item or heritage conservation area if it is either in that item, place or conservation area or it is in the vicinity of that item, place or conservation area.
- c) Impact on a heritage item, place or conservation area can include, but is not limited to:
 - i) Affecting the item, place or area itself;
 - ii) Affecting a significant view to or from the item;
 - iii) Affecting the setting or heritage curtilage, including any landscape or horticultural features of the item;
 - iv) Overshadowing of the item;
 - v) Affecting the form of any historic subdivision pattern;
 - vi) Undermining or otherwise causing physical damage to the item; or
 - vii) Otherwise having an adverse impact on its heritage significance.
- d) A Heritage Impact Statement or Conservation Management Plan must be prepared by a qualified Heritage Consultant.
- e) A Heritage Impact Statement must address the issues set out in this section of the DCP and the Submission Requirements for applications in Appendix F3 of this DCP.

7.1.2. Heritage Items

A. Background

Heritage items comprise buildings, sites, places, archaeological sites and landscapes of both State and local significance, and are identified on the State Heritage Register and/or in Schedule 5 of Penrith LEP 2010.

Any proposals for development involving a heritage item must achieve a reasonable balance between protecting the heritage significance of the item and adaptation to meet amenity and contemporary needs.

B. Objectives

- a) To encourage the retention of existing heritage items and their significant elements;
- b) To ensure development is based on the understanding and conservation of the heritage significance of the item;

- c) To encourage heritage items to be used for purposes that are appropriate to their heritage significance;
- d) To maintain the setting of the heritage item including the relationship between the item and its surroundings;
- e) To encourage the removal of inappropriate alterations and additions, and the reinstatement of significant missing details and building elements; and
- f) To protect and conserve built heritage in accordance with the principles of the Burra Charter.

C. Controls

1) Development Application

- a) Any Heritage Impact Statement for development that may impact on a heritage item must address the following (at a minimum):
 - a) The heritage significance of the item as part of the environmental heritage of Penrith;
 - b) The impact that the proposed development will have on the heritage significance of the item and its setting, including any landscape or horticultural features;
 - c) The measures proposed to conserve the heritage significance of the item and its setting;
 - d) Whether any archaeological site would be adversely affected by the proposed development;
 - e) The extent to which the carrying out of the proposed development would affect the form of any significant subdivision pattern; and
 - f) The issues raised by any submission received in relation to the proposed development in response to the notification or advertising of the application.
- b) Development of a heritage item must:
 - a) Be consistent with an appropriate Heritage Impact Statement or Conservation Management Plan;
 - b) Be consistent with the information on the State Heritage Inventory for that heritage item;
 - c) Protect the setting of the heritage item;
 - d) Retain significant internal and external fabric and building elements;
 - e) Retain significant internal and external spaces;
 - f) Remove unsympathetic alterations and additions;
 - g) Reinstall missing details and building elements; and
 - h) Use materials, finishes and colours that are appropriate to the significant periods of development or architectural character of the item.
- c) Alterations to the room layout of heritage items are to ensure that the original room configuration remains discernible and can be interpreted.
- d) If there is any likelihood of an impact on any significant archaeological relics from a period prior to the current building, development must ensure that the impact is managed according to the assessed level of significance of those relics.

7.1.3. Heritage Conservation Areas

A. Background

In some instances, individual built or landscape items are not listed, but rather a heritage conservation area is listed. Heritage conservation areas are listed in Schedule 5 of Penrith LEP 2010.

Each conservation area is important for different reasons and therefore any changes which are proposed must take into account the nature of the heritage significance of the particular area (embodied in its statement of significance found on the State Heritage Inventory).

B. Objectives

- a) To ensure that any development within a heritage conservation area is compatible with the important or significant characteristics of the conservation area as a whole.

C. Controls

- 1) Any Heritage Impact Statement for development that may impact on a heritage conservation area must address the following (at a minimum):
 - a) The heritage significance of the heritage conservation area and the contribution which any building, work, relic, tree or place affected by the proposed development makes to this heritage significance;
 - b) The impact that the proposed development would have on the heritage significance of the heritage conservation area;
 - c) The compatibility of any proposed development with nearby original buildings and the character of the heritage conservation area, taking into account the size, form, scale, orientation, setbacks, materials and detailing of the proposed development;
 - d) The measures proposed to conserve the significance to the heritage conservation area and its setting;
 - e) Whether any landscape or horticultural features would be affected by the proposed development;
 - f) Whether any archaeological site would be adversely affected by the proposed development;
 - g) The extent to which carrying out of the proposed development would affect any historic subdivision pattern; and
 - h) The issues raised by any submission received in relation to the proposed development in response to the notification or advertising of the application.
- 2) New development within a heritage conservation area is to be sited and designed so as not to adversely impact upon the existing or original landscape and spatial qualities of the area.
- 3) New buildings are to complement existing buildings of significance with respect to bulk, scale and façade geometry, and be of a simple, contemporary design that avoids 'heritage style' replication of architectural or decorative detail.

7.1.4. Design Guidelines

A. Background

This section provides guidance to applicants for any proposed development associated with heritage items. It is for guidance only and not intended to be prescriptive. The individual

circumstance of the heritage place will influence the design solution. Applicants are strongly advised to seek professional advice from a heritage architect to create a site responsive design solution.

B. Objectives

- a) To conserve and maintain established setbacks to streets;
- b) To ensure adequate curtilage and landscape setting for the item;
- c) To ensure the integrity of the heritage item and its setting, or the conservation area, is retained by the careful siting of new buildings and alterations and additions to existing buildings;
- d) To ensure that the subdivision of land on which a heritage building is located does not isolate the building from its setting or context, or adversely affect its amenity or privacy;
- e) To ensure that the development of land or a building in the vicinity of a heritage item is undertaken in a manner that complements the heritage significance of the site;
- f) To ensure that new development is carefully sited so as to avoid causing physical damage to any heritage item especially where sited within the same curtilage as the heritage item;
- g) To ensure that new development, including alterations, additions, extensions, additional buildings or structures, are designed to minimise any potential impacts to adjoining heritage items;
- h) To protect the heritage significance of heritage items and items within heritage conservation areas;
- i) To conserve and protect significant items of European heritage that are located in the industrial areas of the City;
- j) To prevent the demolition of heritage items or items within heritage conservations areas; and
- k) To ensure that new development located within the curtilage of a heritage item is in keeping with the context and setting of the heritage item.

C. Controls

1) Site Planning

Any new development should be positioned to ensure that the visual prominence, context and significance of the existing heritage item and its setting are maintained.

Front and side boundary setbacks are a major contributor to the character and significance of a heritage item or heritage conservation area. Existing patterns should be maintained in new development to continue the established rhythm of buildings and spaces.

- a) Development should conform to the predominant front setbacks in the streetscape.
- b) Development should respect side setbacks and rear alignments or setbacks of surrounding development.
- c) Front and rear setbacks should be adequate to ensure the retention of the existing landscape character of the heritage item or conservation area and important landscape features.
- d) Any significant historical pattern of subdivision and lot sizes is to be retained. Subdivision or site amalgamation involving heritage items or contributory buildings should not compromise the setting or curtilage of buildings on or adjoining the site.

2) Alterations and Additions

This section includes general provisions for alterations and additions to heritage items.

- a) Single storey additions may comprise the following forms:
 - i) Linked pavilions;
 - ii) Attached wings;
 - iii) Detached pavilions; and
 - iv) Attached L-shaped wings.
- b) Additions should not extend beyond side boundary setbacks.
- c) Attached additions shall have wall indentations to clearly separate the old from the new and articulate wall length.

3) Subdivision and Site Analysis

The subdivision of land upon which a heritage building is located has the potential to isolate the building from its setting thereby reducing its cultural or historical significance.

The setting of a heritage building is often referred to as the curtilage and may include the immediate garden, mature trees, original allotment boundaries, paddocks, fencing, outbuildings, archaeological sites, views/vistas or any other feature or space which allows a greater understanding of its historical context. The curtilage is therefore essential for retaining and interpreting the heritage significance of that building.

- a) Proposals for subdivision should define an appropriate setting or 'curtilage' for the heritage building as part of the Heritage Impact Statement or Conservation Management Plan.
- b) In determining the curtilage of a heritage building, consideration is to be given to the following:
 - i) The original form and function of the heritage building: The type of structure that constitutes the heritage building should be reflected in the curtilage. For example, it may be appropriate that a larger curtilage be maintained around a former rural homestead than that of a suburban building;
 - ii) Outbuildings: A heritage building and its associated outbuildings should be retained on the same allotment; and
 - iii) Gardens, trees, fencing, gates and archaeological sites: Features that are considered valuable in interpreting the history and in maintaining the setting of a building should be identified and, where possible, retained within the curtilage.
- c) New development shall be of a scale and form that does not detract from the historical significance, appearance and setting of the heritage item. In this way, the following elements require specific consideration:
 - i) The height of new development near heritage items shall be less than the subject item. Increases in height shall be proportional to increased distance from the items and will be considered on merit;
 - ii) Views and vistas to the heritage item from roads and other prominent areas are key elements in the landscape and shall be retained;
 - iii) If the development site can be viewed from a heritage item(s), any new development will need to be designed and sited so that it is not obtrusive when it is viewed from the heritage item(s); and
 - iv) Curtilages shall be retained around all listed items sufficient to ensure that views to them and their relationship with adjacent settings are maintained.

4) Gardens, Landscaping and Fencing

In many circumstances it is important to protect, not only the heritage item or conservation area itself, but also the land around it which contributes to its setting, therefore enhancing its heritage significance.

Curtilages shall be established by evaluating the components of a site relative to the building. Key aspects of a property's curtilage include any gardens, entrances, fencing and outbuildings.

The curtilage shall maintain the relationship between these elements so as to allow the heritage item and its site to be understood. As a result, these elements shall be used in determining a suitable curtilage and shall be retained where suitable.

- a) In order to preserve and maintain an appropriate scale and the visual prominence of a heritage item, the building height of new development shall generally not exceed that of the original heritage item. New development or large additions or alterations must provide a transition in height from the heritage item.
- b) Development proposals, which involve large scale redevelopment and alteration to the original character of the heritage item and will negatively impact on the heritage significance of the curtilage, will not be permitted.
- c) The colours and materials used in a new development (whether an extension or addition) should complement the colours and materials of the heritage item. New development within the curtilage must not adversely impact upon the significant fabric of a heritage item.
- d) Where possible, existing fences that have been identified as significant or that contribute to the overall setting or character of a heritage item are to be retained or repaired, rather than replaced.
- e) New fences should either match as closely as possible the original fencing, or if the original fence type is not known, specifically relate to the architectural character and period of the existing heritage item with respect to design, materials, colour and height. Old photographs or careful inspection of remaining fabric can often reveal the original fence type.
- f) New development shall not be sited in front of the front building line of the existing heritage item nor shall it extend beyond the established side building lines of the heritage item.
- g) New development within the same curtilage as a heritage item shall generally not be larger in scale than the heritage item. Reference shall be made to the building height of the heritage item as the maximum permissible building height of alterations or additions.
- h) Vegetation around a heritage item shall be assessed for its value to the item and retained where required.

5) Garages and Carports

This section includes general provisions for garages and carports on properties containing heritage items.

- a) Garages and carports may comprise the following forms:
 - i) Double garage or carport at the rear of the lot; and
 - ii) Carport set behind the building line at the side of a dwelling.
- b) Garage and carport roof forms will depend on the setting and context of the property.
- c) Carports are appropriate beside a dwelling. They are to be flat roofed with fringing pergola elements which suggest a garden structure form.

7.1.5. Development in the Vicinity of a Heritage Item or Conservation Area

A. Background

A development in the vicinity of a heritage item or a heritage conservation area must be assessed to determine whether it will have any impact on the significance and visual setting of that item or conservation area.

B. Objectives

To ensure that the development of land or a building in the vicinity of a heritage item or heritage conservation area is undertaken in a manner that complements the heritage significance of the site or area.

C. Controls

- 1) A Heritage Impact Statement shall be lodged with a development application for buildings or works in the vicinity of a heritage item or heritage conservation area. This clause extends to development that:
 - a) May have an impact on the setting of a heritage item or conservation area, for example, by affecting a significant view to or from the item or by overshadowing; or
 - b) May undermine or otherwise cause physical damage to a heritage item; or
 - c) Will otherwise have any adverse impact on the heritage significance of a heritage item or any heritage conservation area within which it is situated.
- 2) The following issues must be addressed in the Heritage Impact Statement:
 - a) The impact of the proposed development on the heritage significance, visual curtilage and setting of the heritage item;
 - b) Details of the size, shape and scale of, setbacks for, and the materials to be used in, any proposed buildings or works; and
 - c) Details of any modification that would reduce the impact of the proposed development on the heritage significance of the heritage item.

7.1.6. Archaeological Sites

A. Background

This section of the DCP provides guidance to applicants regarding development that involves archaeological sites. For the purposes of this section an archaeological site means the site (as listed in Schedule 5 – Environmental Heritage of Penrith LEP 2010) of one or more relics.

B. Objectives

- a) To ensure that development is undertaken in a manner that acknowledges and protects sites of archaeological significance.

C. Controls

- 1) Any application which proposes the disturbance or development of an 'archaeological site' listed in Schedule 5 – Environmental Heritage of Penrith LEP 2010 is to undertake an archaeological assessment and to submit that assessment as part of the Heritage Impact Statement or Conservation Management Plan.

- 2) The archaeological assessment is to:
 - a) Evaluate the probable extent, nature and integrity of the site and determine its significance;
 - b) Define appropriate management measures for the site having regard to its significance; and
 - c) Is to be prepared in accordance with guidelines contained within the document entitled "Assessing Significance for Historical Sites and 'Relics'" (Heritage Branch, Department of Planning, 2009).
- 3) Where the development or disturbance of an archaeological site is proposed, the applicant will be required to liaise with the Heritage Division of the Office of Environment and Heritage to ensure any related statutory requirements of the *Heritage Act, 1977* are complied with prior to the submission of the development application. For example, any proposal to disturb or excavate land which will or is likely to result in a relic (whether or not that relic is listed as an archaeological site under Penrith LEP 2010) being discovered, exposed, moved, damaged or destroyed requires an excavation permit to be obtained from the Heritage Council (Heritage Division of the Office of Environment and Heritage).
- 4) If relics are discovered during construction or operation, works should cease immediately and the Heritage Division contacted. At that time, the Heritage Division may request an archaeological assessment before any further work can commence.

7.1.7. Potential Heritage Items

A. Background

This section provides guidance to applicants wanting to lodge an application that involves a building, relic or structure that is more than 50 years old.

B. Objectives

To protect buildings that may have heritage significance, but are not listed in Schedule 5 – Environmental Heritage of Penrith LEP 2010.

C. Controls

- 1) Where it is proposed to develop or demolish a building, relic or structure not listed in Schedule 5 – Environmental Heritage of Penrith LEP 2010 that is older than fifty years, Council may require the submission of a Heritage Impact Statement that addresses those issues referred to in Clause 5.10 of Penrith LEP 2010 or in this DCP, so as to enable it to fully consider the impact of the development upon the significance of the building, relic or structure.

7.1.8. Demolition

A. Background

While a key objective of heritage conservation is the preservation of heritage items, occasionally, there will be circumstances where it is not possible to preserve a heritage item on its original site, and where applications for demolition are received.

Applicants must demonstrate that all possible options for retention of the heritage item have been exhausted prior to applying for a demolition permit, and that if a demolition permit is issued, the item will be adequately documented, made available for salvage and commemorated, where appropriate.

B. Objectives

- a) To ensure that adequate consideration is given to the significance of a heritage item and any alternative options, where the demolition of a heritage item is proposed.

C. Controls

- 1) The demolition of a heritage item is contrary to the intent of heritage listing and is considered a last resort option that will only be considered where:
 - a) All other alternatives have been investigated and ruled out;
 - b) It can be satisfactorily demonstrated that the item does not satisfy the criteria for listing established by the NSW Heritage Council, nor provide physical evidence of one of the historical developmental themes established by the Penrith Heritage Study; or
 - c) The structure is considered incapable of repair.
- 2) Where consent is issued for demolition, a comprehensive diagrammatic and photographic archival record is to be made of the structure to be demolished (refer to 7.1.9). This must be undertaken to Council's satisfaction prior to commencement of any demolition works.

7.1.9. Archival Recording

Archival Recording Requirement

Council shall require an archival recording as a condition of development consent for development involving the demolition or partial demolition of a heritage item or a place within a heritage conservation area.

Standard of Recording

The minimum standard for preparing archival records is available from the Heritage Division of the Office of Environment and Heritage (please refer to the documents entitled 'How to Prepare Archival Records of Heritage Items' and 'Photographic Recording of Heritage Items Using Film or Digital Capture'). A heritage consultant experienced in preparing archival records should be engaged to undertake this task.

Deferred Commencement Consent

A development consent issued by Council for the demolition or partial demolition of a heritage item or a place within a heritage conservation area shall be in the form of a deferred commencement. This is to ensure that the archival recording is completed to Council's satisfaction before the consent becomes operable.

7.1.10. Business, Office and Retail Buildings

A. Background

Due to the prominent function that frontages can play for the economic viability of business, office and retail premises, they are frequently subject to pressures for alteration. Where unsympathetic alterations occur to the ground floor frontages of heritage items used for business, office and retail premises, these can result in the loss of an integral element of their character or heritage significance.

B. Objectives

- a) To retain and conserve the heritage significance of heritage protected business, office and retail buildings; and

- b) To protect the distinctive and characteristic elements of business, office and retail buildings and ensure the integration of these features into subsequent uses.

C. Controls

- 1) Ornamental parapet detailing (such as pediments, urns and finials) are important elements of business, office and retail heritage items as they help to establish what period they were erected in. As such, their removal negatively impacts on the architectural significance of such buildings and is not permitted.
- 2) Structural alteration of interior features of heritage protected business, office and retail buildings is not permitted without prior consent from Council.

7.1.11. Conservation Incentives and Fee Concessions

A. Background

In recognition of the needs of heritage items, Council provides conservation incentives to help conserve Penrith's heritage for the community's benefit.

B. Objectives

To provide incentives to owners/applicants for development applications involving heritage items.

C. Controls

- 1) Subclause 5.10(10) 'Conservation incentives' of LEP 2010 allows Council to consider an application for the use for any purpose of a building that is a heritage item or within a heritage conservation area even though the use would otherwise not be permitted under the LEP. In assessing such an application, Council shall consider the matters listed in this subclause, and may require a detailed long term maintenance plan for the building.

Fee Concessions

An applicant may apply, in writing, to Council to have fees refunded (partially or fully) for a development application, construction certificate or building compliance certificate for approved development for buildings or works to a heritage item or a place within a heritage conservation area under the following circumstances:

- 1) Sympathetic restorations, alterations and additions to original buildings used for residential purposes;
- 2) Sympathetic restorations, alterations and additions to original buildings to accommodate community facilities, home activities and home businesses; or
- 3) Sympathetic restorations of non-building places.

Requests for application fee refunds will be assessed in accordance with the following criteria:

- 1) Overall scale of the development;
- 2) Compliance with a development consent and any consent conditions;
- 3) Compliance with a construction certificate and any consent conditions;
- 4) Compliance with the provisions of this section;
- 5) Conservation of the original building fabric and landscape elements; and
- 6) Any other relevant heritage conservation matter.

Other Concessions

In relation to an application for the use for any purpose of a building that is a heritage item or within a heritage conservation area, an applicant may apply in writing to Council to have waived the following contributions or requirements associated with undertaking an approved development:

- 1) Section 94 Developer Contributions under the *Environmental Planning and Assessment Act 1979*;
- 2) On-site car parking requirements; or
- 3) Other development requirements of Council which ordinarily would be applied to the type of proposal.

To obtain a concession, applicants will need to demonstrate that their development proposal will:

- 1) Ensure the long-term conservation and management of the heritage values of the building or place;
- 2) Result in the conservation of the original building fabric, landscape elements or archaeological resources;
- 3) Ensure that the concession sought maintains the public interest and that the development proposal will on balance result in a net public benefit; and
- 4) Not result in any significant adverse impacts on the amenity of adjacent properties or the surrounding environment.

Requests to obtain a concession will be assessed on their merits and reported to Council for determination.

7.2. Aboriginal Culture and Heritage

A. Background

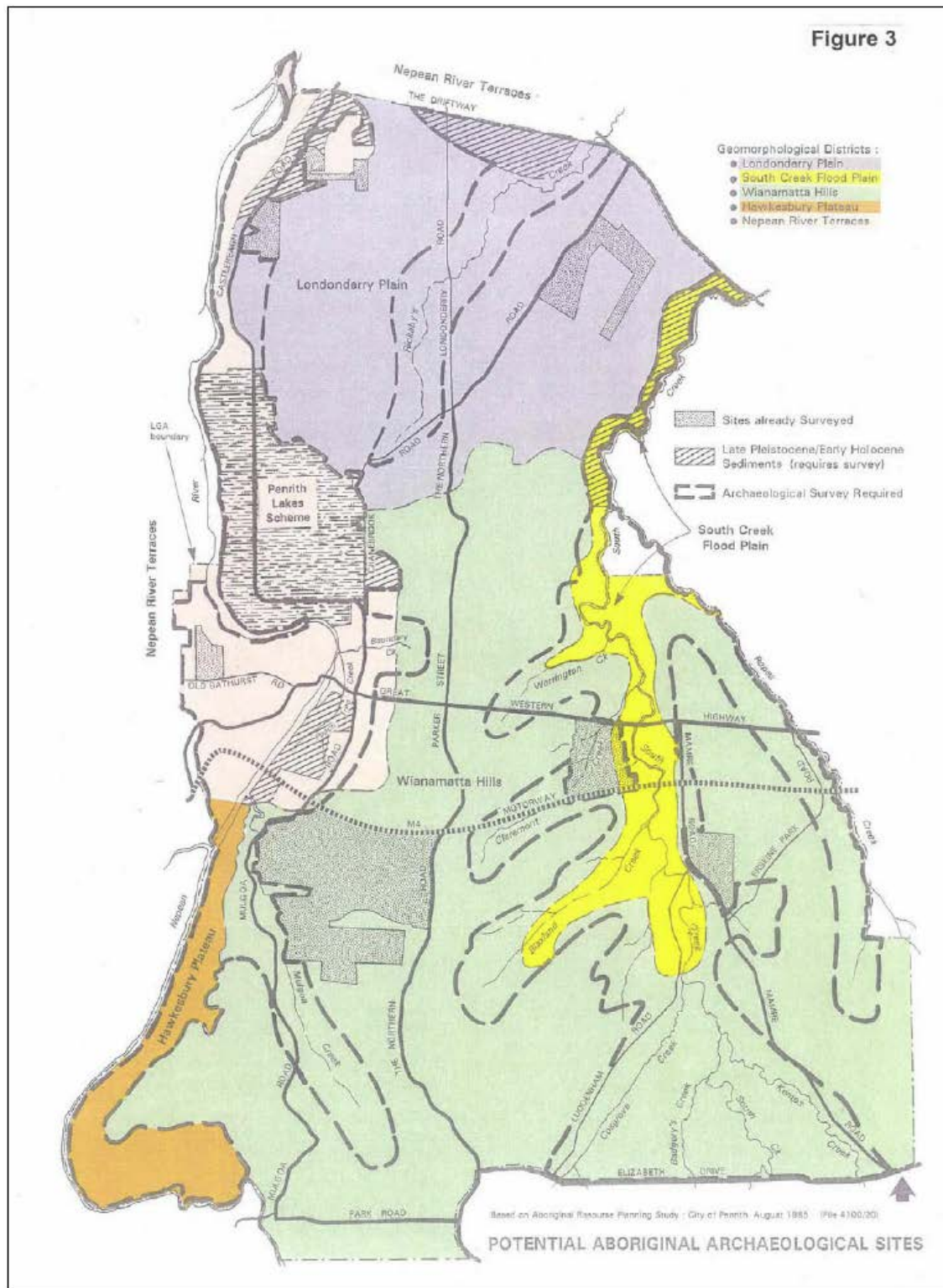
Aboriginal heritage consists of objects and places that are of significance to Aboriginal people because of their traditions, observances, lore, customs, beliefs and history. It may comprise of physical or non-physical elements. For example, it includes items made and used in traditional societies, such as stone tools, art sites and ceremonial or burial grounds, as well as more contemporary items such as places of spiritual importance. 'Aboriginal object' is defined in Penrith LEP 2010. Aboriginal places are areas of land that have no Aboriginal objects, but instead have special significance to Aboriginal culture because of their spiritual, natural resource usage, historical, social, educational or other type of significance.

Aboriginal people are the cultural owners and managers of information about their heritage. Aboriginal culture has existed for over 50,000 years. Aboriginal people have strong spiritual and cultural ties with places throughout NSW. It is vital to indigenous people that these important spiritual and cultural links to land are maintained. This is achieved by continuing traditional practices and beliefs and preserving and protecting places of cultural significance. It is equally important that indigenous heritage and culture is properly recognised and preserved.

Given Penrith's history of Aboriginal settlement, some land within the City may have archaeological potential. It is important to preserve and/or record any remaining archaeological resources.

Figure C7.2 depicts which parts of the City have the potential to be archaeologically sensitive.

Figure C7.2



The Office of Environment and Heritage keeps a register of notified Aboriginal objects and declared Aboriginal places in NSW. This register is called the Aboriginal Heritage Information Management System (AHIMS). Applicants can search AHIMS to determine if an Aboriginal object has been recorded, or an Aboriginal place declared, on a parcel of land.

As indicated in Figure C7.2, surveys for Aboriginal objects have not been done in many parts of the City. Aboriginal objects may therefore exist on a parcel of land even though they have not been recorded in AHIMS.

Aboriginal heritage should be considered in any site selection and site analysis. The site analysis should identify the more obvious items, such as landforms, scarred trees and middens, and establish their significance.

At the planning and design stage, more detailed survey work may need to be undertaken, especially in areas where minimal disturbance by agriculture or other previous land uses has occurred. In some cases, an archaeological investigation may be necessary. The purpose of the archaeological investigation is to learn about past human societies through the study of material remains and historical, oral and environmental sources. The 'Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW' specifies the minimum standards for such an investigation. It is also likely that information will also need to be sourced from the Local Aboriginal Community. (See 'Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010').

If Aboriginal items are present on the site, the development should be designed, wherever possible, to ensure there is no disturbance or impact on their significance or setting. In areas where there has been minimal disturbance, items may not be noticed or evident until site works commence. If Aboriginal items are discovered during construction or operation, works should cease immediately and the Office of Environment and Heritage contacted. Prior to further disturbance occurring to Aboriginal items, an approval will be required from the Office of Environment and Heritage.

B. Objectives

To preserve items and sites of Aboriginal archaeological significance located within the City of Penrith.

C. Controls

- 1) If the development, including subdivision, but not strata subdivision, is on land identified as potentially archaeologically sensitive, an archaeological investigation is required with the development application. The Office of Environment and Heritage should be contacted for advice on survey needs and requirements.
- 2) Despite (a) above, an archaeological assessment is required if the site area is 5 hectares or more. The archaeological assessment should determine whether or not Aboriginal archaeological resources are present on the site, and where appropriate, identify management principles to be implemented.
- 3) The requirements stated in (a) and (b) above will not apply to developments where there is no:
 - a) disturbance of the soil, or
 - b) construction works on the land. For the purposes of this section, any internal or external works to an existing building is not deemed to be construction work.

7.3. Significant Trees and Gardens

A. Background

Major components of our heritage are the trees and gardens found throughout the City of Penrith. This vegetation contributes markedly to a greater understanding of the history and development of the City.

Penrith LEP 2010 provides protection to significant trees and gardens located within Penrith from unsympathetic or indiscriminate development. Applicants should consult with Council's Tree Management Officer for advice.

B. Objectives

- a) To promote greater public awareness of the significant trees and gardens in the City of Penrith;
- b) To ensure that existing and future landowners are made aware of the significant trees and gardens, which may be located on their properties;
- c) To ensure that development adjacent to and in the vicinity of any significant tree or garden does not affect the ongoing viability of that tree or garden; and
- d) To ensure that those qualities intrinsic to the significance of a garden be retained and protected from unsympathetic future development.

What is a Significant Tree or Garden?

The significance of trees or gardens may be determined by an assessment in line with the following broad categories:

- Cultural significance;
- Historical significance;
- Scientific significance;
- Aesthetic significance.

Cultural Significance

The cultural value of a tree, garden or natural vegetation community may:

- mark important cultural town features such as reserves, showgrounds and stockyards;
- reflect different periods in a towns development.

Historical Significance

Trees or gardens may be of significance when associated with important eras, buildings, events or people and fall within the following categories:

- an example of a specific era of landscape design;
- association with historic buildings;
- commemorate an important historical event;
- plantings which were the result of famous persons.

Scientific Significance

Trees or gardens may be valuable for a range of scientific reasons. These may include trees or components of gardens that are poorly known, rare, vulnerable or endangered species.

Aesthetic Significance

Trees or gardens are of aesthetic significance if they comprise important features in a townscape, screen unattractive buildings or are exceptionally beautiful. Aesthetic qualities of trees or gardens include qualities of flower, colour, shape, fragrance, texture, shade or seasonal qualities.

These broad categories may be further refined into more specific categories including:

- 1) Any tree notable for its height, trunk circumference or canopy spread;
- 2) Any tree associated with Aboriginal activities;
- 3) Any tree or garden that occurs in a unique location or context and so provides a contribution to the landscape;
- 4) Any tree of a species or variety that is rare or of very localised distribution;
- 5) Any tree of horticultural or general value that could be an important source of propagating stock;
- 6) Any tree which exhibits a curious growth form.

C. Controls

Owner's Responsibility

If a tree, or trees, has been identified as significant, the owner or any person proposing to do any work on that defined area has the following responsibilities:

- 1) The owner shall not ringbark, cut down, top, lop, or wilfully destroy any tree, except with the consent of Council.
- 2) Development in the vicinity of a significant tree or garden should not result in the destruction or damage of that tree or garden.
- 3) The owner of any property, which has a tree or garden located on the site, should take into consideration the significance of the tree or garden and design development accordingly.

Table of Contents

C8 PUBLIC DOMAIN	2
8.1. PEDESTRIAN AMENITY	3
8.2. STREET FURNITURE	6
8.3. LIGHTING	7
8.4. OUTDOOR DINING AND TRADING AREAS	8
8.5. PUBLIC ART	16

C8 Public Domain

A. Background

The public domain comprises the shared urban area and spaces, the structures that relate to those spaces and the infrastructure that supports and serves them. Penrith's public domain includes:

- The space/area that is publicly owned and commonly accessed/used by the community without restriction (e.g. parks and public squares, road verges);
- Spaces on private property that invite public access and use (e.g. connections within a site, hotel lobbies);
- Contested spaces where an ebb and flow naturally occurs between the public and a private activity (e.g. outdoor eating and/or trading areas); and
- Private spaces that are visible but physically inaccessible to the general public.

The public domain incorporates elements such as footpaths, street furniture, including signage and lighting, vegetation, fences, bridges, artworks, amenities and seating.

In general, the controls in this section relate primarily to commercial areas or areas where there is a high degree of interaction between the public domain and the private domain.

Additional provisions relating to public domain in the St Marys Town Centre are contained in the St Mary section of this Plan. There are also provisions relating to public domain in the Penrith City Centre in Penrith City Centre section of this Plan.

B. General Objectives

- a) To enhance the quality of the public domain;
- b) To enhance the natural setting and landscape character of Penrith;
- c) To ensure that the public domain is attractive, safe, interesting, connected, comfortable, readily understood and easily accessed;
- d) To ensure that the public domain is enhanced by the built form adjoining it; and
- e) To ensure that the principles of Universal Design are considered when designing the public domain.

C. Controls

Design Principles

Public access (either physically or visually) to the public domain is to be maximised by incorporating one or a combination of the following design elements:

- 1) The location of building entrances and glazing should provide natural surveillance to the public domain without compromising passive solar design principles;

- 2) The built form should provide, where it is appropriate, a visual transition to the public space by avoiding continuous lengths of blank walls and high fences at the interface between the public and private space;
- 3) Views into and from the public domain are to be protected as they increase opportunities for natural surveillance. Where appropriate, ground floor areas abutting public space should be occupied by uses that create active building fronts with pedestrian flow, and contribute to the life of the streets and other public spaces; and
- 4) Accessibility should be provided for all members of the community, particularly those with a disability, and should occur across all areas of the public domain. This includes designing for durability, adaptability, maintenance and replacement.

D. How to Use this Section

This DCP is a multi-layered document. It is important to appreciate the overlap between the public domain and other inter-related issues addressed in this DCP including, but not limited to, the remaining sections in Part C of this DCP. Part D relates generally to land uses/activities while additional provisions may apply to sites located in a key precinct (as listed in Part E of this DCP).

8.1. Pedestrian Amenity

A. Background

Pedestrian amenity incorporates all those elements of individual developments that directly affect the quality and character of the public domain. The pedestrian amenity provisions are intended to achieve a high quality of urban design and pedestrian comfort in those spaces that are publicly accessible. The pedestrian environment should provide a wide variety of opportunities for social and cultural experiences.

These controls apply to all business zones, recreation zones and to industrial sites where a high level of pedestrian activity is expected. They also apply to the RU5 Village zone.

B. Objectives

In addition to the general objectives for Public Domain, the objectives of this section are to:

- a) Encourage future links through sites at ground level, as new development occurs;
- b) Improve the permeability of large sites when they are redeveloped for more intensive uses;
- c) Ensure active street frontages address the street that will promote pedestrian activity, safety and passive surveillance in the public domain;
- d) Ensure that all forms of personal mobility, excluding cycling and cars, are considered when designing access routes;
- e) Ensure the provision of awnings and street furniture to facilitate pedestrian movement;
- f) Identify the location for and encourage provision of street tree planting in the City; and

- g) Ensure that landscaping, public art and place-making principles have an integrated approach and are incorporated in the design of the public domain.

C. Controls

1) Active Street Frontage and Address

Active street frontages promote an interesting and safe pedestrian environment, while buildings that address the street contribute positively to the streetscape.

- a) Active street frontages are to be located on the ground/street level of all buildings, being one or a combination of the following:
 - i) A shop front or entrance to a retail premises or public building with the entrance visible from the street;
 - ii) A café or restaurant, if accompanied by an entry from the street;
 - iii) Active office uses, such as a reception area, if visible from the street; or
 - iv) Activation of the secondary frontage of a corner site; e.g. continuing glazing around the corner.
- b) Glazed entries to commercial or residential lobbies are to occupy less than 50% of the street frontage and have a maximum frontage of 12m. The remainder of the street frontage is to be active.
- c) Active street frontages are to be at the same level as the adjoining footpath and directly accessible from the street.
- d) 'Street address' is defined as:
 - i. Entries, lobbies and habitable rooms that have clear glazing to the street not more than 1.2m above the street level, not including car parking areas; and
 - ii. That are located on the ground level of buildings; and
 - iii. Have direct 'front door' access into the building.
- e) Opportunities to establish active street frontages and/or street address may be specifically identified in a number of locations in key precincts within the City (refer to Part E of this DCP).

2) Permeability

'Through site links' provide access connections between the long sides of street blocks for pedestrian and vehicular access at street level, resulting in a more permeable pedestrian environment along laneways, shared zones, arcades and pedestrian paths.

- a) Through site links for pedestrians are to be designed with accessible paths of travel that are:
 - i) A minimum width of 4m for the full length and clear of any obstruction, including columns, stairs etc.;
 - ii) Direct and fully publicly accessible thoroughfares for pedestrians; and

- iii) Open-air for the full length, with active street frontages or a street address at all ends.
- b) Arcades are to be an accessible path of travel that:
 - i) Have a minimum width of 4m for the full length, clear of any obstruction, including columns, stairs etc.;
 - ii) Are direct and publicly accessible thoroughfares for pedestrians during business/trading hours;
 - iii) Have active frontages on either side for the full length;
 - iv) Where practicable, have access to natural light for at least 30% of the length;
 - v) Where enclosed, have clear glazed entry doors to at least 50% of the entrance; and
 - vi) Where security gates are in operation, designed to be visually permeable.
- c) Lanes are to be designated pedestrian routes that:
 - i) Are accessible paths of travel, with a minimum width of 6m for the full length and clear of any obstruction; and
 - ii) Appropriately lit and sign-posted to indicate the street(s) to which the lane connects.
- d) Opportunities to increase a site's permeability, particularly in the form described above, should be provided:
 - i. for sites comprising 5 hectares or more in area; or
 - ii. at locations identified in particular Key Precincts under this DCP.
- e) The principles of Crime Prevention through Environmental Design (CPTED) (as identified in Site Planning and Design Principles Section of this Plan) should be incorporated into a site's permeability to create a safe and secure environment and encourage activity along these areas.

3) Awnings

Awnings increase the useability and amenity of footpaths, including the pedestrian linkages within the public domain, by providing weather protection to pedestrians. As a feature, awnings provide an interface between the public domain and buildings in the same way as entrances into buildings.

- a) Awnings should be an integral component of new developments (including alterations and additions) and where appropriate, stepped to accommodate sloping streets.
- b) Awning dimensions should generally be:
 - i) Set back from the face of the kerb to allow for clearance of street furniture including street trees;

- ii) A minimum depth of 2.8m where street trees are not required, otherwise a minimum depth of 2.4m; and
- iii) A minimum soffit height of 3.2m and maximum 4m.
- c) For corner sites, awnings are to wrap around the building up to 6m along the secondary street frontage.
- d) Awnings are to be provided at specific locations identified within key precincts in the City (refer to Part E – Key Precincts of this DCP).
- e) The provision of under awning lighting should be recessed into the soffit of the awning or mounted to the building façade to facilitate pedestrian movement at night and improve public safety.
- f) Where the awning is to encroach over the road reserve, including the footpath, a separate approval to erect the awning over the road reserve is to be obtained under the *Roads Act 1993* and the *Local Government Act 1993*.

4) Landscape in the Public Domain and Street Tree Planting

Landscaping plays an integral role in streetscape character and contributes significantly to the amenity of an area. Street tree planting can improve legibility in the urban environment by reinforcing the hierarchy of streets and enhancing a sense of place. The placement of trees and landscaping generally affects light and shadow, colour and views, and contributes to the quality of the pedestrian experience.

The controls in this section apply to all industrial and commercial zones, and to the RU5 Village zone.

- a) The landscape design for the development should incorporate the public domain, including those areas of the site not physically accessed but visible from the street and other locations.
- b) Street trees should not compromise water and energy conservation measures or the accessibility, safety and security of the development and public domain.
- c) Street trees are to be shown on the landscape plan and should include details of the species and be appropriate to the streetscape. Required street trees for the public domain must be at an advanced growth stage, minimum 25 to 45 litre pot size and generally a minimum of 1.5m in height.
- d) Landscape plans accompanying the development application will be required for certain types of development.

8.2. Street Furniture

A. Background

Furniture should provide a good level of amenity and useability without causing clutter. Where other elements such as built form, street trees, lighting or public art define the character of the street, furniture should take second place.

Certain areas of the City are strategically important or unique, allowing for custom designed or individually selected furniture.

B. Objectives

In addition to the general objectives for Public Domain, the objectives of this section are to:

- a) Provide street furniture that improves the amenity and streetscape of the City; and
- b) Ensure that street furniture considers the principles of Universal Design, where relevant.

C. Controls

- 1. The location and design of street furniture and paving shall take into account the needs of people with a disability, particularly where it abuts the building's elevations (shorelining).
- 2. Where appropriate, the design of street furniture may be an expression of public art.
- 3. The design and selection of materials should be low maintenance and resistant to graffiti and vandalism.
- 4. Street furniture should respond to and enhance the visual character of the streetscape and the public domain.
- 5. Secure bicycle parking is to be included in the public domain and should be conveniently located.

8.3. Lighting

A. Background

Lighting plays a vital role in crime prevention and personal safety, encouraging night-time activity in places that are lit.

These controls apply to all commercial and industrial areas, and to land zoned RU5 Village.

B. Objectives

In addition to the general objectives for Public Domain, the objective of this section is to provide lighting that improves the amenity and public domain of the City.

C. Controls

- 1. Council's adopted Public Lighting Policy and the implementation of an energy efficient lighting system should be incorporated into any design. Other factors for consideration of the design and location of lighting are:
 - a. The location of all entrances into the building and its relationship to the street and public domain;
 - b. The future uses of the public domain, particularly those sections that will be used at night, to ensure appropriate levels of visibility;

- c. The location and type of vegetation within the public domain;
 - d. The likelihood for vandalism of the lighting and its maintenance requirements;
 - e. The appropriateness of movement sensitive and diffused lights at specific locations; and
 - f. Potential for lighting spillage onto neighbouring properties as this can cause nuisance and reduce opportunities for natural surveillance (refer to AS 4282 Control of the obstructive effects of outdoor lighting).
2. As a minimum, the requirements of AS 1158 Lighting for roads and public spaces should be used for street lighting. AS 1158 may also be used for the lighting of pathways, laneways and access routes provided the lighting design allows:
- a. A wide beam of illumination to reach the beam of the next light, or the perimeter of the site or area being traversed; and
 - b. The faces of users travelling along the path/laneway/arcade up to a distance of 15m are clearly illuminated.

8.4. Outdoor Dining and Trading Areas

A. Background

This section of the DCP applies to outdoor dining or trading areas that require development consent from Council. If an outdoor dining area is proposed with a food and drink premises, the development application will need to comply with the provisions of this section relating to an outdoor dining area. Similarly, if an outdoor trading area is proposed with retail premises (not including a retail premises retailing in firearms, restricted premises or sex services premises), the development application will need to comply with the provisions of this section relating to an outdoor trading area.

Outdoor dining areas on private land and land owned or managed by Council that are not Exempt under the *State Environmental Planning Policy (Exempt and Complying Development)* 2008 require consent and should consider the following Objectives and Controls.

On land owned or managed by Council, that is Exempt and Community Classified, an Outdoor Dining Permit is required under Council's Outdoor Dining Policy.

B. Objectives

In addition to the general objectives for Public Domain, the objectives of this section are to ensure that:

- a) The outdoor dining area operates in conjunction with a food or drink premises;
- b) The outdoor trading area operates in conjunction with a retail premises (but not a retail premises retailing in firearms, restricted premises or sex services premises);
- c) Outdoor dining or trading areas do not obstruct pedestrian movement, the function of the public domain or access into buildings;
- d) The outdoor dining area does not appear to privatise the public domain.

- e) The furniture provided in association with outdoor dining or trading areas does not pose a hazard to pedestrians or patrons.
- f) Outdoor trading areas contribute to street amenity and landscape character.

C. Controls

1) Outdoor Dining or Trading Area

Distance from Street Furniture and Surrounding Uses

- a) The arrangement and location of the outdoor dining or trading area should consider the location of an existing street furniture and services, including the circulation path that will be required between the outdoor area and associated premises/buildings. A location map, drawn to scale, is to be submitted with the development application showing the location of:
 - i. The proposed outdoor dining or trading area;
 - ii. All existing street furniture and services, such as seating, bins, service pits, telegraph poles, bus stops (including associated seating) and the like; and
 - iii. The main entrance to the premises associated with the outdoor dining or trading area.
- b) Minimum distances must be provided to street furniture or services that have been provided by authorities other than Council. The setback between the street furniture and the outdoor dining or trading area is to allow sufficient access and clearance for pedestrians and to the street furniture/services. The minimum distances are provided in Table 1.
- c) The outdoor dining or trading area must not:
 - i. Intrude into the frontage of another premises without approval from adjoining landowners;
 - ii. Encroach or obstruct access to another premises; or
 - iii. Interfere with the circulation of pedestrians around the frontage of the adjacent premises.
- d) Any existing Council-provided street furniture may be relocated at the applicant's expense. Any request to relocate furniture should be detailed in the development application.

Table 1: Summary of numeric standards for outdoor dining areas

Minimum footpath width	3.5m
Minimum unobstructed footpath width	2.0m
Minimum distance of tables & seating / display stands from:	
Doorway of the premises	0.5m
Post box	1.5m
Phone box	1.5m

Pedestrian crossing	3.0m
Bus stop (including associated seating)	3.0m
Taxi stand	3.0m
Other utilities	Sufficient to provide access for maintenance and repair.
Hours of operation	7.00 am – 10.00 pm OR as specified in the existing approval
Eating areas	
Minimum height for separation barrier	0.6m
Maximum height of separation barriers	0.9m

Owner's Consent to Occupy Land

The owner's consent must be obtained to locate the outdoor dining or trading area on the land, including land owned or managed by Council (such as the footpath area of the road reserve). This consent must accompany the development application submitted to Council.

If outdoor trading areas are to be located on Council land, including the footpath, you should also refer to the section below entitled "Trading Areas located on land owned or managed by Council".

Approvals

Copies of outdoor dining and trading approvals are required to supplement any development application.

Outdoor Dining

NSW legislation sets out the following approvals required for a premise to have outdoor dining:

- a) Outdoor dining on the public footway requires an approval under the Roads Act 1993.
- b) Outdoor dining on community land, such as a park or reserve requires approval under the Local Government Act 1993.
- c) Outdoor dining that is on Crown land requires an approval under the Crown Land Management Act 2016.

Outdoor Trading

Approval under the Roads Act 1993 is also required for use of a public road, including footpaths, for outdoor trading (street vending).

This enables Council to ensure that the position of the outdoor trading or dining area will not endanger passing pedestrians or vehicles. Where Council owns a footpath, it also enables Council to control the use of the footpath or the space above or below a road.

2) Outdoor Dining Areas

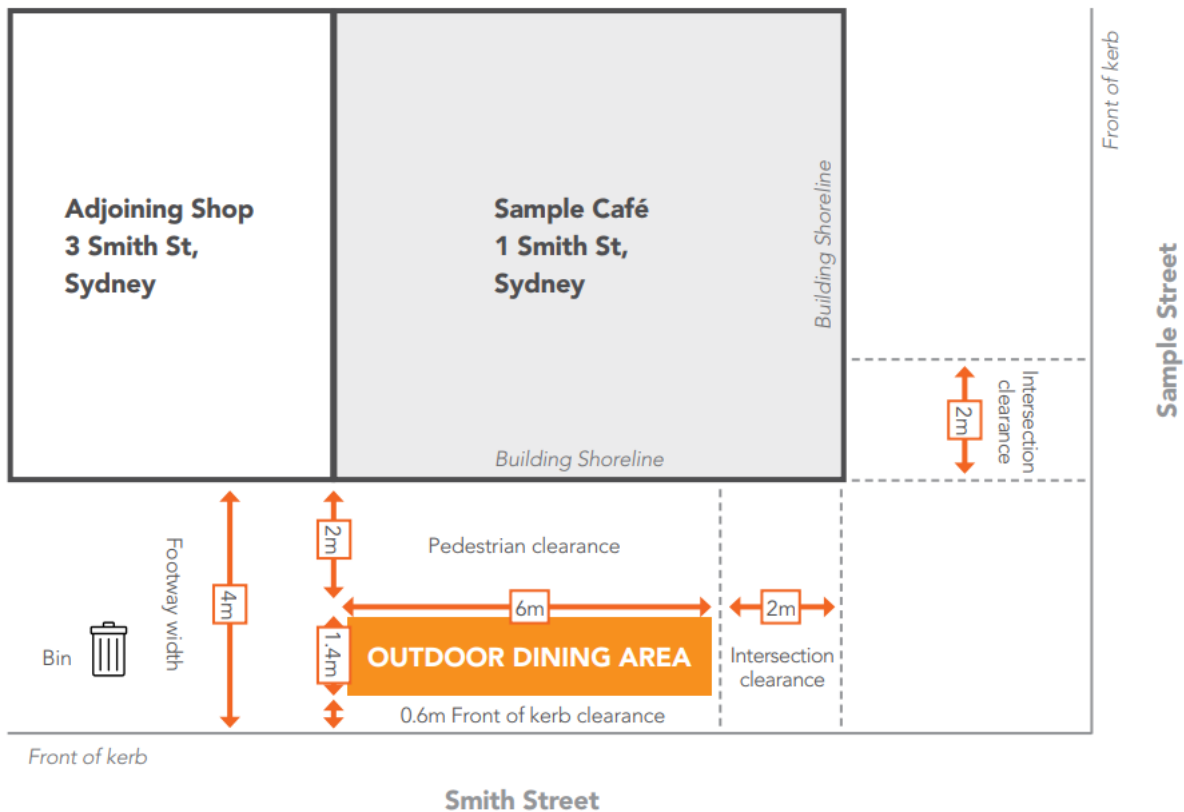
- a) The outdoor dining area must operate in conjunction with a food and drink premises including hours of operation. Where alcohol is to be sold or served within the outdoor dining area, the liquor licence issued for the food and drink premises must include this area.
- b) The outdoor dining area must be located in that part of the public domain that is immediately in front of the food and drink premises.
- c) If the outdoor dining area is located wholly within the development site and:
 - i. The floor area of the outdoor dining area exceeds 30m²; or
 - ii. The furniture is fixed to the ground (unable to be removed at the close of each operating day);

The floor area occupied by the outdoor dining area will be included in the calculation for the total floor space of the food and drink premises. This will be used for the purposes of calculating car parking and amenities (including parenting facilities) only.

- d) The outdoor dining area must:
 - i. Be set back a minimum of 1.8 metres from the building to provide unobstructed continuous clearance along the building shoreline. In those circumstances where there is insufficient width to accommodate kerbside dining, Council may consider alternative arrangements where it can be demonstrated that access and safety for all users of the space (including pedestrians, employees and customers) can be accommodated.
Shoreline means the property or natural building line where the building recedes. There should be no obstructions or projections from this line in order to provide the best possible guidance line for all users. People who are blind or vision impaired use what is known as 'overlining' to way find or navigate the transport environment. This process involves the use of a long white cane to sweep in a sideways arc to detect tactile surfaces and features to maintain a direction of travel and/or to identify hazards.
 - ii. Not be on land that is used for vehicular access, circulation or parking, or a designated loading/unloading area;
 - iii. Not be immediately in front of an ingress/egress, including fire exist(s);
 - iv. Be set back from street furniture;
 - a. Where an outdoor dining area is located forward of the building line, a clear distance of at least 1.8 metres must be maintained adjacent to the seating area for pedestrian circulation, exclusive of any obstruction or street fixture.
 - b. Where an outdoor dining area is located behind the building shoreline, pedestrian circulation arrangements will be considered on merit.
 - v. The preferred location for furniture in an outdoor dining area is away from the building edge. This preferred configuration is shown in figure C8.1 below. Alternative configurations can be considered based on their merit and the principles contained in this DCP. The merit assessment will also depend on the space available and other relevant site constraints.
 - vi. Provide a predictable clear path of travel and be consistent along the same part of the footway for the length of the block.

- vii. Not cause obstruction to any existing access points to shops, arcades and pedestrian access ways.
- viii. Present an open, inviting image and be easily accessible from the public way. Full height and solid screens and any type of enclosure including public screens, are not permissible. Direct physical contact with the outdoor environment is an integral part of the experience and a safe, amenable microclimate can be created through proper siting and furniture layout.

Figure C8.1: Preferred configuration for outdoor dining areas



- e) The outdoor dining area must be:
 - i. Defined by a barrier that is of sturdy construction and is a minimum of 60cm high with no sharp edges or protruding feet that may cause a trip hazard to pedestrians or patrons; and
 - ii. Complimentary in colour to the seating.
- f) If waiter service is not provided, a bin must be placed where it is visible to patrons in the outdoor dining area and is positioned so it does not cause an obstruction to pedestrians.
- g) No food is to be prepared or stored outside. No hot food counters, boilers or urns shall be placed on public areas or areas external to the premises.
- h) The area must maintain a neat and tidy appearance at all times. This includes ensuring furniture is clean and well maintained, and that the area is not left in disarray after patrons have departed.

Furniture in Outdoor Dining Areas

- a) Overhead structures for weather protection may be placed in the outdoor dining area so long as they:
 - i. Are a minimum height of 2 metres, have vents at the pinnacle to reduce wind loading and are appropriately anchored (if anchored on the ground and the outdoor dining area is located on Council land including the footpath, then this will require Council approval by lodging a Road Reserve Opening Permit);
 - ii. Are set back a minimum of 0.6 metres from the face of the kerb;
 - iii. Do not overhang the carriageway or obstruct pedestrians; and
 - iv. Do not present potential trip hazards. That is, they use flat plate anchor bases rather than raised types.
- b) The following furniture may be located in the outdoor dining area subject to Council approval:
 - i. Heating appliance(s), either movable or affixed; and
 - ii. Shade structure(s), including umbrella(s), which require anchoring on the ground.

In this regard, details of the:

- i. Type, number and location of the heating appliance(s);
- ii. Dimensions, location and appearance, including materials, of the shade structure(s); and
- iii. Where any furniture is temporarily anchored to the ground, the anchoring system;

are to be submitted with the development application. Applicants need to apply for a Road Reserve Opening Permit prior to any opening being made in the footpath surface in a road reserve.

- c) If the furniture is not affixed to the ground, the furniture must be put away inside the premises when it is closed. No furniture is to be left outside when the food and drink premises is closed.

Design of Furniture

- a) Furniture must be of sturdy construction and suitable for outdoor use. Furniture must be of high structural and aesthetic quality and must be kept clean and well maintained. Furniture in general and seats should be of metal frame construction and so as not to move in strong winds. Domestic style plastic furniture will not be permitted.
- b) Applicants should select a colour scheme for outdoor furniture that complements the streetscape character.
- c) Outdoor furniture should make a positive contribution to the street environment. A furniture style that is durable, high quality and uniform appearance that integrates well within the surrounding streetscape is required.

- d) Outdoor furniture must be compatible with the existing urban character, heritage and street quality and function.

Signage in Outdoor Dining Areas

- a) Signage may be permitted on umbrellas or barriers only. Signage must include only one business name or product which is a core part of the business and is supplied by the restaurant to its customers.
- b) The name of the premises may be displayed on any boundary furniture that defines the outdoor dining area, or umbrellas only.
- c) The name, logo and other branding of the food or drink premises or an associated product may be placed on an umbrella or barrier only if it:
 - i. Is as a minor and ancillary element of the design, comprising no more than one third of the surface area; and
 - ii. Does not have an adverse impact on the appearance of the seating area of the streetscape.
- d) No incidental advertising including A-frame signs will be permitted.

3) Outdoor Trading Areas

- a) The outdoor trading area must operate in conjunction with a retail premises, including hours of operation, (provided it is not a retail premises that retails in firearms, restricted premises or sex services premises).
- b) The outdoor trading area must be located in that part of the public domain that is immediately in front of or adjacent to the retail premises. This may involve the footpath area of the road reserve.
- c) The outdoor trading area must:
 - i. Be set back a minimum of 1.8 metres from the building to provide unobstructed continuous clearance along the building shoreline;
 - ii. Not be on land that is used for vehicular access, circulation or parking, or a designated loading/unloading area;
 - iii. Not be immediately in front of an ingress/egress, including fire exit(s), arcades and pedestrian access ways;
 - iv. Be set back from street furniture (refer to the section entitled “Outdoor Dining or Trading Areas - Distance from Street Furniture and Surrounding Uses” below);
 - v. Display stands be separated from the kerb by a minimum of 0.6m with no goods or parts of the display impeding this space; and
 - vi. Provide a predictable clear path of travel and be consistent along the same part of the footway for the length of the block or outdoor area, preferably along the building shoreline.
- d) If the outdoor trading area is located wholly within the development site and:
 - i. The floor area of the outdoor trading area exceeds 10m²;
 - ii. The width of the outdoor trading area exceeds 1.5m; or

- iii. The goods displayed in this area are unable to be removed at the close of each operating day;

the floor area occupied by the outdoor trading area will be included in the calculation for the total floorspace of the retail premises. This will be used for the purposes of calculating car parking and, if required, amenities including parenting facilities only.

- e) If the outdoor trading area is located on a classified road, the application will be referred to the RMS as part of the assessment process.
- f) The area must be kept clean and tidy at all times, including ensuring that any furniture or goods displayed are well maintained, not left in disarray after patrons have left the area or cause nuisance or obstruct pedestrian movement.

Display in Outdoor Trading Area

- a) Display stands may be used within the outdoor trading area provided:
 - i. Display stands do not exceed the dimensions of 1.2 metres high and 60cm wide, with a minimum ground clearance of 20cm;
 - ii. Display stands are of sturdy construction with no sharp edges;
 - iii. Any goods in the display stands are stacked so they do not overhang and there is minimal risk of them falling;
 - iv. Any goods that have fallen off the display stands are immediately picked up; and
 - v. The display stands are put away inside the premises when it is closed.
- b) Details of the type of furniture used to display products, either display stands that can be removed at night or stands that may be affixed to the ground, are to be submitted with a development application.
- c) Displays, including goods, must provide a clear line of sight by ensuring goods do not exceed a height of 1.2 metres.
- d) Displays, including stand and goods, must not;
 - i. Obstruct pedestrians;
 - ii. Overhang the carriageway; or
 - iii. Present potential trip hazards.

Trading areas located on land owned or managed by Council (additional requirements)

- a) As the development will occupy land owned or managed by Council, adequate protection must be provided to Council (as the land owner) against claims that may arise as a result of the operation of an outdoor dining or trading area.
- b) The applicant/proprietor of the premises must have a current public liability risk insurance policy for the sum of \$10 million which indemnifies Penrith City Council from any public liability action between the front property boundary of the premises and, if in the case of occupying the footpath, the kerb line of the street for the full frontage of the

premises. The applicant/operator is to keep this policy current at all times and shall provide Penrith City Council with a copy of the policy prior to commencing any footpath dining or trading. For those location other than footpath areas, the area defined in the indemnity may be extended depending on the location and type of land to be occupied by the outdoor area. (In this instance, please liaise with Council's Property Development Department to confirm the description of the area to be included in the indemnity.)

- c) An initial licence will need to be obtained from Council to operate an outdoor dining or trading area on lands owned or managed by Council. This licence will need to be renewed on an annual basis, at which time the operation of the outdoor dining or trading area will be monitored during the first 12 months to ensure that the amenity of the surrounding area is not adversely affected by the outdoor dining or trading area.
- d) Part of the annual licence renewal will include a fee to use/occupy Council's footpath or other lands owned by Council. Fees will be charged in accordance with Council's adopted Fees and Charges.

8.5. Public Art

A. Background

Place making is a comprehensive approach to the planning, design and management of public spaces with the intention of creating public spaces that supports and generates economic sustainability, social connection and well-being.

Public art is implemented through place making principles and refers to all manner of artworks from traditional forms to the utilisation of new technologies.

These creative works are located in and around interfaces with the public domain rather than in galleries and museums. Public art may have an integrated function within street furniture, street infrastructure and or free standing icon and or integrated into the architectural building designs that interface with public spaces.

B. Objectives

In addition to the general objectives for Public Domain, the objectives of this section are to:

- a) Encourage the role that place making and public art plays in the life of the City and its communities in contributing to its creative cultural life, liveability and accessible amenity;
- b) Provide public art through place-making principles that contributes to the development of vibrant destinations in the City's public domain; and
- c) Encourage new developments and redevelopments to facilitate and integrate high quality place making and public art into the development framework which adds to the cultural development of the City.

C. Controls

- 1) Council will identify locations in the City's commercial and employment areas where it considers place making and public art should be integrated into the public domain, regardless of land ownership.

- 2) Applicants are to liaise with Council's appointed officers overseeing place making and public art for recommendations and direction before developing a Place Making and Public Art Strategy.
- 3) For significant developments as outlined in Council's Place making and Public Art Policy with an estimated cost of \$5 million or more to include place making and public art as an integrated approach for public spaces/domain.
- 4) The style of public art proposed can utilise traditional art forms through to the utilisation of new technologies platforms. These creative expressive works can be integrated and interface with the public domain within the architectural building designs, street furniture, street infrastructure and or free standing icon works where appropriate. Place making and public art is to offer creative site specific responses.
- 5) The development of place making and public art strategy will require the engagement and commissioning of professionals within the areas of place making and public art.
- 6) The Landscape, Urban Design and/or Architectural designs/plans are to support the development of place making and public art to ensure high quality integrated outcomes.
- 7) The Place Making and Public Art Strategy is to be submitted as part of the Development Application.

The application must address how the proposed place making and public art meets the following selection criteria:

- a) Standards of excellence, originality and innovation;
- b) Relevance and appropriateness of the creative works in relation to the site;
- c) Its contribution to creating a sense of place, and integration into the built form;
- d) Where possible, engagement and consultation with local community and key stakeholder groups including, for example, young people and Aboriginal people;
- e) Consideration for public safety and public's use of and access to public spaces;
- f) Consideration of maintenance and durability requirements of public art, including potential for vandalism and graffiti;
- g) Where applicable, consistency with current planning, heritage and environmental policies and plans of management;
- h) All artworks to have appropriate insurances and to be accompanied by a public art maintenance manual and schedule with a decommissioning process outlined;
- i) The Place making and Public Art Strategy is to cover the nature and style of the place making and public artworks, the method, approach, scale, locations, community engagement process and to utilise themes that reflect the local heritage and or local environment to contribute to a sense of place, pride and identity;
- j) All public artworks are to be maintained and any repairs required to be carried out in a professional and timely manner by the developer until handover signoff by Council.

- 8) Public art is to be designed and implemented in accordance with Council's Place Making and Public Art Strategy. A copy can be found on Council's website at www.penrithcity.nsw.gov.au.

Table of Contents

ADVERTISING AND SIGNAGE	2
INTRODUCTION	2
9.1. GENERAL REQUIREMENTS FOR SIGNS	3
9.2. SIGNS IN THE VICINITY OF HERITAGE ITEMS	6
9.3 RESIDENTIAL, RURAL AND ENVIRONMENTAL ZONES (E3 AND E4)	7
9.4. COMMERCIAL, MIXED USE AND INDUSTRIAL ZONES	8
9.5. OPEN SPACE ZONES (PUBLIC AND PRIVATE RECREATION)	11
9.6. SPECIAL EVENT ADVERTISING	12

Advertising and Signage

Introduction

A. Background

Advertisements and advertising structures are an important element of the built environment and a fundamental component of business communications. These provisions are intended to protect the significant characteristics of buildings, streetscapes, vistas and skyline and to encourage well designed and well positioned signs which contribute to the vitality and legibility of Penrith and which respect the amenity of residents and pedestrians and the safety of motorists.

In considering innovative design proposals for signs not envisaged by these provisions or where there are issues of interpretation, Council will consider the design of the proposal and the degree to which it meets the objectives of this section. Signs must not provide a distraction to motorists or be highly visually intrusive.

B. Application

This Section applies to land within the City of Penrith where an advertisement requires Council's consent. Applicants intending to erect a sign should first consult the relevant environmental planning instrument applying to the subject property to determine whether consent is required.

C. General Objectives

- a) To permit the appropriate display of information concerning the identification of premises, name of the occupier and the activity conducted on the land; and
- b) To ensure that all advertising achieves a very high level of design quality in terms of graphic design, its relationship to the architectural design of buildings and the character of streetscapes, landscapes and vistas.
- c) To permit the appropriate display of information concerning the identification of premises, name of the occupier and the activity conducted on the land;
- d) To provide a consistent approach to the control, location and design of advertisements;
- e) To promote and encourage an integrated design approach to all signage which is in character with the locality, together with its architectural and landscape features and results in a high quality advertising sign and structure;
- f) To ensure that all signage to be displayed on a building's facade complements the architectural features, colour scheme and external finish of the building;
- g) To prevent the proliferation of signage;
- h) To ensure that signage does not constitute a traffic hazard to motorists and pedestrians; and
- i) To foster a consistent approach to the design and assessment of advertising signs and structures within the City.

In seeking to apply these objectives, the full impact of advertising signage in its wider context should be taken into account. Council encourages applicants to consider advertising and signage as one element of a broader range of subliminal factors that influence attraction of business patronage (i.e. building form, landscaping, overall image, impact on adjoining properties, etc).

9.1. General Requirements for Signs

A. Background

The purpose of this Section is to provide details and requirements for advertising and signage within the City of Penrith in order to protect the amenity of the environment, minimise visual clutter and reduce the proliferation of signs throughout the City. More specifically, this section has been written to positively contribute to:

- the identification of businesses;
- informing and engaging the public and the community;
- promoting economic development; and
- protecting urban character, streetscape and the natural environment.

B. Objectives

- a) To recognise the legitimate need for clear business identification and promotion through appropriate advertising signs;
- b) To limit the overall amount of advertising through the provision of fewer, more effective signs, to avoid the creation of visual clutter on buildings and streetscapes;
- c) To promote signs that add character to the streetscape and assist with direction and the pedestrian useability of the City;
- d) To consider the amenity of residential development and the visual quality of the public domain;
- e) To promote signs, including corporate logos and colours, that achieve a high degree of compatibility with the architectural features, colour scheme and external finish of the building; and
- f) To ensure that the location and design of signs are consistent with road safety principles.

C. Controls

1) General

- a) Signs are to be designed and located to:
 - i) relate to the use of the building;
 - ii) be visually interesting and exhibit a high level of design quality;
 - iii) be constructed of high quality, durable materials;
 - iv) be wholly contained within the property;
 - v) have only a minimal projection from the building;
 - vi) be integrated and achieve a high degree of compatibility with the architectural design of the supporting building having regard to its composition, fenestration, materials, finishes and colours, and ensure that architectural features of the building are not obscured;
 - vii) have regard to the view of the sign and any supporting structure, cabling and conduit from all angles, including visibility from the street level and nearby higher buildings and against the skyline; and

- viii) be sympathetic to the existing character of the area and the particular architectural/urban design utilised in any improvements scheme.
- b) Signs that contain additional advertising promoting products or services not related to the approved use of the premises or site (such as the logos or brands of products; e.g. soft drinks, brewers, photographic film, etc) are not permitted.
- c) Signs painted or applied on the roof are prohibited;
- d) Corporate colours, logos and other graphics are encouraged to achieve a very high degree of compatibility with the architecture, materials, finishes and colours of the building and the streetscape.
- e) Flat standing signs are only permissible where the main building is set back 3 metres or more from the street alignment.
- f) In considering applications for new signs, Council must have regard to the number of existing signs on the site and in its vicinity; whether that signage is consistent with the provisions of this section; and whether the cumulative impact gives rise to visual clutter.
- g) Signs must not involve damage, removal or pruning to trees or other vegetation and must not result in pruning or removal for visibility purposes.
- h) The dominant design of any sign must relate to business identification rather than product advertising.

2) Signs and Road Safety

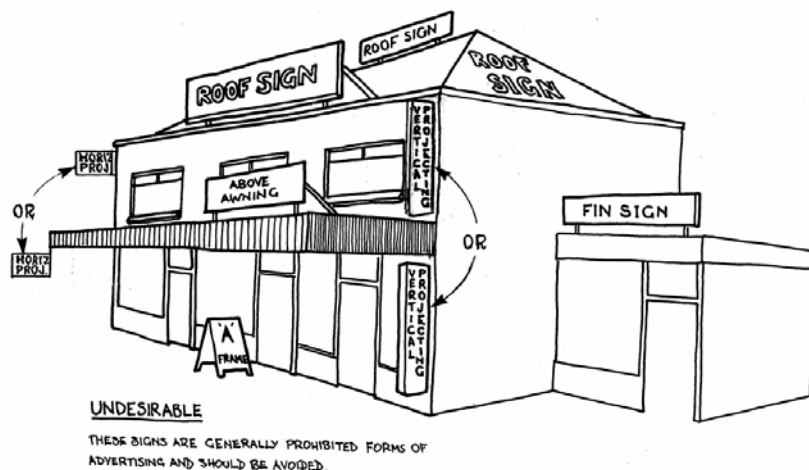
- a) Signs are regarded as prejudicial to the safety of the travelling public and are therefore prohibited if they:
 - i) Obscure or interfere with road traffic signs and signals or with the view of oncoming vehicles or pedestrians;
 - ii) Obscure or interfere with the view of a road hazard or an obstruction which should be visible to drivers or other road users;
 - iii) Give instructions to traffic by use of the word 'stop' or other directions, which could be confused with traffic signs;
 - iv) Include variable messages or intensity of lighting sufficient to impair drivers' vision or distract drivers' attention; or
 - v) Are located in places where drivers' require greater concentration, such as at major intersections or merging and diverging lanes.

3) Inappropriate Signs

- a) Council will not support an application for an advertisement of a form, type or size described below (see Figure C9.1 for example illustrations):
 - i) Roof signs;
 - ii) Sky signs controlled from the land;
 - iii) Signs painted on or applied on the roof;
 - iv) Flashing signs;
 - v) Signs made of canvas, calico or the like (other than a temporary sign);
 - vi) Signs displayed on an awning blind or external window blind;
 - vii) Hoardings (excluding those required during construction);
 - viii) Billboards;

- ix) Bulletin boards;
- x) Signs in the nature of posters attached directly onto walls, roof surfaces or any street furniture;
- xi) Signs mounted on parked or stationary motor vehicles, trailers (both registered and unregistered) where the principal purpose of the vehicle or trailer is not for the transportation of goods or people but is parked in a location and position as an advertising medium;
- xii) A-frame or sandwich board signs (except where specific controls have been prepared and adopted by Council);
- xiii) Pole or pylon signs, except for industrial, business park, service station or shopping centre uses which are permitted one pole or pylon signs with the maximum height not in excess of 7.0m;
- xiv) Signs that are located on land which advertises businesses that are not being conducted on that land;
- xv) Vertical or horizontal projecting signs;
- xvi) Fin signs; and
- xvii) Above awning signs.

Figure C9.1 Examples of undesirable signage

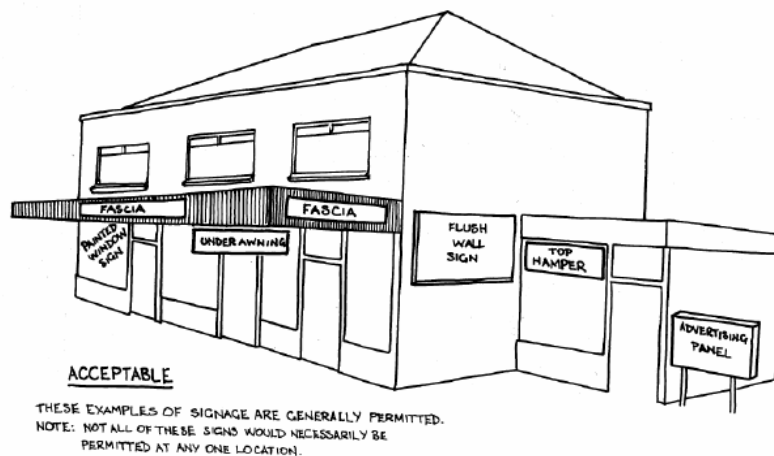


4) Desirable Signage Design

- a) The following signs are permitted by Council (see Figure C9.2 for example illustrations):
 - i) Fascia signs;
 - ii) Under awning signs;
 - iii) Flush wall signs;
 - iv) Top hamper signs;
 - v) Painted window signs; and

- vi) Advertising panel signs.

Figure C9.2: Examples of desirable signage



9.2. Signs in the Vicinity of Heritage Items

A. Background

Heritage items include buildings, structures and places. Heritage items and heritage conservation areas are listed in Schedule 5 – Environmental Heritage of Penrith LEP 2010 and may also be listed under the *Heritage Act 1977* as an Item of State Significance. If the building is listed on the State Heritage Register, additional approval under the *Heritage Act 1977* may be required from the NSW Heritage Council.

The design and location of signs on or near heritage items or within heritage conservation areas must be carefully considered to achieve a very high degree of compatibility with the heritage character, qualities and significance of the building, structure or place. In some cases, the heritage significance of an item may not allow for any signage or allow only limited signage opportunities.

See the Culture and Heritage Section for more information on heritage items.

B. Objectives

- a) To permit the adequate display of information concerning the identification of premises, name of the occupier and the activity conducted on the land.
- b) To ensure that the design, form, siting and size of the sign does not detract from the heritage significance of the item or the scenic quality of the area.
- c) To ensure that the design, form, siting and size of the sign do not detract from the heritage significance of heritage items or heritage conservation areas.

C. Controls

- 1) Applicants intending to erect a sign should consult Penrith LEP 2010 (Schedule 5 Environmental Heritage) to determine whether or not the property is an heritage item, or in a heritage conservation area, or in the vicinity of a heritage item ('In the vicinity' is defined in Appendix F1 – Definitions of this Plan). If the proposed signage is on or in the vicinity of a heritage item, or in a heritage conservation area, the impact must be

addressed in the application. In some cases, Council may require a *Heritage Impact Statement* (see the Culture and Heritage Section of this Plan).

- 2) A sign, generally, should not be fixed to a heritage item unless the building had traditionally displayed an advertisement.
- 3) Any sign shall be appropriately designed and located to ensure that the architectural details of the building and/or the heritage character of the site are not obscured or diminished.

D. Other Relevant Information

It is recommended that applicants seeking to address this issue should also refer to other relevant information including:

- Guidelines and Information Sheets of the Heritage Branch of the NSW Department of Planning and Environment.

9.3 Residential, Rural and Environmental Zones (E3 and E4)

A. Background

Council recognises rural and residential zones support a range of non-agricultural and non-residential uses that require advertising. However, advertising and signage in rural and residential zones need to protect the desired rural scenic and landscape character of these areas.

B. Objectives

- a) To enable approved and permissible uses to be appropriately identified;
- b) To ensure that the amenity, landscape and character of rural and residential areas are maintained; and
- c) To minimise roadside clutter.

C. Controls

- 1) A sign that is erected on a property must relate to an approved activity being conducted on that property.
- 2) A sign that is erected on the property must be located wholly within the property and positioned so as not to impede pedestrian access or result in a traffic hazard.
- 3) The siting and design of the sign on the property should ensure that amenity and visual impacts to adjoining properties are kept to a minimum.
- 4) The siting and design of the sign on the property should be sympathetic to the existing character of the area.
- 5) Only one building identification sign is to be erected on the property in association with the approved business or activity being conducted on the land.
- 6) The building identification sign is not to exceed 3m² or one-third of the length of the building elevation that faces the street, whichever is the lesser, and must not be illuminated.
- 7) Only one business identification sign is to be erected on the property in association with the approved business or activity being conducted on the land.

- 8) In residential zones, the business identification sign is not to exceed 3m² and must not be illuminated.
- 9) In rural zones, the business identification sign is not to exceed 3m², must be no higher than 2m above the ground, must not be located in a position that would intrude into the skyline, and must not be illuminated.
- 10) In rural zones, signage, where permissible, shall relate to the style, character and function of the building or activity, and reflect the area's landscape and character.
- 11) In rural zones, signage shall not be freestanding in the landscape, but shall relate to walls, fences or buildings.
- 12) A real estate sign may comprise of a double sided or 'V' sign and must not exceed 4.5m² in area per sign face. The sign must be removed within 14 days of the property being sold or let.
- 13) A sign advertising an exhibition home or village must not exceed 10m² in area. The sign must be removed on expiration of the development consent for the 'exhibition home'.
- 14) Illuminated signs are generally not permitted. External lighting of a sign, however, will be considered where it can be demonstrated that no adverse impact will result.

9.4. Commercial, Mixed Use and Industrial Zones

A. Background

Industrial and commercial zones can easily be dominated by signage due to the large number of businesses and a competitive environment. Buildings and sites with limited street frontage and multiple occupants are common, and poor coordination of signage can result in profuse and irregular signage. Too much advertising can also result in an area with poor visual aesthetics and pedestrian amenity.

Managing the design and location of signs is one way that individual businesses, as well as the area, can be more effectively advertised, and the visual quality and amenity enhanced.

B. Objectives

- a) To promote an integrated design approach to all signage in character with the locality and its architectural and landscape features;
- b) To prevent the proliferation of advertising signs.
- c) To permit the adequate display of information concerning the identification of the premises, the name of the occupier and the activity conducted on the land.
- d) To encourage a coordinated approach to advertising signs where multiple occupancy of buildings or sites occurs.
- e) To prevent distraction to motorists and road users, and minimise the potential for traffic conflicts.
- f) To ensure signage does not create conflicts or safety problems for pedestrians.

C. Controls

- 1) Applicants intending to erect a sign (advertisement) should first consult the relevant environmental planning instrument applying to the subject property to determine whether or not an advertisement requires development consent.
- 2) All advertising is to be –

- a) constructed of high quality, durable materials;
 - b) considered in conjunction with design and construction of buildings;
 - c) restricted to one sign identifying the name of the occupants and/or products manufactured or produced on the site; and
 - d) contained wholly within the site.
- 3) Signs should generally be confined to the ground level of the building, awning or fascia, unless it can be demonstrated that the building is of a scale, architectural style and in a location that would be enhanced by signage at different elevations (see Figure C9.3 below).
- 4) The sign is to be contained fully within the confines of the wall or awning to which it is mounted.
- 5) In the case of multiple occupancy of a building or site:
- a) Each development should have a single directory board listing each occupant of the building or site (see Figure C9.4 below). Multiple freestanding signs will not be supported;
 - b) Only one sign is to be placed on the face of each premises either located on or over the door of the shop, unit, office, suite, etc.;
 - c) One under awning sign shall be permitted for each shop, unit, office, suite, etc. (see Figure C9.5). In the case where the shop, office, suite etc. has more than one street frontage, one under awning sign may be permitted to each street frontage;
 - d) The minimum distance between under awning signs shall be 3m (see Figure C9.6); and
 - e) Where possible, multiple tenancies in the same building should use consistent sign size, location and design to avoid visual clutter and promote business identification.
- 6) Projecting wall signs, generally, will not be supported unless it can be demonstrated to be of an architectural style which is particularly suited to that building in relation to its design.

Figure C9.3: Signage appropriate to scale and location of building

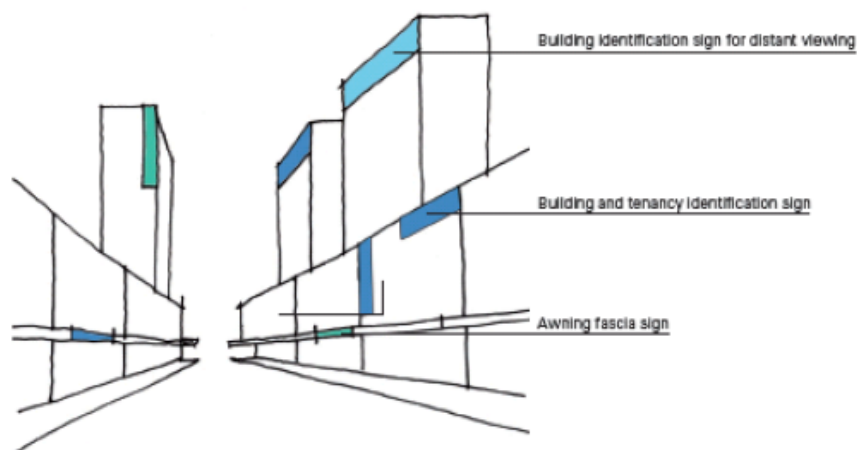


Figure C9.4: Directory Board Signage



Figure C9.6: Under Awning Signage

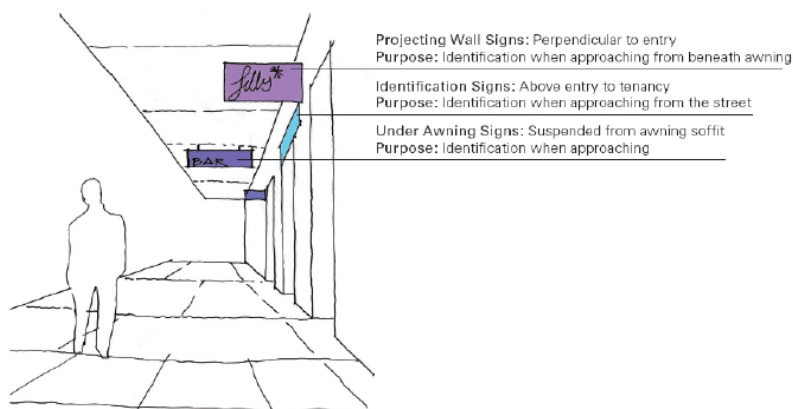
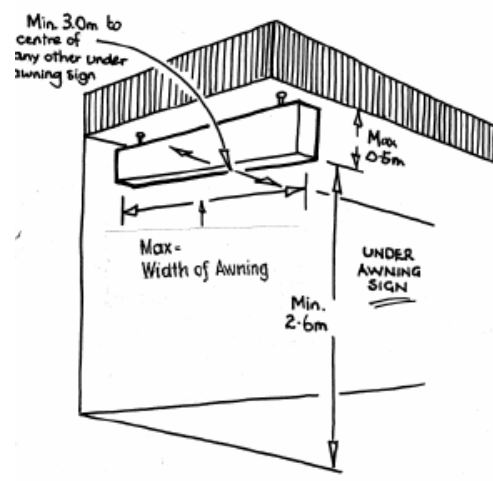


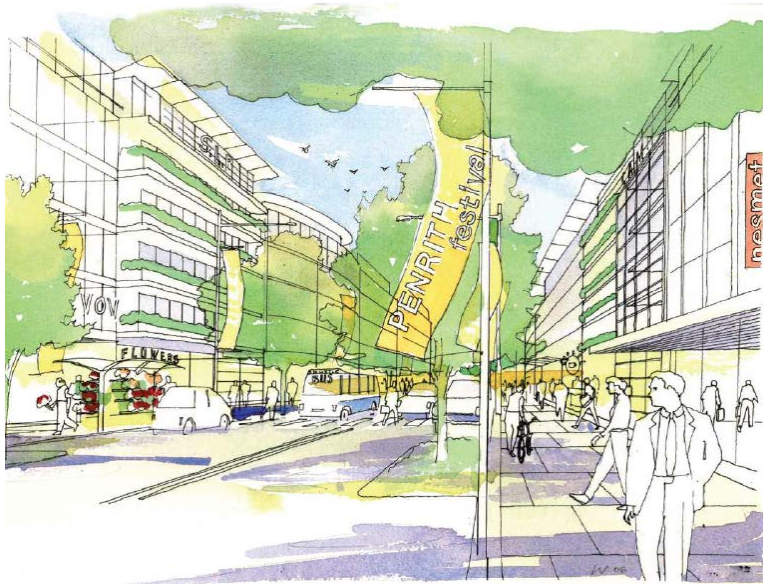
Figure C9.6: Specifications for Under Awning Signage



Illuminated signs

- 7) Illuminated signs are not to detract from the architecture of the supporting building during daylight.
- 8) Illumination (including cabling) of signs is to be:
 - a) Concealed; or
 - b) Integral with the sign; or
 - c) Provided by means of carefully designed and located remote or spot lighting.
- 9) The ability to adjust the light intensity of illuminated signs is to be installed where Council considers it necessary.
- 10) A curfew may be imposed on the operation of illuminated signs where continuous illumination may impact adversely on the amenity of residential buildings, serviced apartments or other tourist and visitor accommodation, or have other adverse environmental effects.
- 11) Up-lighting of signs is prohibited. Any external lighting of signs is to be downward pointing and focused directly on the sign and is to prevent or minimise the escape of light beyond the sign.

Figure C9.7: Well-placed and scaled signage can complement the streetscape



9.5. Open Space Zones (Public and Private Recreation)

A. Background

This Section of the DCP provides guidance to applicants wanting to erect signs in open space zones (including RE1 Public Recreation, RE2 Private Recreation and W2 Recreational Waterways). It is important that signage does not adversely impact upon the amenity of an open space zone.

B. Objectives

- a) To ensure that the signage reflects the nature and scale of the activity conducted on the land; and
- b) To ensure that the amenity and character of the open space area is maintained.

C. Controls

- 1) Applicants intending to erect a sign (advertisement) should first consult the relevant environmental planning instrument applying to or any plan of management for the land to determine any requirements for an advertisement.
- 2) The siting and design of the sign on the property should ensure that amenity and visual impacts to adjoining properties are kept to a minimum.
- 3) The siting and design of the sign on the property should be sympathetic to the existing character of the area and the particular architectural/urban design utilised in any improvements scheme.
- 4) Signs on recreation reserves that are visible from beyond the site should generally not be permitted except for signs identifying the name of the recreation reserve and/or the name of sporting clubs or other associations occupying the site (and other 'public interest' information pertaining to the club or association).
- 5) Signs identifying the sponsors of clubs or associations occupying reserves are generally not permitted if they are visible from beyond the site. However, favourable consideration may be given to no more than 20% of the total area of the main identification sign being used for sponsor recognition.
- 6) Signs should be generally low key in appearance, taking into consideration their shape, colour, materials, construction and the character of the surrounding area.
- 7) Any sponsorship advertising signage must not be visible outside the site.

9.6. Special Event Advertising

A. Background

This Section of the DCP, whilst allowing the erection of short term event signs, aims to limit the locations where the signs can be erected, the number of signs to be erected and the length of time the sign remains on display. It is intended to facilitate the dissemination of community information whilst maintaining the amenity of the public domain, and limiting any risks involved with their installation.

B. Objective

- a) To provide guidance to applicants on the erection of temporary signage which may promote a business, cultural, sporting or educational event.

C. Controls

1) Number of Signs

- a) A maximum of two temporary advertising signs will be permitted at any one location at any one time. This will be determined at the discretion of Council with regard to the type and size of signs proposed at each location.
- b) Applicants may request more than one location for temporary advertising signage to promote an event.

2) Duration of Signage

- a) Each piece of temporary advertising signage will be permitted to remain at its approved location(s) for a maximum of 28 days prior to the event and 14 days following the event.

3) Erection and Removal of Signage

- a) Applicants are responsible for the erection and removal of signage within the time frame approved by Council.

4) Size of Signage

- a) Each piece of advertising signage will be permitted to have a maximum area of 5m².

5) Insurance of Signage

- a) Applicants are responsible for obtaining appropriate Contents and Public Liability Insurance to cover any temporary advertising signage. Public Liability Insurance must specifically indemnify Penrith City Council.

6) Penalties for Non-Compliance with this Section

- a) Unapproved temporary advertising signage erected on any Council-owned or Council-managed property will be removed and impounded by Council. Unapproved signage includes signage that is erected prior to the approved date or signage that is not removed by the required date.
- b) Repairing damage caused by signage:
 - i) The applicant organisation will be responsible for the costs of repairing any damage caused by the erection or removal of any temporary advertising signage placed on Council-owned or Council-managed property.
 - ii) Damage includes broken underground irrigation systems, holes in a reserve which could be a hazard after the removal of temporary advertising signage or damage caused by vehicles during the erection or removal of temporary advertising signage.

Table of Contents

C10 TRANSPORT, ACCESS AND PARKING	2
10.1. TRANSPORT AND LAND USE	4
10.2. TRAFFIC MANAGEMENT AND SAFETY	5
10.3. KEY TRANSPORT CORRIDORS	7
10.4. ROADS	8
10.5. PARKING, ACCESS AND DRIVEWAYS	15
10.5.1 PARKING	15
10.5.2 ACCESS AND DRIVEWAYS	24
10.6. PEDESTRIAN CONNECTIONS	26
10.7. BICYCLE FACILITIES	28

C10 Transport, Access and Parking

A. General Objectives

- a) To integrate transport planning and land use to promote sustainable development and greater use of public transport systems;
- b) To minimise the impacts of traffic generating developments and manage road safety issues;
- c) To ensure that access paths and driveways are integrated in the design of developments and minimise impacts on road systems;
- d) To provide appropriate parking for all development whilst promoting more sustainable transport use;
- e) To facilitate connections and accessibility for those using non vehicle transport by providing appropriate facilities to improve amenity and safety;
- f) To facilitate bicycle connections and provide appropriate bicycle facilities to improve amenity and safety; and
- g) To ensure that access is provided for all people with diverse abilities.

B. Other Relevant Sections of this DCP

This section should be read in conjunction with all other relevant sections of this DCP. In particular, the following sections cover issues which overlap with transport, access and parking.

C. Other Relevant Information

Other relevant information includes:

- Planning Guidelines for Walking and Cycling (December 2004) NSW Department of Infrastructure, Planning and Natural Resources; Roads and Traffic Authority
- Improving Transport Choice – Guidelines for planning and development (August 2001) NSW Department of Urban Affairs and Planning; Transport NSW; Roads and Traffic Authority
- Healthy By Design: a planners' guide to environments for active living (June 2004) National Heart Foundation (Victorian Division).
- Guide to Traffic Generating Developments (2002) Roads and Traffic Authority (as updated). The Roads and Maritime Services (RMS) Technical Direction (TDT 2013/04a) Guide to Traffic Generating Developments Updated Traffic Surveys.
- Australian Standards AS2890, AS1428, AS1158 and AS4287. The Roads and Maritime Services (RMS) Australian Standard Supplement to Australian Standard AS2890 Parking Facilities Part 1 – 6.

- State Environmental Planning Policy (Infrastructure) 2007
- State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004
- Final Draft Penrith Integrated Transport and Land Use Strategy (2008) Penrith City Council
- Penrith Accessible Trails Hierarchy Strategy (PATHS)
- Draft Interim Guidelines: Transport Management and Accessibility Plans, Ministry of Transport and Roads and Traffic Authority - www.transport.nsw.gov.au

10.1. Transport and Land Use

A. Background

This section of the DCP seeks to maximise the benefits to the community of an effective and well-used public transport system by promoting planning and development outcomes that will support and sustain public transport use, improve community health, and which will achieve the more effective integration of land use and public transport infrastructure.

B. General Objectives

- a) To develop a coherent urban system of compact walkable neighbourhoods with relatively intense, mixed use town centres;
- b) To provide a highly-interconnected street network that clearly distinguishes between arterial routes and local streets, establishes good internal and external access for residents, maximises safety, encourages walking and cycling, supports public transport and minimises the impact of through traffic;
- c) To reduce travel demand including the number of trips generated by development and the distances travelled, especially by car;
- d) To promote and facilitate the use of public transport as a more sustainable alternative to the private car for personal travel;
- e) To ensure that transit infrastructure is effectively integrated with other development, to maximise safety, security and convenience for transit users; and
- f) To promote and facilitate walking and cycling within transit oriented precincts by establishing and maintaining high levels of amenity, safety and permeability in the urban form.

C. Controls

- 1) A *Transport Management and Accessibility Plan* (TMAP) is to be prepared for all significant developments (see Appendix F3 – Submission Requirements for further details). The TMAP is to address the objectives and controls in this section.
- 2) New development that will have potential significant public transport patronage (especially residential, commercial and employment generating uses) is to be located close to existing or proposed transport nodes or networks.
- 3) A range of uses are to be provided or integrated in mixed-use areas to provide a range of services in a single location and minimise the need for additional travel.
- 4) Public transport use is to be enhanced by providing good pedestrian connections from places of residence or employment to transport networks or nodes.

10.2 Traffic Management and Safety

A. Objectives

- a) To provide safe and efficient travel routes for all vehicles in the Penrith LGA;
- b) To reduce the number of vehicle and pedestrian accidents per capita;
- c) To ensure the safety of cyclists, pedestrians and passing traffic during construction of development;
- d) To cater for current and future growth of vehicle traffic usage;
- e) To encourage the orderly and economic provision of road and intersection works;
- f) To ensure that existing roads and intersections are upgraded to provide a satisfactory level of service consistent with the volume and nature of traffic generated by the proposed development; and
- g) To avoid new direct access to and from arterial, sub-arterial and other major roads.

B. Controls

1) Traffic Studies

Traffic studies may be required for some developments. Check with Council about whether a traffic report is required to support your proposal.

- a) Development applications for major development proposals should be accompanied by an appropriate *Traffic Report* (see Appendix F3 – Submission Requirements for further details). The Traffic Report should detail the assessed impact of projected pedestrian and vehicular traffic associated with the proposal, with recommendations on the extent and nature of the traffic facilities necessary to preserve or improve the safety and efficiency of the adjacent road system.
- b) A Traffic Report must be provided for applications required to be referred to the Roads and Maritime Services (RMS) under Column 2 and a *Traffic Impact Statement* for Column 3 of SEPP (Infrastructure) 2007.
- c) Depending on the scale, type and nature of the use proposed, Council may determine that a Traffic Report or Traffic Impact Statement is required for certain development which is not listed under Column 2 or 3 of SEPP (Infrastructure) 2007.
- d) Any Traffic Report or Traffic Impact Statement is required to address the following issues:
 - i) The objectives of this section relating to transport and land use;
 - ii) The objectives of this section relating to traffic management and safety;
 - iii) The objectives and controls of this section relating to traffic generating developments; and
 - iv) The issues set out in Appendix F3 – Submission Requirements of this DCP.

- e) Any development identified in Schedule 3 of *State Environmental Planning Policy (Infrastructure) 2007* is either referred to RMS (Column 2 developments) or Council's Local Traffic Development Committee (Column 3 developments) for assessment and conditions as required.

2) Road Safety

- a) Each development should demonstrate how it will:
 - i) Provide safe entry and exit for vehicles and pedestrians which reflect the proposed land use, and the operating speed and character of the road;
 - ii) Minimise the potential for vehicular/pedestrian conflicts, providing protection for pedestrians where necessary;
 - iii) Not restrict traffic flow or create a hazard to traffic on roads in the vicinity of the development;
 - iv) Provide suitable off-street parking facilities to accommodate vehicles generated by the development; and
 - v) Identify the need, where apparent, for any additional on-street traffic facilities or road works which may be required to maintain the safe and efficient movement of vehicles and pedestrians.
- b) Where feasible, vehicle access for developments should be from service roads/lanes.
- c) The design of direct vehicular access to developments should consider the traffic impacts on the surrounding road network. This may require the provision of deceleration, acceleration, right turn lanes and road widening, as necessary.
- d) Provision must be made for all vehicles to enter and leave properties in a forward direction other than for single dwellings.
- e) The layout and design of parking areas must minimise vehicle to pedestrian impacts, especially where heavy vehicle access to loading docks is proposed.

3) Traffic Generating Development

- a) New access points off arterial, sub arterial or other major roads is to be avoided where alternate access opportunities exist.
- b) Any development identified in Schedule 3 of *State Environmental Planning Policy (Infrastructure) 2007* is either referred to RMS (Column 2 developments) or Council's Local Traffic Development Committee (Column 3 developments) for assessment and conditions as required.

10.3. Key Transport Corridors

A. Background

This section seeks to identify key transport corridors in the City of Penrith that have specific functions, character or requirements that need to be protected when approving development along those corridors. Section C1 'Site Planning and Design Principles' provides more guidance on what is required in areas with particular scenic and landscape values.

Key transport corridors that need to be protected include:

- Andrews Road
- Castlereagh Road
- Cranebrook Road
- Christie Street
- Dunheved Road
- Elizabeth Drive
- Erskine Park Road
- Gipps Street/Werrington Road
- Great Western Highway
- Greendale Road
- Londonderry Road
- Luddenham Road
- Mamre Road
- Mulgoa Road
- Park Road
- Richmond Road
- The Northern Road
- Lenore Drive
- Main Western Railway Corridor.

B. Objectives

- a) To protect the character of certain transport corridors in the City of Penrith; and
- b) To ensure that development is appropriately setback from transport corridors.

C. Controls

1) Character of Key Transport Corridors

- a) Applicants need to ensure that the proposed development is in character with each of the key transport corridors.
- b) Access driveways and development in proximity to the key transport corridors need to protect the landscape character and any heritage values, and ensure traffic safety.

2) Development Setbacks from Transport Corridors

- a) A minimum setback of 100m is required from Mulgoa Road where development is proposed in rural or environmental zones.
- b) A minimum setback of 30m is required from all other key transport corridors where development is proposed in rural or environmental zones.

10.4 Roads

A. Objectives

- a) To regulate the key characteristics of new streets to provide traffic safety and efficient traffic flow, appropriate parking provision, appropriate pedestrian and cycle provision, and suitable verge and road reserve widths in accordance with each road's function and use within the general road hierarchy;
- b) To ensure public safety from criminal elements by considering the NSW Police 'Safer by Design' or 'Crime Prevention Through Environmental Design' principles and protocols;
- c) To minimise construction and maintenance costs, and avoid the need for future property acquisition;
- d) To maintain flexibility to allow for future changes in land use patterns;
- e) To ensure noise from all sources is within acceptable limits; and
- f) To incorporate appropriate traffic calming measures.

B. Controls

1) Controls for all roads

- a) Proposed roads must comply with the road configurations set out in Table C10.1. These configurations apply to private and community title roads as well as all public roads.
- b) In special circumstances where it can be clearly demonstrated that the road configurations in Table C10.1 are not appropriate, then the following key principles must be applied to any alternative proposal:
 - i) Road and lane widths must allow for two-way movement and turning movements of design vehicles, including consideration for buses, heavy vehicles, garbage trucks and emergency vehicles;
 - ii) Verge widths must consider requirements for utilities, street tree planting, footpaths, shared paths and urban design outcomes;
 - iii) Adequate on-street parking must be provided;
 - iv) Adequate turning paths must be provided for all design vehicles at intersections and for property access;
 - v) Road widths must be set to minimise kerbside restrictions and regulatory signage;
 - vi) Sufficient width must be provided for specialist drainage functions; and
 - vii) Life cycle costs for construction and maintenance must be minimised.

Table C10.1: Road Configurations

Street/Road Type	Parking Lane Provision (m)	Width of Dedicated Travel Lanes – Both directions (m)	Verge widths (m)	Road Reserve (m)	Concrete Pathway 1.5m wide
Local	2 x 2.5	3	2 x 3.8	15.6	Both sides ⁽⁹⁾
Collector	2 x 2.5 ⁽⁴⁾	7 ⁽⁴⁾	2 x 4.8	21.6 ⁽⁴⁾	Both sides ⁽⁴⁾
Distributor	2 x 3.95 ⁽⁶⁾	7 ⁽⁶⁾	2 x 4.8	24.5	Both sides
Industrial	2 x 3.0 ⁽⁴⁾	7 ⁽⁴⁾	2 x 3.8	20.6 ⁽⁴⁾	Both sides ⁽⁴⁾
Rural	n/a	7	2 x 6.0 ⁽⁷⁾	19	n/a

Notes:

- 1) *It is not intended that this table address all road configurations. The characteristics and requirements for other roads will be assessed on merit as part of any development proposal. Special consideration will need to be given to other road configurations such as laneways, access ways, commercial precincts and roads fronting schools.*
- 2) *Road configurations shall allow for widening at horizontal curves and intersections to allow for the turning paths of design vehicles without encroachment upon nominal centrelines of the road network.*
- 3) *Additional widening will be required for the provision of specialist drainage functions within the road reserve.*
- 4) *Additional widening may be required on collector and industrial roads to provide for cyclists in accordance with the Australian Road Design Guidelines. Provision for cyclists will be dependent on Penrith City Council's cycleway strategy and the surrounding cycle network.*
- 5) *Where required additional widening will be required for the provision of central medians, indented bus bays and Planning for Bushfire Protection requirements.*
- 6) *Parking and travel lanes for distributor roads allow for on-road cycle ways.*
- 7) *Rural residential roads for lots less than or equal to one hectare will generally be treated as local roads without the requirement for pedestrian pathways.*
- 8) *Verge widths adjacent to open space shall be a minimum of 3.8m.*
- 9) *Pathways are required on the dwelling side only.*
- 10) *Kerb types shall be consistent with Penrith City Council's Engineering Design Guidelines.*

Local road means a road or street used primarily for property access. Local roads include laneways, access ways and rural residential roads for lots typically less than or equal to 1 hectare.

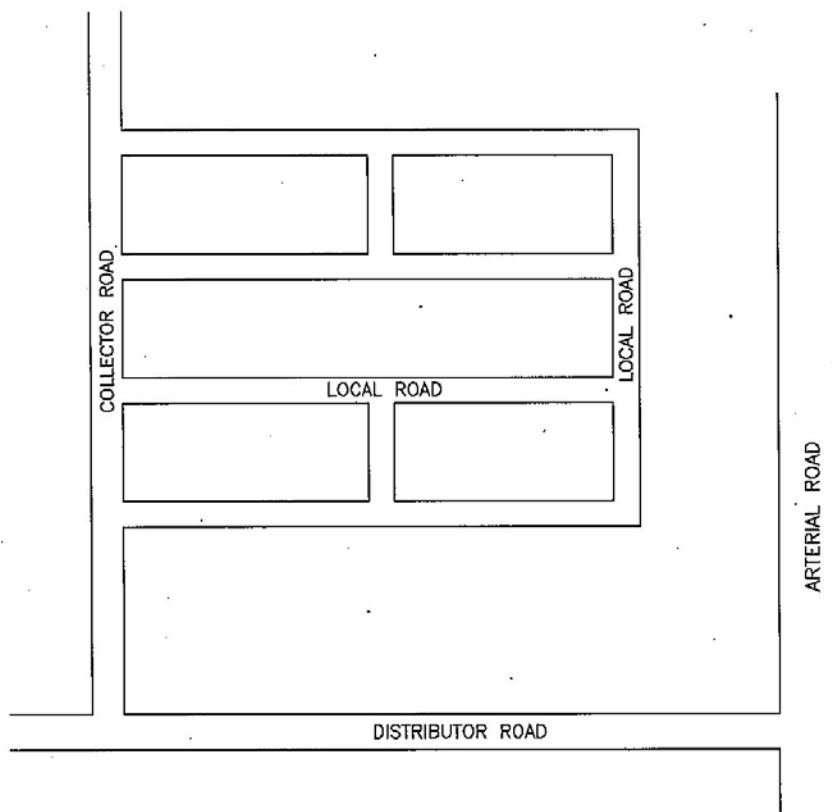
Collector road means a road which collects and distributes traffic in an area, as well as providing direct property access.

Distributor road means a road connecting arterial roads to areas of development.

Industrial road means a road providing access to industrial zoned land and for other development which generates frequent truck movements.

Rural road means a road providing access to rural areas and properties typically exceeding one (1) hectare.

Figure C10.1: Road Hierarchy



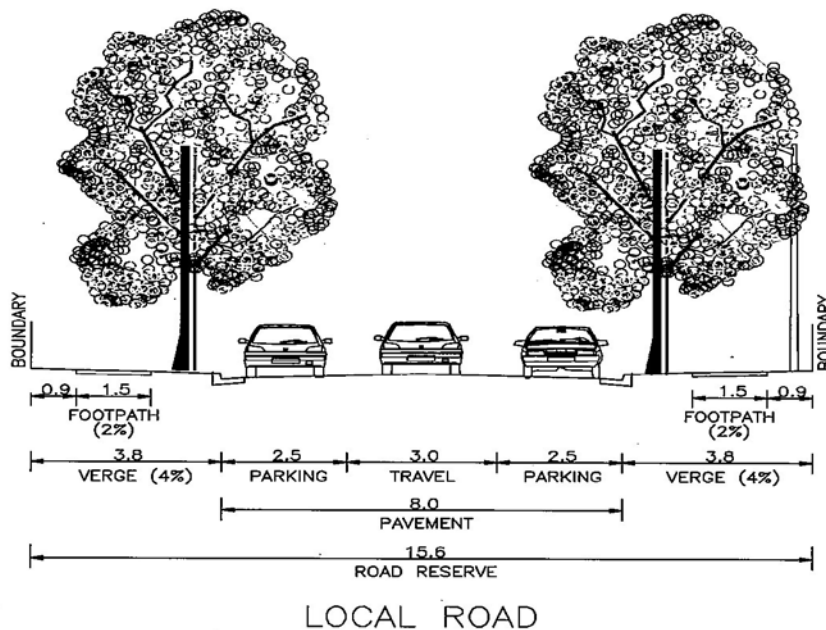
2) Local roads

a) Local roads are to achieve the following performance objectives:

- i) Direct access to residential properties and interconnectivity with other local roads and collector roads;
- ii) Provide for heavy vehicles and emergency vehicles, including circulation and manoeuvring of garbage trucks;
- iii) Ensure only occasional, minor delays or the need for driver co-operation due to vehicles parking on both sides of the road;

- iv) Provide adequate on-street parking;
 - v) Provide pedestrian pathways on both sides of the road; and
 - vi) Provide lighting in accordance with relevant Australian Standards.
- b) Roads are to be designed in accordance Penrith City Council's Engineering Design Guidelines and conditions of development consent with reference to Figure C10.2.
- c) Further controls may be applied as part of a development consent based on the individual circumstances of any proposed layout with reference to the adjoining road network.

Figure C10.2: Local Road

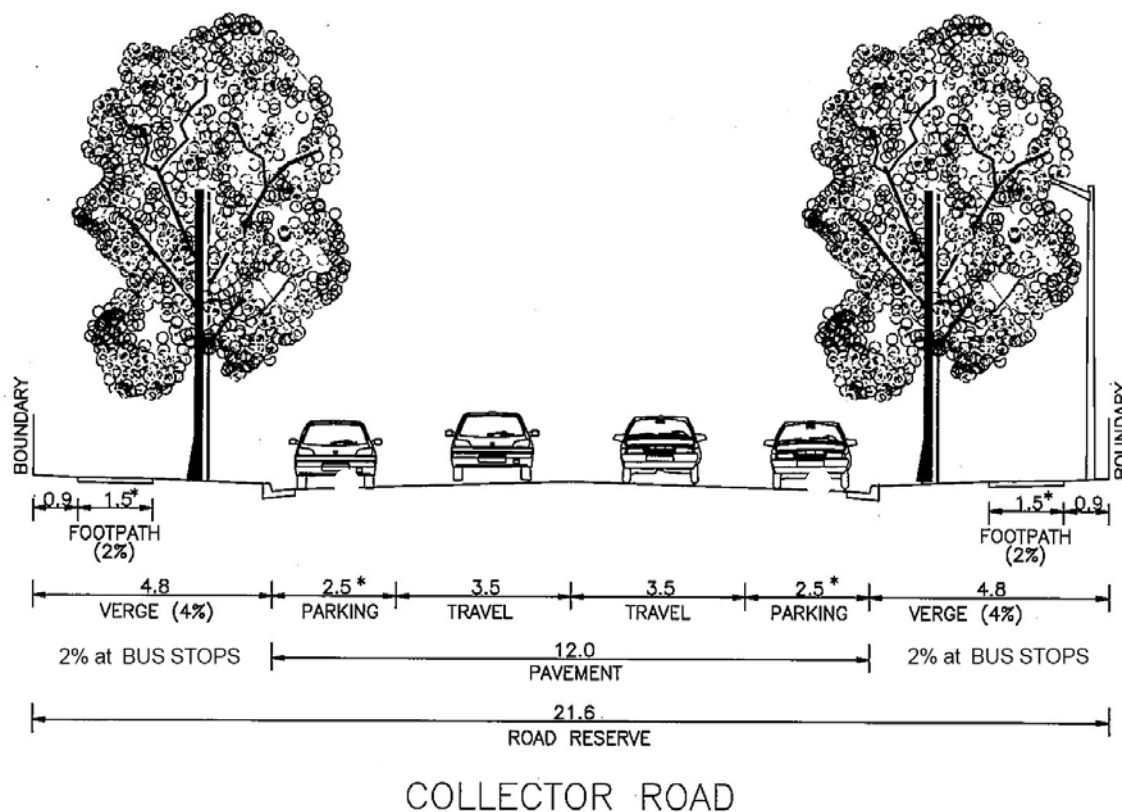


3) Collector roads

- a) Collector roads are to achieve the following performance objectives:
- i) Provide high accessibility for all road users;
 - ii) Be at a scale consistent with the higher order role these roads play in the overall road network;
 - iii) Provide for local bus services within the road lane widths;
 - iv) Provide an off-road shared path. On road cycle ways will be considered in some circumstances;
 - v) Provide pedestrian pathways on both sides of the road with safe crossing points;
 - vi) Integrate pedestrian and cycle pathways with the surrounding network;
 - vii) Provide lighting in accordance with relevant Australian Standards;
 - viii) Provide for turning paths of heavy vehicles at intersections;

- ix) Provide dedicated on-street parking on both sides of the road; and
 - x) Be able to comfortably accommodate the co-location of on-street bus stops, DDA compliant boarding points, bus shelters and pathways.
- b) Roads are to be designed in accordance Penrith City Council's Engineering Design Guidelines and conditions of development consent with reference to Figure C10.3.
- c) Further controls may be applied as part of a development consent based on the individual circumstances of any proposed layout with reference to the adjoining road network.

Figure C10.3: Collector Road

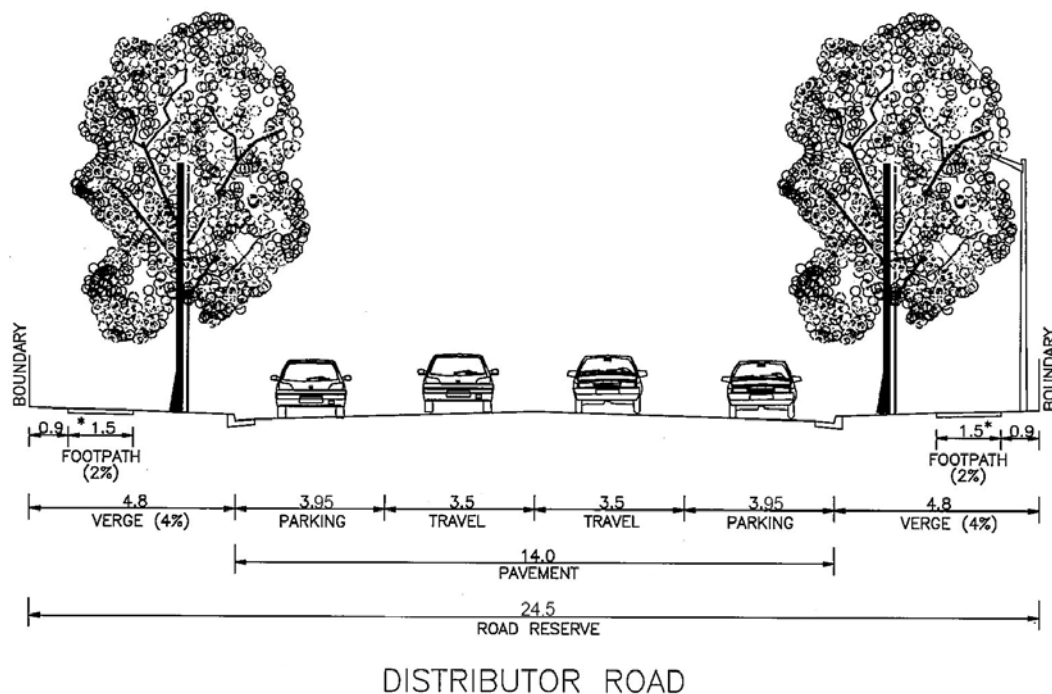


4) Distributor roads

- a) Distributor roads are to achieve the following performance objectives:
- i) Provide high accessibility for all road users;
 - ii) Be at a scale consistent with the higher order role these roads play in the overall road network;
 - iii) Provide for heavy vehicles and buses within the road lane widths;
 - iv) Provide on-road cycle ways (cycleway widths are to be designed from the lip of gutter);

- v) Provide pedestrian pathways on both sides of the road;
 - vi) Provide for turning paths of heavy vehicles at intersections;
 - vii) Provide dedicated on-street parking or additional lanes dependant on traffic volumes; and
 - viii) Be able to comfortably accommodate the co-location of bus shelters and pathways.
- b) Roads are to be designed in accordance Penrith City Council's Engineering Design Guidelines and conditions of development consent with reference to Figure C10.4.
- c) Further controls may be applied as part of a development consent based on the individual circumstances of any proposed layout with reference to the adjoining road network.

Figure C10.4: Distributor Road

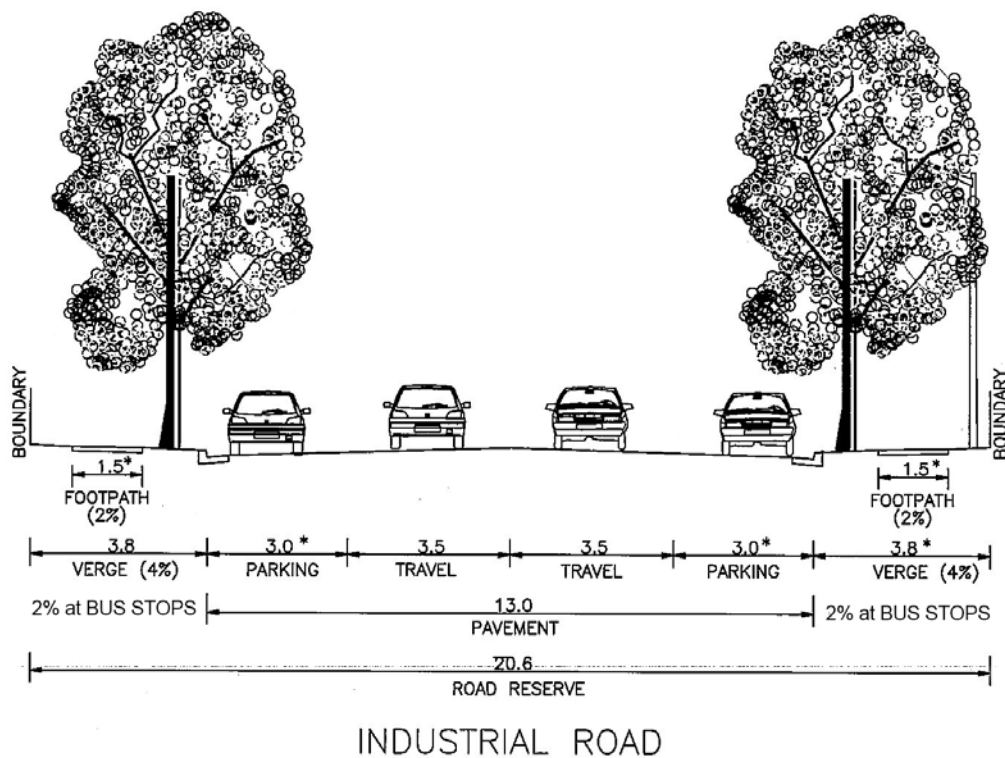


5) Industrial roads

- a) Industrial roads are to achieve the following performance objectives:
- i) Provide direct access to industrial properties and interconnectivity with the adjoining road network;
 - ii) Provide for all classes of heavy vehicles and appropriate circulation;
 - iii) Provide dedicated on-street parking on both sides of the road;
 - iv) Provide a shared path or on road cycle ways; and
 - v) Provide lighting in accordance with relevant Australian Standards.

- b) Roads are to be designed in accordance Penrith City Council's Engineering Design Guidelines and conditions of development consent with reference to Figure C10.5.
- c) Further controls may be applied as part of a development consent based on the individual circumstances of any proposed layout with reference to the adjoining road network.

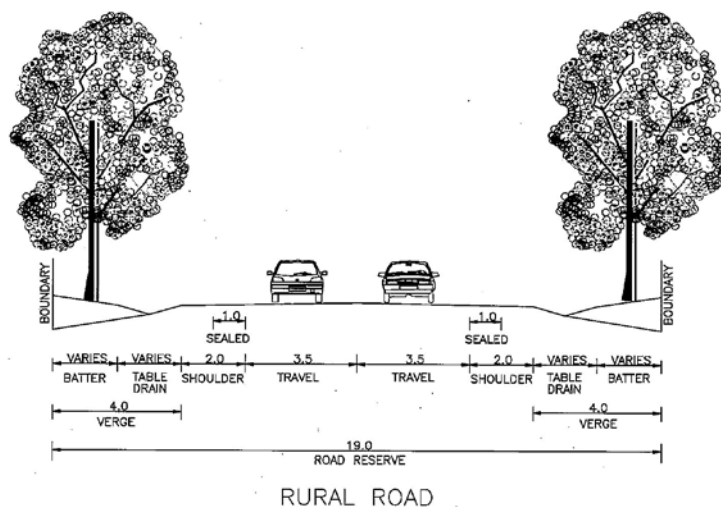
Figure C10.5: Industrial Road



6) Rural roads

- a) Rural roads are to achieve the following performance objectives:
 - i) Provide direct access to residential/rural properties and interconnectivity with the adjoining road network;
 - ii) Provide for all classes of heavy vehicles; and
 - iii) Provide lighting in accordance with relevant Australian Standards.
- b) Roads are to be designed in accordance Penrith City Council's Engineering Design Guidelines and conditions of development consent with reference to Figure C10.6.
- c) Further controls may be applied as part of a development consent based on the individual circumstances of any proposed layout with reference to the adjoining road network.

Figure C10.6: Rural Road



10.5. Parking, Access and Driveways

10.5.1. Parking

A. Background

This section of the DCP provides a set of principles to be used when assessing the need for car parking requirements in the City of Penrith. Minimum parking requirements have been set by Council to ensure that development functions efficiently and there is limited impact on street parking and congestion.

Car parking required by this DCP must be provided for onsite unless the consent authority is satisfied that adequate car parking is provided elsewhere.

Council owned public car parking is not to be included as part of a building's gross floor area.

B. Objectives

- a) To ensure the provision of an appropriate number of vehicular spaces having regard to the activities present and proposed on the land, the nature of the locality and the intensity of the use;
- b) To require parking areas to be designed and constructed in accordance with the Australian Standards for efficient and safe vehicle circulation and parking;
- c) To reduce pedestrian and vehicle conflicts on development sites.
- d) To facilitate an appropriate level of on-site parking provision to cater for a mix of development types;
- e) To minimise the visual impact of on-site parking;

- f) To provide adequate space for parking and manoeuvring of vehicles (including service vehicles and bicycles);
- g) To enable the conversion of above ground parking to other future uses; and
- h) To support the complementary use and benefit of public transport and non-motorised modes of transport such as bicycles and walking.

C. Controls

1) Provision of Parking Spaces

- a) Parking provided on site is to meet AS 2890 and where appropriate, AS 1428.
- b) For any proposed development, Council will require the provision of on-site car parking to a standard appropriate to the intensity of the proposed development as set out in Table C10.2 below.
- c) Within rural zones, the range of possible uses of land is very broad. Car parking is to be provided in accordance with Table C10.2: Car Parking Rates. If parking rates for the use is not listed, it will be the applicant's responsibility to demonstrate that adequate parking is provided.
- d) For commercial developments providing employment for 20 people or more, bicycle parking is to be in secure and accessible locations, and provided with weather protection. The following associated facilities are to be provided:
 - i) Change and shower for cyclists and are to be conveniently located close to the bicycle storage areas.
 - ii) Where the building is to be strata-titled, the bicycle storage facilities and shower/change facilities are to be made available to all occupants of the building.
- e) For existing developments, a new use must not commence or the floor area increased until the required car park spaces have been provided on the site, corresponding to the land use outlined in Table C10.2.
- f) In the absence of specific requirements relevant to particular developments, the parking requirements in the RTA's "Guide to Traffic Generating Developments" (as updated) and Australian Standard AS 2890.1 and 2 - 2004 should be referred to as a guide. In the absence of all data, the applicant should revert to the use of first principles.
- g) Where relevant, development shall provide on-site loading facilities to accommodate the anticipated heavy vehicle demand for the site.
- h) Stacked parking will not be permitted for visitor spaces for any development.
- i) Stacked parking in commercial or industrial development may be permitted for employee spaces only, provided the number of stacked spaces does not account for more than 10% of the total required parking spaces.
- j) Car parking above ground level is to have a minimum floor to ceiling height of 2.8m so it may be adapted to another use in the future.

- k) Car parking and associated internal manoeuvring areas provided over and beyond the requirements of this DCP shall be calculated as part of the development's gross floor area.
- l) Where possible, natural ventilation is to be provided to underground parking areas with ventilation grilles and structures that are:
 - i) integrated into the overall façade and landscape design of the development;
 - ii) located away from the primary street façade; and
 - iii) oriented away from windows of habitable rooms and private open space areas.
- m) Proposals for basement parking areas are to be accompanied with a geotechnical report prepared by an appropriately qualified professional and any other supporting information to the Development Application.
- n) For all residential development at least one car parking space for each dwelling shall be covered the second space may be "stacked" or "tandem" or located on a driveway.

Table C10.2: Car Parking Rates

Type of Development	Parking Requirement
Residential	
Dwelling House	2 spaces per dwelling – stack or tandem parking acceptable
Dual Occupancy	2 spaces per dwelling (2 or more bedrooms) – stack or tandem parking acceptable
Multi Dwelling Housing	<p>On-site resident parking for each dwelling:</p> <p>1 car space per 1 bedroom</p> <p>1.5 car spaces per 2 bedrooms or part thereof</p> <p>2 car spaces per 3 or more bedrooms</p> <p>In addition, visitor parking is to be provided for developments that have 5 or more dwellings: 1 space for every 5 dwellings (or part thereof)</p>
Residential Flat Buildings	<p><u>On-site resident parking for each dwelling:</u></p> <p>1 space per 1 or 2 bedrooms</p> <p>2 spaces per 3 or more bedrooms</p> <p>1 space per 40 units for service vehicles</p> <p>In addition, visitor parking is to be provided for developments that have 5 or more dwellings: 1 space per every 5 dwellings, or part thereof.</p> <p>1 space for car washing for every 50 units, up to a maximum of 4</p>

Type of Development	Parking Requirement
	spaces per building.
Commercial	
Bowling Alleys, Squash Courts	3 spaces per lane or court
Bulky Good Premises	1 per 50m ² of gross floor area
Business and office premises	<p>St Marys Town Centre– 1 space per 60m² GFA</p> <p>Penrith City Centre –1 space per 100m² GFA</p> <p>(Please see “Other Site Specific Requirements” at the end of this table for additional requirements for parking provision in the Penrith City Centre.)</p> <p>All other areas – 1 space per 40m² GFA.</p>
Child Care Centres/Pre Schools	<p>1 space per 10 children plus 1 per employee plus provision for any dwelling.</p> <p>Note: Where a child care centre/pre-school is not located in or immediately adjoining a residential area, a submission to vary the above parking rates will be considered.</p>
Entertainment Facilities/Function Centres	1 space per 3.5 seats or 1 space per 3.5m ² of gross floor area, whichever is the greater
Fitness Centre including Gym	7 spaces per 100m ² GFA
Health Consulting Rooms/ Medical Centres	3 spaces per health care professional practising at any one time plus 1 space per receptionist/support staff, plus 1 space per associated dwelling.
Hospitals	1 space per 3 beds plus 1 space per 2 employees
Hotel or motel accommodation	1 space per unit plus 1 space per manager plus 1 space per 6 employees
Place of public worship	1 space per 4 seats or 1 space per 6m ² of gross floor area, whichever is the greater
Pubs/Registered Clubs	1 space per 4m ² of bar floor area plus 1 per 6m ² lounge and dining room
Restaurants, reception and function rooms	1 space per 6m ² of seating area, plus 1 space per employee
Retail Premises	Penrith City Centre and St Marys Town Centre – 1 space per 30m ² GFA

Type of Development	Parking Requirement
	(Please see "Other Site Specific Requirements" at the end of this table for additional requirements for parking provision in the Penrith City Centre.)
Retail Premises Shop	Supermarkets – 1 space per 10m ² of floor area that is to be used for retailing activities Other neighbourhood and specialty shops – 1 space per 30m ² GFA
Service Stations and Convenience Stores	6 spaces per work bay plus 4 spaces per 100m ² of gross floor area of convenience store
Vehicle Sales or Hire Premises	1 space per 100m ² of display area plus 1 space per employee, plus 6 spaces per work bay
Industrial	
Freight Transport Facilities	1 per transport vehicle present at peak vehicle accumulation plus 1 per 2 employees
Industries, including ancillary office	1 space per 75m ² of gross floor area or 1 space per 2 employees, whichever is the greater
Vehicle Body Repair Workshops/ Vehicle Repair Stations	3 spaces per 100m ² of gross floor area or 6 per work bay, whichever is the greater
Warehouses or distribution centres, including ancillary office	1 space per 100m ² of gross floor area (except as otherwise specified in this Table)
Other Uses	In accordance with RMS Guidelines or if there are no parking guidelines for a specific use, then a site specific car parking analysis will be required. This may require the applicant to submit a car parking report from a suitably qualified traffic consultant.
Accessible Parking	
Accessible car spaces should be in accordance with the Access to Premises Standards, Building Code of Australia and AS2890.	
Bicycle Parking	
Bicycle parking in accordance with the suggested bicycle parking provision rates for different land use types in the document 'Planning Guidelines for Walking and Cycling' (NSW Government 2004). Bicycle parking spaces should comply with AS2890.3:1993 Bicycle Parking Facilities.	
Other Site Specific Requirements	

Type of Development	Parking Requirement
<p>Penrith City Centre – A maximum 60% of the total number of commercial parking spaces required by a development, other than for service vehicles, car washing bays and parking spaces allocated to people with a disability, are to be provided on-site.</p> <p>The balance of the total required number of spaces not provided on-site would need to be subject to a contribution under an adopted Contribution Plan or as set by the terms of a Voluntary Planning Agreement.</p> <p>Oakdale South Industrial Estate</p> <p>Car parking shall be provided in accordance with the following rates (unless evidence is provided in accordance with Part C10, Section 10.5.1, C1) f) of the Penrith DCP:</p> <ul style="list-style-type: none"> • 1 space per 300m² of warehouse gross floor area (GFA); • 1 space per 40m² of office GFA; and • 2 disabled spaces for every 100 car parking spaces. • Underground / basement car parking is not permitted at Oakdale South Industrial Estate. 	

2) Additional Controls for Developments within the Commercial Core and Mixed Use zones

- a) On-site parking is to be accommodated in basement parking except to the extent provided for below:
 - i) Up to 25% of the required parking can be provided above ground, where: it is located at least 16 metres behind a building alignment that addresses a public street or public space and/or fronting a service lane with appropriate screening (refer to Figure C10.7 and C10.8).
 - ii) Any additional parking provided above ground will count towards gross floor area for the purposes of calculating Floor Space Ratio.

Figure C10.7: Aboveground parking must be screened by an active edge to the public domain

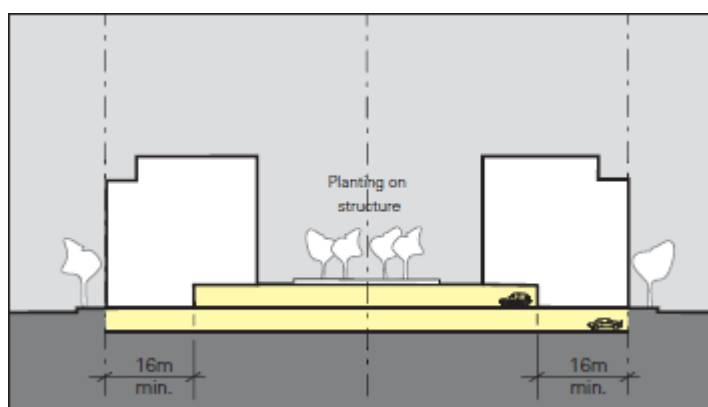
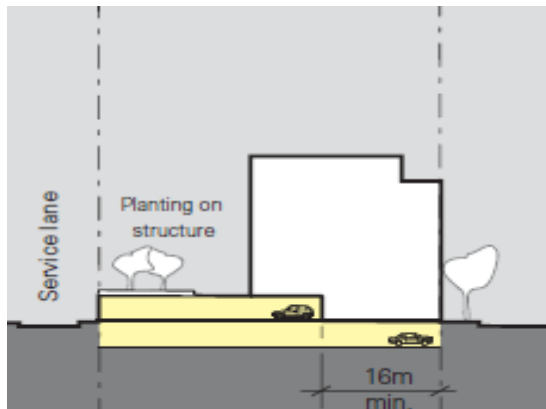


Figure C10.8: Aboveground parking may be located adjacent to a lane, with appropriate screening to reduce the impact on the public domain



3) Additional Controls for Residential Developments

- a) On-site parking for residential developments, including the residential component in a mixed use development, is to be accommodated wholly in a basement parking area unless the applicant can demonstrate to Council's satisfaction that the site's unique conditions prevent the parking from being located in a basement structure.
- b) If on-grade car parking is proposed, the location and adequacy of the parking area must not adversely impact on the amenity of the adjoining neighbourhood. The parking area is to:
 - i) be located on the side or rear of the site, and is not visible from the street and street frontage;
 - ii) be landscaped or screened so that cars parked in the parking area are not visible from adjoining buildings or the street/ street frontage; and
 - iii) allow safe and direct access to the building entry points.

4) Waiver or Reduction of Parking Spaces

- a) Council has the discretion to waive or reduce the number of car spaces required for a particular site if the reduced provision can be justified in a Traffic Impact Statement, in terms of:
 - i) Proximity to public transport nodes;
 - ii) Opportunity to share parking with another use; or
 - iii) An empirical assessment of car parking.
- b) Council may consider a monetary contribution in lieu of parking shortfall in certain circumstances where a waiver or reduction of parking spaces cannot be justified. All such cases will be considered on their individual merit and the contribution will be based on the current parking rate in respect of off-street parking demand generated by the development but not satisfied on the site. The parking contribution will be based on the actual cost of providing additional parking off site.

5) Design of Parking and Manoeuvring Areas

- a) Car space dimensions must comply with the relevant Australian Standards.
- b) The movement of pedestrians throughout the car park should be clearly delineated and be visible for all users of the car park to minimise conflict with vehicles. The car parking and manoeuvring layout should be in accordance with the provisions of AS 2890.1 - 2004.
- c) Provision of parking spaces for disabled persons should be in accordance with the Access to Premises Standards, the Building Code of Australia and AS2890.
- d) Council will require all car parking areas to be constructed of hard standing, all weather material, with parking bays and circulation aisles clearly delineated.
- e) Vehicle access is to be integrated into the building design as to be visually recessive.
- f) It will be necessary for the method of treating and minimising runoff from parking and access areas to be addressed as part of any development application (See the section entitled 'Stormwater and Drainage' in the Water Management Section).
- g) For development in the R4 High Density Residential zone, use semi-pervious materials for all uncovered parts of driveways and parking areas to assist with stormwater infiltration.
- h) Large car parking areas (more than 5 vehicles) should be visually separated from access roads and from the buildings they serve by planting and other landscaping and should not be visually prominent from public roads, either through separation or screening.
- i) All vehicles must be able to enter and leave the site in a forward direction without the need to make more than a three point turn.
- j) Council may require the provision of internal directional signs to assist site visitors in locating parking areas.
- k) For residential development, other than a single residence, the minimum space width shall provide for full door opening in accordance with Table B1 of AS2890.1 – 2004.
- l) The design of the car park should ensure that passive surveillance is possible and, where appropriate, incorporate active measures such as cameras and security patrols. Car parks should be designed to minimise dark areas through the provision of appropriate lighting.
- m) Access to security parking shall be designed to ensure the access mechanism is accessible to the vehicle driver on the entry side of the driveway.
- n) Provision should be made for all vehicles to enter and exit a secure (i.e. boom-gated) area in a forward direction.
- o) Visitor parking should be provided outside the secured parking areas.
- p) The design of car parks should ensure adequate separation of staff/visitor parking and loading dock circulation areas for heavy vehicles.
- q) Vehicular ramps less than 20m long within developments and parking stations must have a maximum grade of 1 in 5 (20%). Ramp widths must be in accordance with AS2890.

- r) Access ways to underground parking should be sited to minimise noise impacts on adjacent habitable rooms, particularly bedrooms.
- s) Loading docks associated with the development shall be provided on-site, with all loading and unloading activities occurring on-site.
- t) All loading and unloading areas are to be:
 - i) integrated into the design of developments,
 - ii) separated from car parking and waste storage and collection areas,
 - iii) located away from the circulation path of other vehicles,
 - iv) provided separately for commercial/retail and residential uses, where part of a mixed use development, and
 - v) designed for commercial vehicle circulation and access complying with AS 2890.2.
- u) Vehicular access to the loading / unloading area(s) is preferred off rear lanes, side streets and right of ways. Where appropriate, consider a single vehicular access point for the loading/unloading area(s) and waste collection area(s).
- v) Secure multi-deck car parks should incorporate communication devices such as:
 - i) Intercoms at boom gates;
 - ii) Public address systems;
 - iii) Telephones; or
 - iv) Emergency alarms.
- w) To ensure users of secure multi-deck car parks are easily able to determine the location of exit and access points, security intercoms or similar and appropriate signage are to be included.
- x) All surfaces in the car park should be painted in light coloured paint or finished in light grey concrete to reflect as much light as possible.
- y) All potential entrapment points should be avoided, e.g. under stairs, blind corners and wide columns. Adequate lighting and mirrors should be used when certain design features are unavoidable.
- z) Access, parking, manoeuvring and loading facilities for commercial and industrial development shall be in accordance with AS 2890.2 - 2004 and accommodate vehicle types as outlined in Table C10.3.
- aa) Council may require a development to cater for vehicles larger than the minimum specified above where the development is for uses such as a transport depot, warehouse, etc. All service vehicles must enter and exit the development site in a forward direction.

Table C10.3: Minimum design vehicle requirements for commercial and industrial developments - minimum design vehicle requirements

Site Area	Design Vehicle
Up to 1,500m ²	Medium Rigid Vehicle (MRV)
1,500m ² to 4,000m ²	Heavy Rigid Vehicle (HRV)
Greater than 4,000m ²	Articulated Vehicle

Additional guidelines for the design of car parking areas can be found within the Policies, Guidelines and Procedures for Traffic Generating Development published by the RMS.

10.5.2. Access and Driveways

A. Objectives

- a) To ensure satisfactory arrangements are made for access to any development or new allotment created by subdivision;
- b) To require that access internal to the development is adequate to accommodate traffic generated by the development;
- c) To minimise the impact of vehicle access points on the quality of the public domain;
- d) To minimise the impact of driveway crossovers on pedestrian safety and streetscape amenity;
- e) To minimise stormwater runoff from uncovered driveways and parking areas;
- f) To ensure that access ways and driveways provide safe access from a property to a public road; and
- g) To ensure driveways do not negatively impact on pedestrian mobility.

B. Controls

1) General Requirements

- a) The road access to the site should provide for safe entry to and exit from the site. All vehicles must enter/exit the site in a forward direction. (This does not apply to single dwellings).
- b) The entry and exit from the site should provide for appropriate traffic sight distance in both directions, in accordance with the provisions of AS2890.1 and 2 - 2004 for car parking and commercial vehicles respectively.
- c) The design of the development driveway should take into consideration the traffic volumes of the surrounding road network.
- d) Driveways should be:

- i) Provided from lanes and secondary streets rather than the primary street, wherever practical;
 - ii) Located taking into account any services located within the road reserve, such as power poles, drainage inlet pits and existing street trees;
 - iii) Setback a minimum of 6m from the perpendicular of any intersection of any two roads; and
 - iv) Located to minimise noise and amenity impacts on adjacent residential development.
- e) The driveway crossing and access roads shall be designed in accordance with the provisions of AS2890.1 and 2 - 2004 for car parking and commercial vehicles respectively.
- f) Driveway widths must comply with the relevant Australian Standards.
- g) Driveway grades, vehicular ramp width/grades and passing bays must be in accordance with the relevant Australian Standard (AS2890.1).
- h) Access to basement parking shall have an entry threshold a minimum of 300mm above the top of the kerb. The threshold shall be increased within areas of flooding or local overland flows to a minimum of 300mm above the flood level. The design of the development shall ensure that floodwater cannot enter the car park in a 1% Annual Exceedance Probability (AEP) flood event.
- i) The required threshold should be set within the property to prevent cross fall greater than 4% within the footway area.
- j) No direct access will be permitted to the M4 Western Motorway.

2) Design

- a) For rural subdivisions, the width of sealed surface shall be determined at the time of subdivision taking into consideration the intensity of use, landscaping proposals, servicing requirements and drainage design. Roads should be designed to enhance the rural character and long stretches of straight road should be avoided.
- b) All driveways (including in rural and environmental zones) are to be sealed from the point of the public road up to and including the hard-stand parking areas.
- c) The design of rural driveways shall ensure that stormwater is not impounded, concentrated or redirected onto adjoining properties.

3) Construction Standards

- a) Roads shall be constructed to Council's standards in consultation with Council's Engineering Services Unit and Council's 'Guidelines for Engineering Works - Development and Subdivision'.
- b) Design drawings should be accompanied by details of the erosion and sediment control measures that are to be implemented during construction.

4) Dedication

- a) New road reservations and rights-of-way shall be dedicated or created at no cost to Council.

5) Access to Allotments Created in Subdivision

- a) New allotments must have direct access to dedicated public roads.
- b) Where battle-axe subdivision is supported, the following controls apply:
 - i) The battle-axe width is generally to be a minimum of 10m. Where two battle axe developments adjoin reciprocal rights-of-carriage way may be permitted;
 - ii) The battle-axe handle is to be stabilised or sealed depending on the anticipated intensity of use; and
 - iii) The line of any sealed or stabilised area within the battle-axe handle should be varied and landscaped where appropriate to avoid a 'gunbarrel' appearance.
- c) Passing bays will be required for the following:
 - i) Entry/exit of all properties;
 - ii) Access handles;
 - iii) More than one allotment; and
 - iv) Change in direction of the access handle.
- d) Bushfire requirements must be considered when designing access roads for subdivisions of land which is classified as 'bushfire prone land'. Access arrangements must include adequate provision for turning areas and emergency access.

6) Responding to Topography

- a) Natural contours should be followed when designing and constructing driveways. Driveways should be located to retain as much of the property's vegetation as practicable.
- b) Any new private access roads or driveways that connect to a public road should be sealed with asphalt or another suitable surface from the public road to prevent erosion and minimise dust and dirt transfer.

10.6. Pedestrian Connections

A. Objectives

- a) To provide a safe, convenient and legible movement network for people with diverse abilities, including those using wheelchairs, mobility scooters, people with prams, small children, elderly people and people with temporary injuries, between residences and points of attraction within and beyond the development;

- b) To design street networks to optimise personal mobility access to centres, schools, public transport stops and stations, and other destinations;
- c) To design major routes as 'integrator arterials' with extensive and frequent opportunity for pedestrians to move safely along and across them;
- d) To design and detail new developments to promote and support personal mobility to daily activities;
- e) To provide pedestrian pathways through parks for recreation purposes wherever practicable; and
- f) To provide walking routes along predictable pathways of travel, including approaches to schools, parks and shopping precincts.

B. Controls

- 1) Footpaths should have ramps at all kerb corners for wheelchairs and pram access and cater for all people with diverse abilities in line with current Australian Standards.
- 2) Street lighting in accordance with the provisions of AS1158 should be present in all urban streets, while on rural traffic routes in general only intersections will be lit. Refer to Section C8 'Public Domain, for further information about lighting.
- 3) Pedestrian crossing distances in local streets should be shortened through kerb extensions and tight turning radii, which can cause vehicular traffic to slow to negotiate the tighter corners.
- 4) To enable comfortable passage for all people with diverse abilities, footpaths must be:
 - i) Provided on both sides of the road in urban areas;
 - ii) A minimum of 1.5m wide along collector and all lower order streets; and
 - iii) A minimum of 2.5m on approach routes to predictable destinations such as schools, parks and shopping precincts. (Three metre paths or wider are preferred).
- 5) Where street trees are not required to provide protection from passing cars for people on footpaths, a minimum outer nature strip of 0.5m on both sides of the street should be provided. Kerbs should be 'barrier' not 'rollover' design.
- 6) A durable, non-slip surface and even paving is to be designed and constructed for minimum maintenance. Continuous pathways, uninterrupted by variations in surface material must be provided.
- 7) Gradients from pathways to streets are to be minimal, safe and comfortable for people with limited mobility and those using wheelchairs, prams and trolleys in line with current Australian Standards.
- 8) Gradients and ramps must be aligned with desired paths of travel for pedestrians and cyclists.
- 9) A smooth transition from ramps to roads is to be provided for people using wheelchairs or prams. Ramps should be designed in accordance with appropriate design guidelines

and be as wide as the pathway or marked crossing point to eliminate squeeze points at transition areas.

- 10) Reconstructed driveways/pathways are to achieve a useable cross slope for a width of 915mm. Cars must slow to negotiate the two steeper ramps on either side of the pathway crossing, but will not 'bottom out' at these angles. (Source: Preiser. W and Ostroff E (2001) *Universal Design Handbook* McGraw-Hill).

10.7 Bicycle Facilities

A. Objectives

- a) To encourage bicycle use by providing sufficient number of secure and accessible bicycle parking spaces with new developments.

B. Controls

1. Cycleways

- a) All cycle routes and facilities are to be consistent with the relevant requirements of "Austroads Cycling Aspects of Austroads Guides" and Roads and Maritime Services' "Bicycle Guidelines" including line-marking, signage and logos and Council policies regarding bicycle access.
- b) The minimum width of off-street shared cycle and pedestrian pathways is to be 2.5m on local routes with a minimum of 3m on major connector routes.
- c) Pedestrian and cycle routes and facilities in public spaces are to encourage way finding and be convenient, safe, well lit, clearly defined, functional and accessible to all.
- d) Shared paths and pedestrian refuge islands are to be designed to be fully accessible by all in terms of access points and gradients, in accordance with Australian Standard 1428:1-4.

2. Provision of Bicycle Parking Spaces

- a) For commercial developments providing employment for 20 people or more, bicycle parking is to be in secure and accessible locations, and provided with weather protection, in accordance with AS2890.3:1993 Bicycle Parking Facilities.
- b) The following associated facilities are to be provided:
 - i) Change and shower facilities for cyclists are to be conveniently located close to the bicycle storage areas; and
 - ii) Where the building is to be strata-titled, the bicycle storage facilities and shower/change facilities are to be made available to all occupants of the building.
- c) Applicants should comply with the suggested bicycle parking provision rates for different land use types in the document 'Planning Guidelines for Walking and Cycling' (NSW Government 2004).

3. Design of bicycle spaces

a) Bicycle parking spaces must:

- i) Be provided in accordance with AS2890.3:1993 Bicycle Parking Facilities;
- ii) Be located to provide convenient access from surrounding bicycle routes and main building entrances;
- iii) Not interfere with reasonable access to doorways, loading areas, access covers, furniture, services and infrastructure;
- iv) Not cause a hazard; and
- v) Be adequately lit during periods of use.

4. Bicycle Rails, Storage and Signage

a) A bicycle rail must:

- i) Be securely fixed to a wall or to the floor or ground;
- ii) Be in a highly visible location for bicycle security (when not in a compound);
- iii) Be of a shape that allows a cyclist to easily lock the bicycle frame and wheels; and
- iv) Be located to allow easy access to park, lock and remove the bicycle.

b) A bicycle compound or a bicycle locker must:

- i) Be located to provide convenient access to other bicycle facilities including showers and change rooms;
- ii) Be fully enclosed;
- iii) Be able to be locked; and
- iv) If outside, provide weather protection for the bicycle.

Table of Contents

C11 SUBDIVISION	2
11.1. GENERAL SUBDIVISION REQUIREMENTS	2
11.2 RURAL SUBDIVISION	8
11.3. RESIDENTIAL SUBDIVISION	9
11.3.1. ALLOTMENT ORIENTATION	11
11.3.2. SITE FRONTAGE	12
11.3.3. ALLOTMENT DIMENSIONS	13
11.3.4 ROAD NETWORK	14
11.3.5 ROAD DESIGN AND CONSTRUCTION	15
11.3.6. LANDSCAPING AND SITE DESIGN	17
11.3.7 SERVICES	19
11.3.8. DRAINAGE	20
11.3.9. PUBLIC OPEN SPACE	21
11.3.10 ENVIRONMENTAL SITE MANAGEMENT	22
11.4. INDUSTRIAL SUBDIVISION	23
11.4.1. SUBDIVISION – LOT STANDARDS	23
11.4.2. SUBDIVISION – ACCESS ROADS	25
11.4.3. SUBDIVISION – OTHER REQUIREMENTS	26

C11 Subdivision

A. Background

During the past decade, the City of Penrith has experienced rapid and sustained urban growth. To a large extent, Penrith's development has resulted from the release of new residential areas but some has also come from standard subdivisions of rural, industrial and residential land. The combination of continued population growth, an ageing population and pressures of housing affordability will create a demand for new and varied types of development sites.

After rezoning, the subdivision of land is one of the first steps in the development process, which has the potential to significantly impact the environment, society and culture, infrastructure and the amenity of an area.

This section of the DCP should be read in conjunction with the 'Sustainability Blueprint for New Release Areas'.

B. General Objectives

- a) To consider and address the principles of sustainable development in determining the location, design and future use of subdivided land;
- b) To address the objectives and controls in this DCP relating to social, economic, environmental and built form principles to maximise sustainable development outcomes; and
- c) To provide efficient subdivision layouts that meet the needs of the proposed land uses and activities, and market requirements for those land uses/activities.

C. Other Relevant Sections of this DCP

Applicants should read this Section of the DCP in conjunction with other relevant sections.

11.1. General Subdivision Requirements

A. Objectives

- a) To address site planning principles in the design of the subdivision layout;
- b) To preserve and retain significant environmental and cultural features of the site, such as waterways, riparian corridors and heritage items.
- c) To address environmental constraints, including flooding, drainage, slope, erosion and land within, or adjacent to, natural resource sensitive land and to ensure that any future development will not be subject to an unacceptable level of risk from natural hazards;
- d) To encourage the retention of significant existing vegetation;
- e) To adequately provide services to, and mechanisms for, the effluent disposal from any proposed allotment(s); and

- f) To address any access and traffic constraints and maximise vehicle and pedestrian safety.

B. Controls

1) Engineering Works

- a) Where roads and other engineering works are required to support a proposed subdivision, details must be included in the development application. Applicants are advised to consult with Council's Development Services Unit in relation to any subdivision proposal.

2) Site Planning

- a) Any proposed subdivision must demonstrate how the proposed subdivision design has taken into account the principles set out in Section C1 'Site Planning and Design Principles' of this DCP. This includes, but is not limited to:
 - i) Site analysis and response to the site context;
 - ii) Social impact of the proposed subdivision;
 - iii) Economic assessment of the proposed subdivision;
 - iv) Environmental assessment of the proposed subdivision;
 - v) Urban design assessment of the proposed subdivision;
 - vi) Compliance with the provisions of this DCP relating to specific land uses;
 - vii) The allotment size, shape and orientation;
 - viii) The alignment of roads with the natural topography;
 - ix) Potential energy and water savings from subdivision design and allotment orientation; and
 - x) The ability of proposed allotments to operate efficiently for the proposed use and potential future development.
- b) As part of any site analysis, the proposed subdivision must demonstrate its integration with the natural and physical features of the site including, but not limited to:
 - i) Slope and orientation of land;
 - ii) Opportunities for solar and daylight access to dwellings (if applicable);
 - iii) Design of roads and access ways (individual site access);
 - iv) Retention of special qualities or features such as trees or views;
 - v) Availability of utilities;
 - vi) Provision of adequate site drainage;

- vii) Possible need to retain the existing subdivision character;
 - viii) Heritage and archaeological conservation;
 - ix) Adequacy of each allotment considering relevant development standards for the proposed future use of the land;
 - x) Relationship to adjacent subdivision patterns; and
 - xi) Potential land use conflicts with adjacent lands.
- c) Existing vegetation and natural drainage lines should be retained and enhanced, wherever possible.
 - d) Existing dams should be retained, where possible.
 - e) Long and narrow allotments should be avoided. Allotments should have a maximum of 4:1 depth to width ratio.
 - f) 'Battle-axe' allotments are discouraged by Council. No more than two allotments shall be served by a shared access corridor. Where a corridor is shared, reciprocal rights of way and easements for drainage shall be granted over the access corridor for the benefit of both allotments.
 - g) Applications for subdivision need to demonstrate that each of the proposed allotments can support the proposed development/buildings by providing a *Potential Development Area Plan*. This Plan (based on a survey diagram) shall show the potential development area of each allotment (after taking into account setbacks that may be required to meet built form or environmental controls in this DCP).
 - h) Applications should be accompanied by landscape plans indicating proposed landscaping (including streets and how they are positioned so as not to compromise the effectiveness of street lighting) and parking arrangements.
 - i) New allotments should be located so as to protect, enhance or conserve areas of high scenic or recreational value. Council may consider subdivisions/buildings in these higher value areas where ridgelines, vistas and other geographic features are not interrupted or where building materials that blend with the environment are to be used.

3) Subdivision of Natural Resources Sensitive Land

- a) Where applicable, applicants are required to address the environmental impacts of any proposed subdivision of land where the proposed allotment(s) are within or adjacent to land shown on the Natural Resources Sensitivity Land Map of the LEP.
- b) Council will generally not support the subdivision of land within or adjacent to the land noted on the Natural Resources Sensitivity Land Map where the subdivision will result in fragmentation that will make control of environmental outcomes difficult to achieve.
- c) Council may require dedication of conservation easements, where necessary, over land adjacent to land shown on the Natural Resources Sensitivity Land Map to protect areas identified to be of significance.

4) Vegetation Management

- a) Any subdivision proposal is required to address the objectives and controls set out in the Vegetation Management and Landscape Design sections with particular focus on the protection of existing vegetation.
- b) Not more than 10% of the vegetation on any site shall be cleared (or required to be cleared) as a result of any subdivision proposal.
- c) The design of any subdivision layout must ensure that the potential development pattern supported by the proposed subdivision design will be consistent with the existing landscape character of the area.
- d) A subdivision application on land identified as or adjacent to 'bushfire prone land' will need to address the controls set out in the Vegetation Management Section relating to bushfire protection and the provision of asset protection zones. Where possible, removal of significant vegetation is to be minimised.
- e) Tree protection measures must be provided in accordance with Australian Standard AS 4970-2009 Protection of trees on development sites.

5) Water Management

- a) Any subdivision proposal is required to address the objectives and controls set out in the Water Management Section. The subdivision design should consider the following and incorporate measures to address:
 - i) The potential impacts of any future development on water catchments and surface water quality;
 - ii) The potential impacts of any future development on watercourses, riparian corridors and wetlands or other environmentally sensitive areas. Lot design may need to facilitate the fronting onto riparian land to facilitate surveillance and prevent degradation of these areas;
 - iii) The potential for flood risk and damage to life and property and the need to provide safe emergency access/egress from the site;
 - iv) Issues arising from stormwater and drainage requirements; and
 - v) The potential for the site design to incorporate features of water sensitive urban design.
- b) Council will not approve any subdivision of lots where it is evident that a flood free building envelope and safe internal access from/to the public road cannot be provided. The building envelope for any dwelling should be flood free in a 1:100 Average Recurrence Interval (ARI) flood. Evidence of this must be provided as part of any application.
- c) Council will not support the subdivision of any land located in a floodway or areas of high flood hazard.
- d) Subdivision of land below the flood planning level in rural zones creating additional allotments will generally not be supported. However, Council may consider a subdivision application where the applicant can demonstrate that:

- i) the flood hazard is low;
 - ii) flood free access can be provided; and
 - iii) a minimum of 1,000m² within each allotment is flood free, allowing for a dwelling and all ancillary works;
- e) Generally, land situated within existing residential, commercial and industrial zones may only be subdivided to enable its development for urban purposes where the level of the existing land to be developed is not lower than the 1:100 ARI flood. All lots created by such subdivision shall have the portion of the lot that can be built upon filled to a level at least 0.5m above the 1:100 ARI flood.
- f) Significant filling of flood planning land will not be supported. If minor filling is required on flood planning land, the provisions relating to flood liable lands will apply (refer to the Water Management section).

6) Land Management

- a) Any subdivision proposal is required to address the objectives and controls set out in the Land Management section with particular focus on ensuring that the proposed subdivision is appropriate taking into consideration:
- i) Site instability due to geology, slope or landfill;
 - ii) The need for excavation and fill to create developable allotments;
 - iii) The potential for erosion and sedimentation; and
 - iv) The potential for salinity.
- b) Any subdivision application must address whether the proposed site has any potential for contamination (in accordance with the *Contaminated Land Management Act 1997*), other than by normal grazing activities. If required by Council, the land will need to be remediated in accordance with legislative requirements before subdivision can be permitted.

7) Culture and Heritage

- a) Subdivision of a heritage item or in the vicinity of a heritage item or where there is the likelihood of an Aboriginal archaeological heritage item must address the objectives and controls set out in the Culture and Heritage section. The proposed subdivision must minimise:
- i) The impact on Aboriginal or European archaeology on the site; and
 - ii) The impact on Aboriginal objects and places.

8) Access and Transport

- a) Any subdivision proposal is required to address the objectives and controls set out in the Transport, Access and Parking section with particular focus on ensuring that the proposed subdivision is appropriate taking into consideration:
- i) The appropriate location of land uses to minimise transport requirements;

- ii) Likely traffic generation;
 - iii) Safe access and egress to the site; and
 - iv) Appropriate lot sizes to provide facilities for cars, pedestrians and bicycles.
- b) Council will not approve any subdivision of new lots in situations where each lot cannot be provided with a safe access point to an existing public road.
 - c) Council may not approve subdivision of allotments where access is to a Crown Road only.
 - d) Site frontage must be sufficient to permit vehicular and pedestrian access to the site.
 - e) A minimum allotment frontage of 25m must be provided when the allotment has a vehicle access point to a collector or major road.
 - f) Council and the Roads and Maritime Services (RMS) require that access points are grouped at existing or limited access points whenever feasible to minimise the traffic impact and risk on additional access points to road networks.
 - g) Where an internal road system is proposed to a new subdivision, the application must demonstrate a distinctive and hierarchical network of roads with clear physical distinctions between each type of road, based on function, capacity, vehicle speeds and public transport.
 - h) Any proposed road system must provide acceptable levels of access, safety and convenience for all road users, while ensuring acceptable levels of amenity and protection from the impact of traffic.
 - i) Council may levy a road contribution or require road upgrading for all proposed lots whether the lots are accessed by sealed or unsealed roads. The amount of the contribution will depend on the current standard of the road and the increased levels of traffic to be generated.

9) Noise and Vibration

- a) Any subdivision proposal is required to address the objectives and controls set out in the Noise and Vibration section with particular focus on designing lots so sensitive buildings (especially dwellings) will have sufficient setbacks or noise mitigation measures to minimise noise and vibration impacts.

10) Infrastructure and Services

- a) Council will not approve of any subdivision of new lots where requirements for effluent/waste water disposal cannot be adequately met on each individual lot.
- b) Council will not approve of any subdivision of new lots where the provision of services, such as electricity, telephone and other centralised services, would result in additional costs not paid for by the applicant.
- c) Satisfactory arrangements will be required to be made with Sydney Water in conjunction with the submission of the subdivision application. Documentary evidence will be required of the consultation which has been undertaken.

C. Lifting the Bar

The following represent some ways in which applicants can demonstrate additional commitment to the principles expressed in this Plan. Demonstration of this commitment may lead to Council considering variation of development controls. Applications that vary the development controls listed in this section will need to demonstrate that the proposed development complies with the objectives relevant to the development controls it seeks to vary.

- 1) Consolidation of allotments:** Where an applicant is proposing substantial works that require a development application on rural or industrial properties across a number of allotments with a single use, an applicant should review the potential to consolidate those allotments as part of the development application.
- 2) Natural Resources Sensitive Land:** Where a proposed subdivision is either within or immediately adjacent to land on the Natural Resources Sensitivity Land Map in the LEP an applicant should discuss with Council the potential to dedicate part of the subdivision as a buffer to that sensitive land.
- 3) Water Sensitive Urban Design:** Where a subdivision involves more than 10 allotments or an area greater than 5 hectares, the applicant should demonstrate to Council how the proposed subdivision layout will incorporate water sensitive urban design mechanisms both at the entire subdivision level and for each site.

11.2 Rural Subdivision

A. Objectives

- a) To promote the continued use of agricultural land, particularly prime crop and pasture land, for commercial agricultural purposes, where that form of land use is sustainable in the long term;
- b) To allow subdivision which will maintain the rural character of the locality;
- c) To avoid land use conflicts by preventing incompatible development in or adjacent to agricultural land;
- d) To create a diversity of rural living opportunities in appropriate locations to provide scope for development in rural areas;
- e) To provide a capacity to effectively cater for a range of agricultural developments;
- f) To ensure that allotments are compatible in size and shape with the physical nature of the land, adjoining land uses and the likely use of the land in the future; and
- g) To ensure satisfactory arrangements are made for access, servicing and landscaping.

B. Controls

1) Land Capability

- a) As part of any subdivision application for rural lands, an applicant must address the impact that the proposed subdivision will have on the agricultural capability and

sustainability of the proposed allotments as well as the impact on agriculture in the surrounding area.

- b) This must also address social, economic and environmental factors.

2) Avoiding Land Use Conflicts

- a) The application will need to address how any potential land use conflicts (including, but not limited to, noise, dust, odour, traffic, light, etc.) will be minimised if any proposed subdivision is located within 1km of:
 - i) An existing approved or licensed intensive agricultural operation;
 - ii) A waste or resource management facility;
 - iii) A noxious, offensive or hazardous land use; or
 - iv) A sensitive land use.
- b) Site locations must ensure such existing land uses will still comply with the EPA Odour Control Guidelines and other relevant publications.
- c) Use of building envelopes, buffer zones and planting will be considered in helping to mitigate these issues.

3) Subdivisions for Dwellings

- a) Applications for subdivision that will include a new dwelling should be accompanied by a proposal for siting of a dwelling.
- b) In some circumstances, the building envelope (ground area and height) and/or design guidelines specifying the proposed building location/height must be registered on the Certificate of Title as part of the subdivision approval process.
- c) The building envelope must comply with the relevant setbacks from roads, watercourses, other buildings and side boundaries in the Rural Land Uses Section of this Plan.

11.3. Residential Subdivision

A. Introduction

This plan applies to all subdivision proposals where land is zoned for residential purposes.

B. Objectives

- a) To provide greater diversity of housing choice;
- b) To enhance and protect the amenity of new and existing residential areas by:
 - i) Providing design controls for a variety of forms of residential subdivision;

- ii) Setting reasonable environmental standards for solar access, road network, vehicular access, parking, landscaping, servicing and drainage; and
- iii) Providing adequate environmental controls to protect the natural environment and systems in the construction/establishment of subdivisions.

B. Controls

1) General Requirements

Subdivision is generally the first stage of development in residential zones. Different development approval processes apply, depending on the form of development proposed.

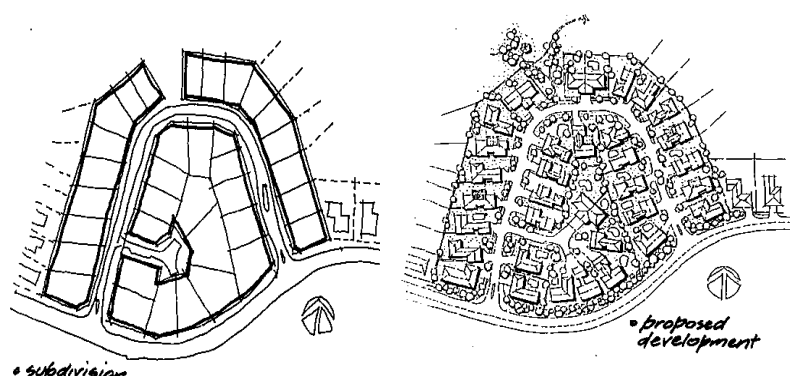
- a) Where development applications for subdivision meet the minimum lot size requirement, a development application may be made for subdivision alone.
- b) In the R1 General Residential zone, where subdivision into allotments of area less than 400m² is permitted (subject to the requirements of the LEP), a development application must be made for both subdivision and the development (e.g. detached dwelling) proposed.

2) Design Principles

- a) In determining the suitability or otherwise of any subdivision application, consideration of the following matters, together with those specified in Section 79(C) of the *Environmental Planning and Assessment Act 1979*, will be taken into account:
 - i) slope and orientation of land;
 - ii) opportunities for solar and daylight access to future dwellings;
 - iii) design of road and access ways (individual site access);
 - iv) retention of special qualities or features such as trees and views;
 - v) availability of utilities;
 - vi) provision of adequate site drainage;
 - vii) provision of public open space;
 - viii) possible need to retain existing subdivision character;
 - ix) heritage and archaeological conservation;
 - x) adequacy of each allotment considering relevant development standards such as setbacks, car parking, landscaping etc.;
 - xi) the relationship of the subdivision layout to adjacent land suitable for subdivision;
 - xii) the enhancement of existing or future subdivision character;
- b) Subdivision should only occur where the land is suitable for its intended use.
- c) Subdivision of land should not result in steep slopes or high retaining walls.

- d) In cases where subdivision is proposed on land with steep slopes, details of cut and fill including proposed retaining walls are to be provided at the time of subdivision.

Figure - C11.1: Examples of subdivision



11.3.1. Allotment Orientation

A. Objectives

- a) To achieve comfort for future users by considering prevailing climatic factors in subdivision layout;
- b) To meet user requirements for daylight and solar radiation;
- c) To enable, where practical, the application of energy conservation principles;
- d) To ensure that the site layout of a subdivision does not preclude a northerly aspect to any dwelling located on that site;
- e) To wholly consider the design of roads and allotments to create variety and interest in the streetscape and to preserve significant natural features; and
- f) To encourage energy efficient subdivision design which maximises solar access, meets requirements for daylight and solar radiation and makes efficient use of roads; and services.

B. Controls

- 1) Staggering of allotments and extensive use of landscaping are encouraged to reduce adverse wind impacts and achieve maximum exposure to cooling breezes in summer, and create streetscape variety and interest.
- 2) The allotment orientation shall take into account:
 - a) The various types of dwellings which may be constructed on them. In this regard, potential living and private open space areas of any dwelling can be oriented to the north.
 - b) The possible overshadowing impact on existing and/or future adjoining buildings.

- c) Road orientation, which is an important factor in influencing allotment orientation to achieve energy efficient subdivision.
 - i) Roads running close to east-west provide for good orientation of allotments for solar access to dwellings and private open space, while maintaining a narrow allotment frontage. This will contribute to minimising the street length and reduce lengths of utility and service related infrastructure.
 - ii) On roads running north-south, allotments may need to be widened to provide solar access and prevent overshadowing of dwellings and private open space.
- 3) Where land slopes are generally greater than 5%, road and allotment design should provide for dwellings to be generally parallel with the contours to minimise earthworks. Special care should also be taken in the configuration of roads and allotments to:
 - a) Minimise boundary retaining walls, particularly associated with building to boundary;
 - b) Minimise potential overlooking; and
 - c) Maintain solar access, where slopes face south. A greater distance between dwellings will generally be required to achieve the same solar access as on level sites or north facing slopes.

Figure - C11.2: Examples of Allotment Orientation

11.3.2. Site Frontage

A. Objective

- a) To allow the development of small sites without the need for site amalgamation.

B. Controls

- 1) Site frontage shall be sufficient to permit vehicular and pedestrian access to the site.
- 2) Access to major roads may be restricted and can potentially affect the proposed subdivision layout.
- 3) Along collector and major roads, it is desirable to reduce the number of vehicle access points. In such situations, a minimum allotment frontage of **25m** is preferred.

- 4) Alternatively, a service road running parallel to the main road may be required. (See Section 11.3.5 Road Design and Construction.)
- 5) While minimum frontage requirements are not specified in this section, each new lot created shall have satisfactory depth-to-frontage ratio and long narrow lots will be discouraged.
- 6) Allotments with double road frontage (i.e. front and rear) are discouraged.

11.3.3 Allotment Dimensions

A. Objectives

- a) To encourage variety and choice in housing forms by providing for a broad range of dwelling sizes;
- b) To meet the projected requirements of people with different housing needs;
- c) To provide sufficient area and dimensions for each allotment to enable siting and construction of a dwelling and ancillary outbuildings; and
- d) To provide sufficient area and dimensions for each allotment for the provision of private outdoor space with regard to solar and daylight access and convenient vehicle access parking (where required).

B. Controls

Allotment Size

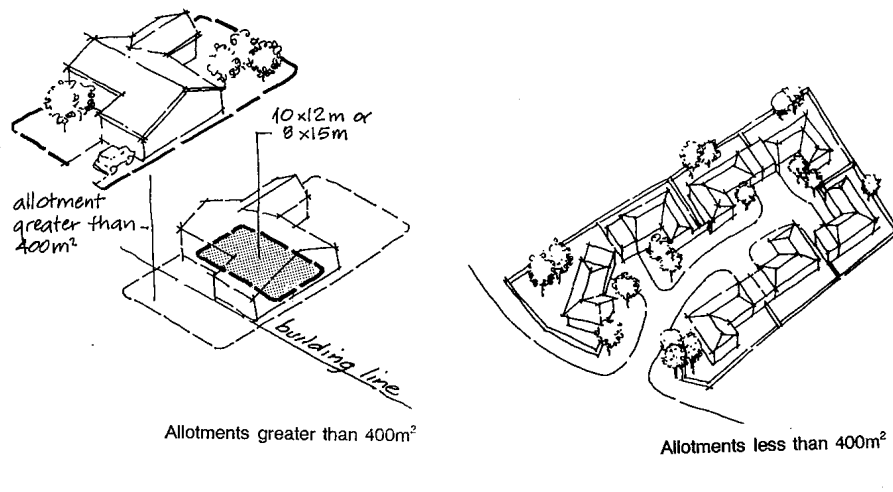
Residential lots greater than 400m²

- 1) Allotment dimensions shall be capable of containing a rectangle suitable for building purposes measuring 10m x 12m or 8m x 15m behind the building line.

Residential lots less than 400m²

- 2) In determining the suitability of any subdivision application for small lots (i.e. less than 400m²), special consideration of the following matters will also be taken:
 - a) Cost of providing services and the capacity of existing services;
 - b) The advantages of building to a boundary and using attached and semi-detached forms of housing;
 - c) That adequate privacy can be assured for each proposed dwelling; and
 - d) That adequate provision is made for access to natural light for each proposed dwelling.

Figure C11.3: Examples of allotments greater and less than 400m²



Battle-Axe Lots

- 1) Battle-axe lots must be greater than 400m².
- 2) Battle-axe allotments are generally discouraged. Where battle-axe allotments are proposed the access corridor will not be included in the site area calculation for battle-axe allotments.
- 3) Requirements for access corridors are:
 - a) Minimum width of 4m;
 - b) Minimum width for shared corridor of 5m;
 - c) Maximum length of 60m.
- 4) No more than 2 allotments shall be served by a shared corridor.
- 5) Where a corridor is shared, reciprocal rights of way and easements for drainage shall be granted for the benefit of both allotments.
- 6) Council will not be responsible for the maintenance of access corridors.

11.3.4 Road Network

A. Objectives – road network

- 1) To provide a distinctive and hierarchical network of roads with clear physical distinctions between each type of road based on function, capacity, vehicle speeds, and public safety.
- 2) To provide acceptable levels of access, safety and convenience for all road users in residential areas, while ensuring acceptable levels of amenity, and protection from the impact of traffic.
- 3) To establish a road network which provides:

- a) the basis for cost effective-design and construction of roads;
- b) efficient and accessible bus routes;
- c) safe and convenient movement of pedestrians;
- d) integrated natural drainage and open space systems;
- e) efficient provision of public utilities networks;
- f) roads within any residential neighbourhood which do not function as through traffic-roads for externally-generated traffic; and
- g) to provide for safe on-street parking of vehicles.

B. Controls – road network

- 1) The road network shall conform to a strategic plan for the area showing an existing and proposed major road network above the level of collector which satisfies projected district and regional travel.
- 2) The road network shall provide for access to bus routes within acceptable walking distance from all dwellings. Unless prescribed otherwise, no more than 10% of allotments shall be more than 250m straight line or 400m walking distance from a proposed bus route.

11.3.5 Road Design and Construction

A. Objectives

- a) To provide roads consistent with their function within the road network, having regard to their safety and visual impact.
- b) To provide sufficient road reserve, carriageway and verge width to allow roads to perform their designated functions within the road network.
- c) To allow all users of the road – motorists, pedestrians and cyclists – to proceed safely, conveniently and without delay.
- d) To provide access for emergency and service vehicles to all dwellings.
- e) To accommodate sufficient on-street parking.
- f) To accommodate public utility services and drainage systems.
- g) To provide road pavements and edges that are appropriate for the control of vehicle movements, perform any required drainage function, are structurally adequate and use materials that reinforce the residential function of the street.
- h) To minimise road construction and life cycle costs without compromising other objectives.

B. Controls

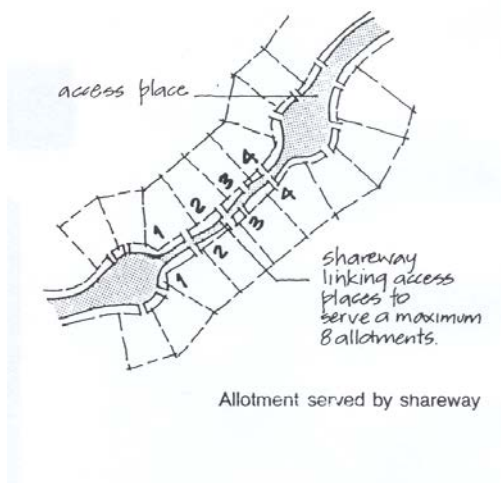
1) Connections between roads

- a) The minimum distance from an access place or road to a collector road shall be 60m if the junction is on the same side of the road or 40m if the junction is staggered on opposite sides of the road.
- b) Intersections shall be either T junctions or roundabouts.

2) Controls – road capacity

- a) A share-way shall serve a maximum of 8 single dwelling allotments, or 6 single dwelling allotments if it is a cul-de-sac.
- b) An access place serving allotments greater than 400m² shall serve a maximum of 24 single dwelling allotments.
- c) An access place serving allotments less than 400m² shall serve a maximum number of 30 allotments.
- d) An access street shall serve a maximum of 200 single dwelling allotments or generate no more than 1,500 vehicle movements per day based on an average of 7 vehicle movements per dwelling unless a lower rate can be demonstrated. Lower rates may be applied to multi dwelling housing.

Figure C11.4: Examples of allotments which is served by a share-way



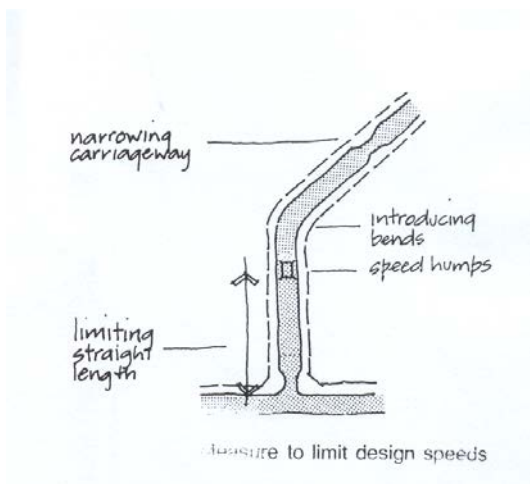
Controls – design speeds

- 1) Design speeds shall be a maximum of:
 - a) 15km per hour – share-way, access place.
 - b) 40km per hour – access street.
 - c) A combination of measures may be required to limit design speeds by:
 - i) limiting street length

- ii) introducing bends
- iii) introducing slow points, bends and other traffic management measures such as constriction of carriageway width, speed humps etc. These may not be appropriate in all situations.

2) Design shall conform to Council's guidelines. Speed profiles are required for each road.

Figure C11.5: Examples of allotments which reduce speed



Control - road reserves

- 1) Where a subdivision adjoins a collector road of a standard less than Council's current standard, adequate half-width road pavement construction, kerbing and footpath along the full length of the frontage shall be provided to approved standards.
- 2) Rear fences of a subdivision fronting collector roads are discouraged. Where there is no alternative greater verge widths may be required to provide for landscaping against fences taking into account intersection sight distance requirements.

11.3.6. Landscaping and Site Design

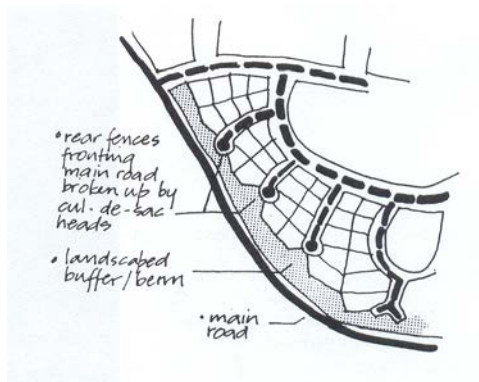
A. Objectives

- a) To maintain and enhance the existing streetscape and landscape character;
- b) To enhance the settings of buildings;
- c) To provide for acoustic and visual privacy;
- d) To reinforce and define vehicle speed control design elements;
- e) To provide shade for buildings and areas of open space; and
- f) To preserve mature trees and significant landscape elements.

B. Controls

- 1) Landscaping shall be designed to enhance the natural features of the site and adjoining areas. Existing landscape elements such as rock formations, vegetation or water courses shall, where possible, be preserved.
- 2) In established areas, landscaping shall relate to the scale of other elements of the streetscape and the landscaping of adjoining development. Where possible, landscaped areas shall adjoin landscaped areas of adjoining allotments.
- 3) Rear fences fronting public roads are discouraged. Where they are unavoidable, the following may be required:
 - a) Greater setbacks for landscaping against fences, consistent with acoustic and road design standards.
 - b) Building frontages to face road by provision of parallel access road separated by acoustic and landscaped buffer.
 - c) Landscaped berms and other planting, particularly where a minimal amount of rear fencing is provided such as with cul-de-sac heads abutting the major road boundary.
- 4) For all subdivisions, street tree planting or a contribution for street tree planting at the following rate shall be provided:
 - a) For allotments greater than 400m², a contribution for one (1) super advanced tree per 10m road frontage.
 - b) For allotments less than 400m², to be in accordance with an approved landscape plan for the entire development.
- 5) Subdivision design shall maintain existing mature trees where possible. Council has in force a Tree Preservation Order which requires Council's consent to the removal or lopping of any tree.
- 6) The slope from any proposed dwelling to a street shall be such as to allow recreational use and the provision of a footpath where required.

Figure C11.6: Landscaping on streets



11.3.7 Services

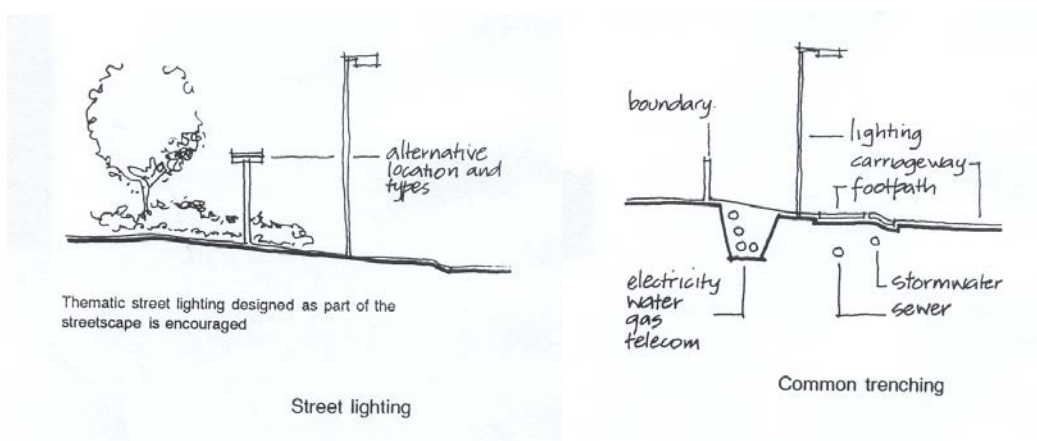
A. Background

- To provide for the location of public utilities to each allotment and within road reserves in an efficient and cost-effective manner;
- To maximise the opportunities for shared (common) trenching and reduced restrictions on landscaping within road reserves; and
- To ensure residential areas are adequately serviced in a timely, cost-effective, coordinated and efficient manner.

B. Controls

- The design and construction of utility services shall conform to the specific standards of the relevant servicing authority.
- Where possible, compatible public utility services shall be coordinated in common trenching to maximise cost-effectiveness.
- In access places and streets, the design of street lighting as part of a thematic streetscape is encouraged.

Figure C11.7 Location of services



11.3.8. Drainage

A. Objectives

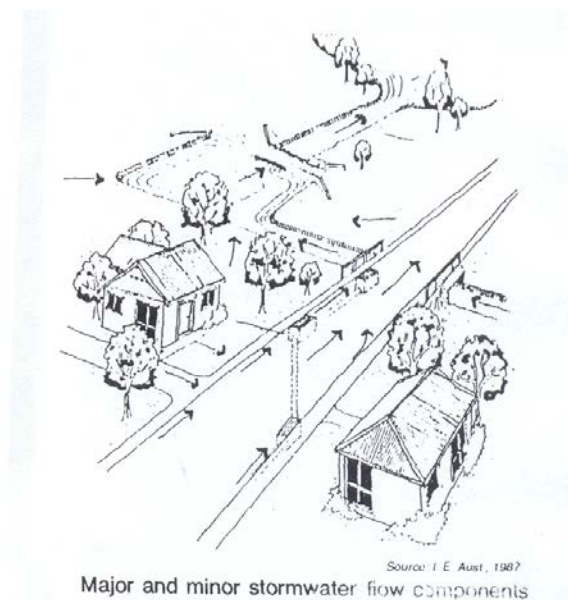
For minor stormwater flows, the objectives are to:

- a) prevent damage by stormwater to the built and natural environment;
- b) reduce nuisance flows to a high level which is acceptable to the community.
- c) provide a stormwater system which can be maintained economically;
- d) provide a stormwater system which utilises open space in a manner compatible with other uses;
- e) control flooding and enable access to allotments, stabilise the land form and control erosion; and
- f) minimise urban run-off pollutants to watercourses.

The objectives for major stormwater flows are to:

- a) prevent both short and long term inundation of habitable dwellings;
- b) control flooding and enable access to allotments; and
- c) stabilise the land form and control erosion.

Figure C11.8: Major and Minor Stormwater Flow Components



B. Controls

- 1) The piped drainage system shall be designed to control minor stormwater flows under normal operating conditions for an Average Recurrence Interval (ARI) of five (5) years.

- 2) The drainage system shall be designed to control major stormwater flows under normal operating conditions for an ARI of 100 years.
- 3) The design of the drainage system shall comply with the NSW Environment Protection Authority standards for urban run-off.
- 4) Allotment drainage shall discharge to the roadway gutter wherever possible.
- 5) Where easements are required over downstream property, Council requires the submission of the adjoining owner's consent with the development application.

11.3.9. Public Open Space

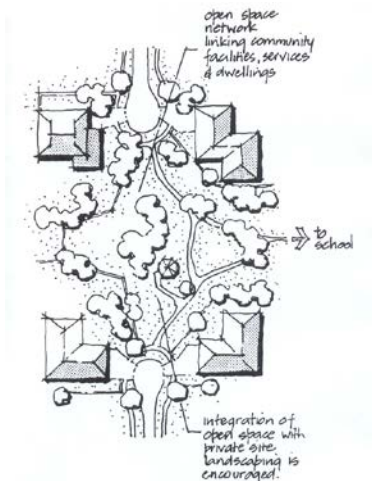
A. Objectives

- a) To ensure adequate provision and distribution of public open space in convenient locations and of a quality to meet the recreation needs of the community;
- b) To encourage dual use of open space for recreation and major drainage networks, provided the land is suitable for both purposes;
- c) To encourage opportunities to link open space networks, community facilities and public services of dwellings;
- d) To encourage the retention of significant existing vegetation with open space areas, and integration with private site landscaping and natural bushland areas; and
- e) To provide for the absorption/on-site detention of stormwater to aid in slowing the rate of run-off.

B. Controls

- 1) Open space shall accord with the relevant Council Section 94 Contributions Plan and other Section of this Plan or open space plan based on a needs assessment for the vicinity.
- 2) Council will consider the dual use of suitable open space for recreation and major stormwater drainage in accordance with the principles and requirements of the WSROC handbook "Dual Use of Drainage Open Space in Western Sydney" (1989).
- 3) On-site provision of open space (such as for integrated housing development) may only satisfy passive recreation. Council may require a contribution for the provision of, or enhancement of, active recreation space elsewhere.
- 4) In established areas, and where Council determines that the public open space component of a subdivision shall be located elsewhere, a contribution to Council will be required for acquiring or improving more suitable open space in the vicinity.

Figure C11.9: Example of public open space



11.3.10 Environmental Site Management

A. Objectives

- a) To avoid environmental degradation as a consequence of alterations to natural systems.
- b) To improve, where possible, the environmental amenity of residential development.
- c) To enhance the physical appearance of residential development by retention of significant natural features, including established trees and vegetation.

B. Controls

- 1) Development shall comply with the provisions of the Vegetation Management Section Management of this Plan and current soil erosion, sediment and water quality control requirements.
- 2) A detailed site plan shall be prepared by a suitably qualified consultant, identifying significant trees and vegetation and other physical constraints, such as watercourses.
- 3) A site management plan shall be prepared and submitted with the development application showing arrangements for the control of stormwater runoff and erosion control, during and after completion of the development, site restoration and other mitigation measures required prior to the development being undertaken, stockpile position, and all vegetation/trees to be removed and/or retained.
- 4) Council may require a performance bond or bank guarantee to be submitted to secure performance of works in accordance with an approved site management plan.

11.4. Industrial Subdivision

A. Objectives

- a) To ensure that access for all industrial lots will not significantly affect the function, efficiency and safety of all classified roads in Penrith; and
- b) To rationalise and consolidate landholdings where appropriate.

11.4.1. Subdivision – Lot Standards

A. Background

This section provides complementary objectives and controls to ensure that industrial lots operate efficiently and appropriately for their land use.

B. Objectives

- a) To provide opportunities for parcels of land of varying size and dimensions to satisfy market demand and the needs of industry;
- b) To ensure that access for all industrial lots will not significantly affect the function, efficiency and safety of classified and other major roads; and
- c) To rationalise and consolidate landholdings where appropriate.

C. Controls

1) Minimum Lot Width

- a) Minimum lot sizes are indicated on the Penrith LEP 2010 Lot Size Map.
- b) The minimum lot width of each lot is to be in accordance with the controls set out in Table C11.1 below.

Table C11.1: Minimum Lot Width

Location	Minimum Lot Width
Lots fronting Castlereagh Road	60m
Lots fronting: <ul style="list-style-type: none">• Andrews Road• Mulgoa Road• Old Bathurst Road	50m
Lots within:	20m

Location	Minimum Lot Width
<ul style="list-style-type: none"> • South Penrith (Precincts 6)* • St Marys (Precincts 1, 2 and 3)* 	
Lots within 'Lambridge Estate' (Precinct 4)	See Precinct 4 Plan below
All other lots (not specified above)	20m

* For precinct boundaries, see Section D4 'Industrial Development'

2) Allotment Shape

- a) Subdivision of land fronting Castlereagh Road, Great Western Highway, Mulgoa Road and Parker Street shall not result in the creation of battle-axe or hatchet-shaped allotments unless in accordance with clause b) below.
- b) Council may agree to a subdivision which creates battle-axe or hatchet-shaped allotments in the following circumstances:
 - i) Where the access handle has a minimum width of 15m and the proposed allotment(s) of land does not directly access Castlereagh Road, Great Western Highway, Mulgoa Road and Parker Street; or
 - ii) In Precincts 1 and 2 (St Marys), where it can be demonstrated that satisfactory access and manoeuvring areas for vehicles can be provided.
- c) Subdivisions creating more than 5 lots shall provide:
 - i) A variety of lot sizes; and
 - ii) At least 20% of the lots with dimensions greater than the specified minimum for that precinct.

3) Lot Consolidation

- a) Where industrial development involves two or more existing allotments, consolidation of those lots must occur. Evidence of such consolidation must be submitted to Council prior to occupation of the approved use.
- b) Land within Precinct 4 - Lambridge Estate must be consolidated prior to development. Consolidation shall occur in accordance with Figure C11.10.

Figure C11.10: Precinct 4 – Lambridge Estate Consolidation Plan



11.4.2. Subdivision – Access Roads

A. Objectives

The objective of this section is to ensure safe and efficient conditions for the movement of vehicles, cyclists and pedestrians into and within the industrial precincts.

B. Controls

- 1) All roads and intersections within any internal road network shall incorporate traffic facilities that promote safe and efficient traffic movement, speed control and maximise landscape opportunities.
- 2) The design of roads and traffic facilities shall comply with Council's engineering standards and accompanying Guidelines, and any Roads and Maritime Services requirements.
- 3) New industrial subdivisions should incorporate road designs that:
 - a) Provide a distinctive and hierarchical network of roads, with clear physical distinctions between each type of road, based on function, capacity, vehicle speeds and safety;
 - b) Utilise interesting, varied street patterns and avoid long 'gunbarrel' effects; and
 - c) Incorporate cycle links adjacent to existing and proposed cycle and pedestrian networks.

- 4) Newly created lots, resulting from the subdivision (but not strata subdivision) of land that has frontage to Castlereagh Road shall not have direct access onto Castlereagh Road. Access into these new lots shall be incorporated into the design of the subdivision by providing a new road off Castlereagh Road.

11.4.3. Subdivision – Other Requirements

A. Objectives

- a) To implement measures to promote high quality of discharge to the sewer and drainage system that will result in improving the water quality of the Hawkesbury-Nepean River system and tributaries; and
- b) To preserve Aboriginal archaeological resources located in the industrial areas of the City.

B. Controls

- 1) Newly created lots are to drain directly to a piped drainage system, and not to the kerb and gutter.
- 2) If the land has an area of 5ha or greater, then the subdivision proposal is to incorporate the specific water quality treatment measures detailed in the Catchment Management and Water Quality part of the Water Management Section of this Plan. Information on the water quality treatment for the subdivision is to be submitted with the application for subdivision.
- 3) The likelihood of Aboriginal archaeological items being present on the land must also be considered with the creation of new industrial lots. The Culture and Heritage Section of this Plan details the necessary documentation to be submitted with the application for subdivision.

Table of Contents

C12 NOISE AND VIBRATION	2
12.1. ROAD TRAFFIC NOISE	3
12.2. RAIL TRAFFIC NOISE AND VIBRATION	4
12.3. AIRCRAFT NOISE	6
12.4. INDUSTRIAL AND COMMERCIAL DEVELOPMENT	8
12.5. RURAL DEVELOPMENT	9
12.6. OPEN AIR ENTERTAINMENT	11
12.7. VIBRATION AND BLASTING	13

C12 Noise and Vibration

A. Background

This section of the DCP provides objectives and controls for controlling environmental noise in relation to:

- a) Road traffic noise;
- b) Rail traffic noise;
- c) Aircraft noise;
- d) Industrial and commercial development;
- e) Rural development;
- f) Open air entertainment; and
- g) Vibration from development.

Generally, the controls in this Plan will only be applied to new development or substantial alterations and additions to existing development. In this case, new development may also include development applications for new land uses in existing buildings.

The controls in this Section will be applied at the discretion of Council where it is considered necessary or appropriate.

B. General Objectives

The objective of this section is to ensure that future development that generates noise or vibration does not adversely affect the amenity of surrounding land uses.

C. Other Relevant Sections of this DCP

Any applicant seeking to propose a development that has the potential to cause excessive noise or vibration impacts should consider the provisions not just of this Section of the DCP, but also the relevant provisions in other sections of this DCP.

Council will consider each development application on its merit, having regard to this section, other relevant sections of the DCP and relevant environmental planning instruments, contributions plans or Council policies. Compliance with this section alone does not guarantee that consent will be granted to an application.

In cases where Council determines that an acoustic report is required, applicants should refer to the DA Submission Requirements Appendix of this Plan, which sets out the requirements for preparing a *Noise Impact Statement*.

D. Other Relevant Sources of Information

Some additional sources of information, including relevant legislation, Australian Standards and guidelines, include, but are not limited to:

- a) *Protection of the Environment Operations Act 1997*
- b) *State Environmental Planning Policy (Infrastructure) 2007.*
- c) Development Near Rail Corridors and Busy Roads – Interim Guideline, Department of Planning, 2008
- d) Industrial Noise Policy, Environment Protection Authority, Environment Protection Authority, 2000
- e) Noise Guide for Local Government, Environment Protection Authority, 2013
- f) NSW Road Policy, Department of Environment, Climate Change and Water NSW, 2011
- g) Environmental Noise Management Manual, Roads and Traffic Authority, 2001
- h) Interim Construction Noise Guideline, Department of Environment, Climate Change NSW, 2009.

12.1. Road Traffic Noise

A. Background

Currently, road traffic is the most widespread source of environmental noise. The controls below seek to minimise the impact of road traffic noise.

This Section of the DCP applies to all development that generates a significant level of traffic noise (as determined by Council) that has potential to impact upon residential and other sensitive land uses.

This Section is also applicable to any residential development, subdivision or other sensitive land uses, which propose to locate near existing areas of significant road traffic noise.

B. Objectives

- a) To ensure that the amenity of all residential development and other sensitive land uses is not significantly affected by road traffic noise;
- b) To ensure that the traffic associated with development does not significantly impact upon the amenity of surrounding land uses;
- c) To ensure that the traffic associated with development does not have a significant noise impact on the existing road network; and
- d) To ensure that any subdivisions are designed to minimise the impact of road traffic noise on any residential development or other sensitive land uses.

C. Controls

1) Road traffic noise criteria including sensitive land uses

- a) Council will not grant consent to development, particularly residential development, including subdivisions, unless the impact of traffic noise from freeway, arterial, designated or collector roads complies with the standards and guidelines for road traffic noise prepared by the relevant State Government authorities or agencies, as well as relevant Australian Standards.
- b) Council will not grant consent to development for sensitive land uses unless it complies with the provisions and standards for road traffic noise prepared by the relevant State Government authorities or agencies, as well as relevant Australian Standards.
- c) Sensitive land uses subject to road traffic noise criteria referred to in b) above include educational establishments (including schools), places of public worship, hospitals, and passive and active recreation areas.

Noise Impact Statements - Specific Requirements

- a) Where a site is likely to be affected by unacceptable levels of road traffic noise, the applicant is required to provide a Noise Impact Statement prepared by a qualified acoustic consultant in accordance with the requirements set out in the DA Submission Requirements Appendix of this DCP.
- b) The Noise Impact Statement should demonstrate acoustic protection measures necessary to achieve an indoor environment meeting residential standards, in accordance with EPA and Department of Planning Criteria, as well as relevant Australian Standards.

NOTE: To determine whether your site is likely to be exposed to levels of road traffic noise that exceed residential standards:

- a) Contact Council regarding main road frontages known to exceed residential noise standards; and
- b) Obtain detailed advice from a qualified acoustic consultant regarding appropriate planning and design measures.

12.2. Rail Traffic Noise and Vibration

A. Background

Penrith is serviced by the Main Western Rail Line. With the population spreading further away from the Sydney metropolitan area, the Western Rail Line has experienced an increase in the number of passenger trains, both suburban and inter-urban. Freight train movements along the Main Western Rail Line are also considerable. To reduce congestion on commuter lines and to improve efficiency, the number of wagons per train has been increased which has resulted in an increase in average noise levels (or the LAeq) because pass-by times increase correspondingly.

The extent of properties affected by rail traffic noise is far more concentrated than noise due to road traffic owing to the single rail corridor. This Section of the DCP applies to all development in the vicinity of the rail corridor as defined by Council.

B. Objectives

- a) To ensure that the amenity of all development, including residential development and other sensitive land uses is not adversely affected by rail traffic noise; and
- b) To ensure that the amenity of all development, including residential development and other sensitive land uses is not significantly affected by the vibration of rail traffic.

C. Controls

1) Rail noise and vibration

- a) The siting and design of developments on land sited on, or within, 80m of an operating rail corridor or land reserved for the construction of a railway line is to address the matters raised in the *Development Near Rail Corridors and Busy Roads – Interim Guideline (Department of Planning, 2008)* and, where appropriate, incorporate any recommendations into the design of the development.
- b) Council will not grant consent to residential development, residential subdivision or other sensitive land uses on land in the vicinity of a rail corridor unless it complies with the relevant standards and criteria set by the EPA and Department of Planning, as well as any relevant Australian Standards.
- c) Council will not grant consent to any development which potentially has sensitive occupancies (such as residential, office or laboratory premises) and is proposed to be constructed within 20m of the rail line unless an assessment of the vibration impacts from the rail line has been carried out. This is to be undertaken by a recognised acoustic consultant to demonstrate that the impact of vibration from the rail corridor will not significantly impact upon the future occupants of the development.
- d) Sensitive land uses subject to rail noise and vibration criteria referred to in (b) above include educational establishments (including schools), places of public worship, hospitals, nursing homes, mixed use development, offices/workplaces, and passive and active recreation areas.

Noise Impact Statements - specific requirements

- a) Where a site is likely to be affected by unacceptable levels of rail noise or vibration, the applicant is required to provide a Noise Impact Statement prepared by a qualified acoustic consultant in accordance with the requirements set out in Appendix F3 – Submission Requirements of this DCP.
- b) The Noise Impact Statement should demonstrate acoustic protection measures necessary to achieve an indoor environment meeting residential standards, in accordance with EPA and Department of Planning criteria, as well as relevant Australian Standards and Clause 87 – Impact of Rail Noise or Vibration on Non-Rail Development of *SEPP (Infrastructure) 2007*.

NOTE: To determine whether your site is likely to be exposed to levels of rail noise and vibration that exceed residential standards:

- a) Contact Council; and
- b) Obtain detailed advice from a qualified acoustic consultant regarding appropriate planning and design measures.

12.3. Aircraft Noise

A. Background

To date, the City of Penrith has not been subject to significant numbers of commercial aircraft operations, with the exception of light aircraft movements, periodic helicopter activity and RAAF overflights.

The LEP contains provisions to ensure that incompatible development does not occur in the vicinity of the site reserved for a second Sydney airport.

The controls below supplement the provisions of the 'Development of land in the flight paths of the site reserved for the proposed Second Sydney Airport' clause of the LEP. The controls seek to ensure that any new development in the Penrith LGA is not significantly affected by any potential future aircraft noise.

This section applies to all development that is located within the vicinity of the proposed second Sydney airport as defined by Council.

B. Objective

The objective of this section is to ensure that all development is not significantly affected by aircraft noise.

C. Controls

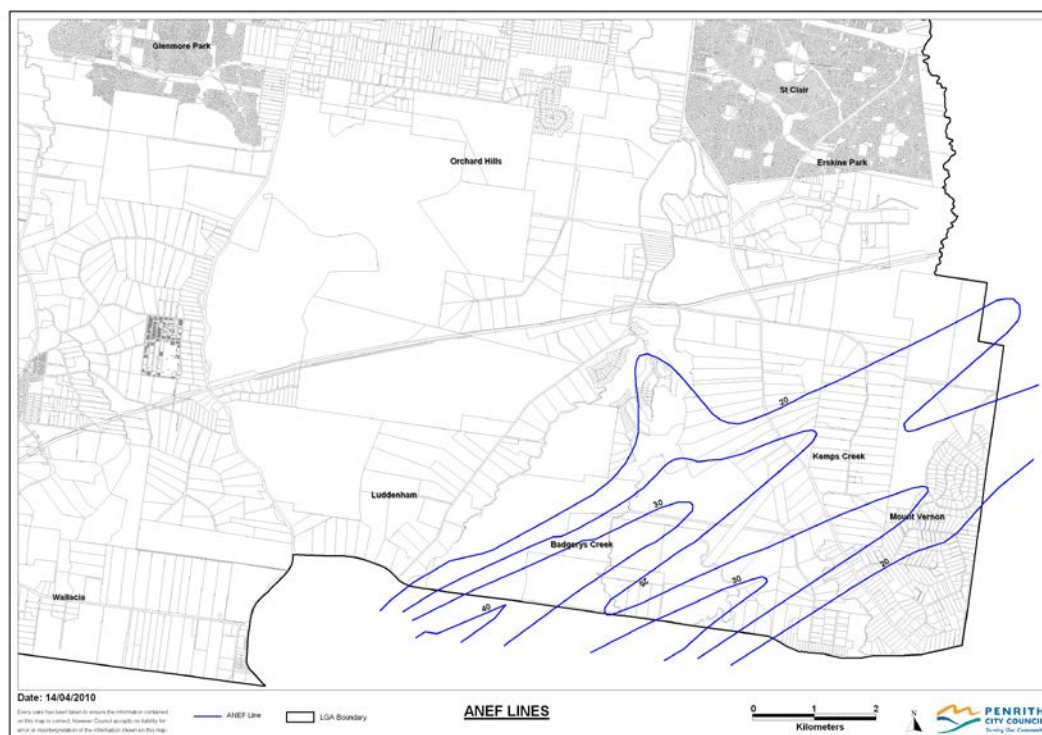
1) General

- a) Council will not grant consent to any development unless it is demonstrated to Council's satisfaction that:
 - i) The building site is considered acceptable for the proposed development based upon ANEF (Australian Noise Exposure Forecast) zones in accordance with Australian Standard 2021-2000.
 - ii) Where a building site is classified by AS 2021-2000 as 'conditionally acceptable', an assessment of the proposed development is to be conducted by an accredited acoustical consultant in accordance with the procedures set out in Australian Standard 2021-2000 to ensure that the indoor design sound levels of the Standard are achieved within the various areas of occupancy.

2) Determination of Noise Levels

- a) Assessment of site acceptability shall be determined by means of the most recent ANEF contour map available for the Second Sydney Airport (see Figure C12.1).
- b) Determination of maximum noise levels due to aircraft flyovers at the site shall be conducted in accordance with the procedures laid down in Australian Standard 2021-2000.

Figure C12.1: Land affected by ANEF contours for the proposed Second Sydney Airport



3) Noise Impact Statements - specific requirements

- a) Any development classified as 'conditionally acceptable' in Australian Standard 2021-2000 is to include a Noise Impact Statement which is to be prepared in accordance with the minimum requirements set out in Appendix F3 of this DCP. In addition, the following additional specific information is to be provided:
 - i) The site acceptability classification based upon ANEF zones in accordance with AS 2021-2000;
 - ii) The maximum noise level due to aircraft flyover at the site and the method used for determination (i.e. in accordance with AS 2021-2000, or based upon information supplied by the relevant Government Aviation Authority);
 - iii) The indoor design sound level for aircraft flyovers in accordance with AS 2021-2000;
 - iv) The aircraft noise reduction(s) (ANR) required to be incorporated in the building envelope;
 - v) Details of building components and construction techniques required to provide sufficient noise reduction;
 - vi) A map clearly indicating the location of the development site in relation to the most recent ANEF contour map produced for the second Sydney airport;
 - vii) Sketch plans of the site illustrating building locations and any other relevant details, together with detailed floor plans and elevations;

- viii) Any other significant or relevant acoustic information concerning the project; and
- ix) A statement of opinion confirming compliance with the acoustical design criteria requirements.

12.4. Industrial and Commercial Development

A. Background

This Section of the DCP applies to all industrial development, commercial development (including recreation facilities) and licensed premises which, in the opinion of Council, will impact upon the amenity of surrounding developments.

Industrial Development

There are industrially zoned precincts in Penrith City, extractive industries and employment zones at North Penrith, Erskine Park and within a number of new urban release areas. With this new development for industrial and employment related uses, there are likely to be conflicts between noise created in industrial areas and adjoining sensitive land uses.

Commercial Development

The main source of noise generated by commercial development is from the operation of machinery and equipment. In particular, noise generated from air conditioning, exhaust and refrigeration systems have been major sources of noise complaints received by Council.

The other major source of noise generated from commercial development is often of a transient nature, for example, when an entertainment facility, such as a cinema, closes.

B. Objectives

- a) To ensure that industrial development does not adversely impact on the amenity of neighbouring residential development and other sensitive land uses; and
- b) To ensure that the amenity of development surrounding commercial development and licensed premises is not adversely impacted.

C. Controls

1) General

- a) Council will not grant consent to any noise generating industrial development, commercial development or licensed premises unless it can be demonstrated that:
 - i) The development complies with the relevant State Government authority or agency standards and guidelines for noise, as well as any relevant Australian Standards;
 - ii) The development is not intrusive (as defined in the EPA's Industrial Noise Policy);
 - iii) Road traffic noise generated by the development complies with the provisions of Section 12.1 Road Traffic Noise of this Section;
 - iv) The development complies with rail noise and vibration criteria (refer Section 12.2 Rail Traffic Noise and Vibration of this Section); and

- v) The development does not adversely impact on the amenity of the area or cause sleep disturbance.

Noise Impact Statements - specific requirements

- a) All development applications where the above controls are relevant are required to provide a Noise Impact Statement prepared by a qualified acoustic consultant in accordance with the requirements set out in the DA Submission Requirements Appendix of this DCP.
- b) The Noise Impact Statement should demonstrate acoustic protection measures necessary to achieve an indoor environment meeting residential standards, in accordance with relevant noise criteria, as well as relevant Australian Standards.

NOTE: Council considers all forms of recreation facilities, as commercial development. Any applications for these land uses would be subject to the above provisions.

12.5. Rural Development

A. Background

Noise from rural developments, such as poultry farms, piggeries, animal boarding establishments, etc have the potential to cause significant disturbance to neighbouring properties due to the nature of the noise emitted and the times at which it occurs.

The controls below seek to reduce the noise impact of rural developments to a reasonable level.

This Section particularly focuses on the following uses:

- Dog boarding, training and breeding establishments;
- Piggeries;
- Poultry farms;
- Cattle feed lots; and
- Bird scare guns.

B. Objectives

- a) To promote the acoustical amenity of rural properties by controlling noise emissions from rural development; and
- b) To reduce the exposure of properties to noise from road traffic.

C. Controls

1) Dog Boarding, Training and Breeding Establishments

- a) Council will not grant consent to applications for dog boarding, training and breeding establishments unless it can be demonstrated that:
 - i) The development complies with the relevant State Government authority or agency standards and guidelines for noise, as well as any relevant Australian Standards;
 - ii) The development complies with the following locational criteria:
 - Kennels are located a minimum distance of 150m from any existing dwelling or potential dwelling site;
 - Kennels, which are located 150m from existing or future dwellings, are limited to cater for 10 dogs;
 - Council may permit a proportional increase in the number of dogs as the distance from existing or future dwellings is increased, to a maximum of 40 dogs for 300m;
 - iii) Road traffic noise generated by the development complies with the provisions of Section 12.1 Road Traffic Noise of this Section;
 - iv) The development manages and mitigates noise so as to not adversely impact on the amenity of surrounding rural properties. This is to be demonstrated in a Noise Impact Statement. The DA Submission Requirements Appendix sets out the minimum requirements for a Noise Impact Statement.
- b) All development applications for dog boarding, training and breeding establishments shall also demonstrate the following noise mitigation measures in the design and management procedures:
 - i) All kennel buildings to be of masonry construction, concrete floors and incorporate screening measures to adequately restrict external stimulation;
 - ii) Kennels to be separated by a solid divider of adequate height;
 - iii) Sound-proofed kennels to be provided, incorporating internal absorptive lining to reduce reverberant sound, for particularly noisy dogs. A minimum of one sound-proofed kennel shall be provided for every 10 dogs accommodated;
 - iv) Dogs to be housed and exercised singly or in compatible pairs;
 - v) Feeding to be restricted to late afternoon or early evening;
 - vi) Lights to be extinguished after evening feeding; and
 - vii) No animals permitted in the run areas between the hours of 8.00pm to 7.00am Monday to Friday and 8.00pm to 8.00am Weekends and Public Holidays.

Noise Impact Statements - specific requirements

- a) All development applications for dog boarding, training and breeding establishments are required to provide a Noise Impact Statement prepared by a qualified acoustic consultant in accordance with the requirements set out in this DCP.

The Noise Impact Statement should demonstrate acoustic protection measures necessary to achieve an indoor environment meeting residential standards, in accordance with relevant noise criteria, as well as relevant Australian Standards.

NOTE: The above noise controls should be read in conjunction with the specific development controls for dog boarding, training and breeding establishments in the Rural Land Uses Section of this Plan.

2) Piggeries, Poultry Farms, Cattle Feed Lots, Bird Scare Guns

- a) Council will not grant consent of any new piggeries, poultry farms, cattle feed lots or bird scare guns unless it can be demonstrated that:
- i) The development complies with the relevant State Government authority or agency standards and guidelines for noise, as well as any relevant Australian Standards;
 - ii) Road traffic noise generated by the development complies with the provisions of Section 12.1 Road Traffic Noise of this Section; and
 - iii) The development manages and mitigates noise so as to not adversely impact on the amenity of surrounding rural properties. This is to be demonstrated in a management plan for the development.

Noise Impact Statements - specific requirements

- a) Council may require a Noise Impact Statement to be submitted, depending on the scale and location of sheds or external structures to residential and other sensitive land uses. Information on the requirements of a Noise Impact Statement is provided in Appendix F3 – DA Submission Requirements of the DCP.

NOTE: The above noise controls should be read in conjunction with the specific development controls for piggeries, poultry farms and cattle feed lots in the Rural Land Uses Section of this Plan.

12.6. Open Air Entertainment

A. Background

Open-air entertainment events, such as concerts or motor racing, have the potential to significantly impact upon the amenity of surrounding areas. Consequently, these activities usually require the consent of Council.

This Section of the DCP focuses on the following uses:

- Motor sport;
- Open air concerts; and

- Sporting activities.

B. Objectives

The objective of this section is to minimise the likelihood of disturbance to the surrounding community as a result of open air entertainment or outdoor facilities.

C. Controls

1) Motor Sport

- a) Council will not grant consent to a motor sport event unless it can be demonstrated that the motor sport event or facility will operate between the following hours:
 - i) Monday to Friday – 7.00am to 10.00pm;
 - ii) Weekends and Public Holidays – 8.00am to 10.00pm; and
 - iii) The event occurs only once in a twelve month period.
- b) Council will not grant consent to a motor sport event unless it can be demonstrated that the event or facility will operate within the following criteria:
 - i) LAeq noise level not exceeding 55 dBA when measured in the immediate vicinity of the external structure of any residential premises; and
 - ii) The maximum noise level when measured at 30 metres from any vehicle shall not exceed 95 dBA.

2) Open Air Concerts

- a) Council will not grant consent to open air concerts unless it can be demonstrated that the concert will operate within the following criteria:
 - i) The LAeq noise level measured over any 5 minute period during the broadcasts of amplified music does not exceed 55 dBA when measured in the immediate vicinity of the external structure of any residential premises; and
 - ii) The event is completed by 10.00pm.
- b) In cases of special cultural or social significance, Council may permit an exceedance of the above criteria subject to the preparation of a Noise Impact Statement which must address the following:
 - i) Stage orientation;
 - ii) Fold back monitors;
 - iii) Speaker stack height; and
 - iv) Location, orientation and implementation of noise control measures.
- c) In these special cases, all open air entertainment must operate so that:

- i) The maximum permissible noise level measured in the immediate vicinity of the external structure of the nearest and most potentially affected residential premises does not exceed 70 dBA LA_{max}; and
- ii) A warning is issued to the mixing desk when the maximum level reaches 65 dBA at the nearest or most potentially affected residential premises.

3) Outdoor Sporting Activities

- a) Outdoor sporting activities are to operate between the hours of:
 - i) Monday to Friday – 7.00am to 6.00pm; and
 - ii) Weekends and Public Holidays – 8.00am to 6.00pm.
- b) Outdoor sporting activities are permitted provided the LA_{eq} noise level, measured over a representative period, does not exceed the background LA₉₀ sound level by more than 10 dBA when measured in the vicinity of the external structure of any residential premises.

4) Noise Impact Statement - specific requirements

- a) Council may require a Noise Impact Statement to be submitted, depending on the scale, nature and location of the development to residential areas and other sensitive land uses. Information on the requirements of a Noise Impact Statement is provided in the DA Submission Requirements Appendix of the DCP.

12.7. Vibration and Blasting

When development may have a vibration impact on neighbouring premises, a Vibration Impact Assessment is to be prepared by a suitably qualified consultant and submitted with the development application. This assessment is to be carried out with consideration of the *Assessing Vibration: a technical guideline* (Department of Environment and Conservation NSW, 2006) and demonstrate that there will be no impact or recommend suitable mitigation measures.

Table of Contents

<u>C13 INFRASTRUCTURE AND SERVICES</u>	<u>2</u>
13.1. LOCATION OF EASEMENTS FOR INFRASTRUCTURE	3
13.2. UTILITIES AND SERVICE PROVISION	3
13.3. ON SITE SEWAGE MANAGEMENT	5
13.4. ENGINEERING WORKS AND CONSTRUCTION STANDARDS	7
13.5. DEVELOPMENT ADJACENT TO THE SYDNEY CATCHMENT AUTHORITY CONTROLLED AREAS – THE WARRAGAMBA PIPELINES	7

C13 Infrastructure and Services

A. Background

This Section seeks to address a number of issues relating to the provision of infrastructure and services, and the design and construction of engineering works. These issues relate to all development. However, the issues are particularly important in areas where there is limited access to infrastructure or services/utilities such as in rural areas or new release areas.

B. General Objectives

- a) To ensure existing infrastructure and services, including easements, are taken into account in siting and designing any proposed development;
- b) To ensure there is adequate provision of utilities and services to allotments to support any proposed development without significant additional burden on Council and utility providers;
- c) To ensure on-site sewage management systems in the City's unsewered areas are sited, designed, constructed, operated and maintained to prevent risks to public health and the environment;
- d) To achieve set engineering and construction standards for infrastructure, which is provided either by Council or a private developer; and
- e) To ensure social facilities are provided in a manner appropriate to the proposed development.

C. Other Relevant Sections of this DCP

Penrith DCP 2014 is a multi-layered document that recognises the relationship of a number of issues to achieving sustainable outcomes. Therefore, in order to address infrastructure and services, it is important to read all relevant sections of this DCP.

13.1. Location of Easements for Infrastructure

A. Background

A number of properties within the City of Penrith are encumbered with major infrastructure that may affect the potential development opportunities for the site.

B. Objectives

The objective of this section is to ensure existing infrastructure and services, including easements, are taken into account in siting and designing any proposed development, and relevant service authorities are consulted.

C. Controls

- 1) Applicants should identify the type and location of infrastructure (including the easement) that is on the site and consult with the relevant service authority to determine whether the easement will be a constraint to development of the site.
- 2) Applicants should consider the likely impacts of locating adjacent to or on an easement and the likely land uses/activities proposed on the site. Buildings (including swimming pools) or the storage of flammable or explosive materials or flammable liquid carriers must not be located within easements.
- 3) Proposals that encroach into the easement will require the approval of the relevant service authority. It is recommended that applicants consult with the relevant service authority as part of the initial stages of the development concept.

13.2. Utilities and Service Provision

A. Background

An integral part of determining whether certain land uses are suitable for a site involves assessing whether the appropriate utilities and services are available on the site to service the proposed development, and whether they have sufficient capacity to meet the demand of the proposal (and any future increase in demand) in the area.

This issue is particularly relevant in rural areas and in new release areas where services may not exist. Even in urban areas, existing services may not be capable of meeting further demands placed by new development.

This section aims to ensure that development consent is only granted where a proposal can be appropriately serviced, either through the existing system having sufficient capacity or being upgraded, or an alternative system being provided. In most cases, the developer will be required to fund necessary system upgrades or alternatives.

B. Objectives

- a) To ensure that development will not place unreasonable pressure on servicing authorities in terms of timing and extent of supply;
- b) To ensure that development will take place only where satisfactory arrangements are made with the servicing authorities; and
- c) To ensure that adequate consultation is carried out with the relevant servicing authorities during the formulation of development proposals.

C. Controls

1) General

- a) Any site analysis (see the Site Planning and Design Principles Section) should address the existing and proposed provision of services/utilities to a property and whether there is satisfactory capacity to address the required demand of the proposal.
- b) Satisfactory arrangements should be made with the servicing authorities for the provision of services to the property.
- c) Where possible, services (including easements) should not be located in areas where vegetation will be removed or damaged.

2) Infrastructure Delivery Plan for New Release Areas

- a) The preparation and submission of an *Infrastructure Delivery Plan* (IDP) is required for all new release areas. The IDP is required to identify all infrastructure, including civil works, utility services and community, social, cultural and recreational facilities, to service a new release area and establish a framework for its timely provision.
- b) The IDP should include associated costing (including on-going operating and maintenance costs) and estimated delivery timeframes for all infrastructure, with a commitment to providing services up front where they are required early in the life of new estates. Where possible, the IDP should demonstrate efficient use and/or extension of existing infrastructure. The IDP should explore opportunities for the delivery of innovative and sustainable infrastructure, services, facilities and networks with adherence to the principles of social justice, equity and accessibility.
- c) The IDP shall provide an accurate costing for all infrastructure to be provided and a delivery program with key pre-planning design and construction phases identified. It shall also incorporate relevant apportionment of costs where it is agreed those will be shared with other providers. The IDP will form the basis for the development of Section 94 Contributions Plans and/or Development Agreements, as well as agreements required to be entered into with the State Government and its agencies for the delivery of regional based facilities.
- d) For further details on what should be addressed in the IDP, see Appendix F3 – DA Submission Requirements.

3) Water

- a) Sydney Water should be contacted regarding its requirements in conjunction with discussions with Council about development, subdivision and building applications.
- b) For some developments, it will be necessary to provide evidence to Council that consultation has been carried out when building and development applications are submitted. For most developments, provision of evidence that consultation with Sydney Water has been carried out will be a condition of consent. Please discuss this with Council's Development Services Department.
- c) Council is unlikely to grant consent to applications for developments which place unreasonable pressure on Sydney Water's supply capacity.
- d) It will generally be the applicant's responsibility to pay for or construct any increase in capacity of services.

4) Electricity

- a) Applicants are required to make satisfactory arrangements with Endeavour Energy for the provision of electricity and/or lighting to the site.

5) Telecommunications

Applicants are required to make satisfactory arrangements with Telstra for the provision of telephone and data cables.

Telecommunication infrastructure in new release areas should provide the following:

- a) Multiple telecommunication services including high speed internet (including broadband), voice and data systems;
- b) Cabling for all telephone lines, cable TV and internet, built into all buildings from the outset;
- c) Underground telecommunications infrastructure; and
- d) Consideration of the provision of a centralised (C.A.T.V) system rather than individual antennae or dishes particularly for multi dwelling housing and residential flat buildings.

6) Gas

Natural gas supplies are not available to many parts of Penrith's rural areas. Applicants are advised to discuss the provision of gas supplies with AGL Energy or the local gas delivery company.

13.3. On Site Sewage Management

A. Background

On-Site Sewage Management Systems (OSSM system)

The City of Penrith consists of both sewerred and unsewerred areas. The main systems used in unsewerred areas are aerated wastewater treatment systems (AWTS), pump-out systems and absorption trench disposal systems.

Issues with OSSM systems

The predominant soil landscape groupings in Penrith are Wianamatta group shales and clays. These soil types characteristically have poor permeability due to their clay content. In many cases, effluent from failing OSSM systems diffuses into the surrounding environment rather than being adequately treated by the system through absorption, evaporation and plant uptake. Improved regulation, operation and maintenance of OSSM systems can address these issues. This section has been developed to help applicants assess the selection, design, installation, operation and maintenance of domestic OSSM systems and draws from Council's 'On-site Sewage Management and Greywater Reuse Policy'.

This section applies to development proposals involving new domestic OSSM systems or changes to existing domestic OSSM systems on unsewerred land in the City of Penrith. It includes requirements for subdivision and development proposals that intend to rely on OSSM systems.

B. Objectives

- a) To guide applicants and landholders towards sustainable on-site management of sewage and waste water;
- b) To protect and enhance the quality of public health and the environment within the Penrith LGA.
- c) To assist Council to prioritise resources for the efficient regulation and monitoring of OSSM systems within the City.
- d) To prevent risk to public health – wastewater may contain bacteria, viruses, parasites and other disease-causing organisms. OSSM systems should be selected, sited, designed,

constructed, operated and maintained so that contact with effluent is minimised or eliminated, particularly for children; residuals, such as composted material, are handled carefully; and treated sewage is not used on edible crops that are consumed raw.

- e) To protect land and vegetation – OSSM systems should not cause the deterioration of land and vegetation quality through soil structure degradation, salinisation, water logging, chemical contamination or soil erosion;
- f) To protect surface and ground waters – OSSM systems should not contaminate surface and ground waters as a result of flows from treatment systems and land application areas;
- g) To conserve and reuse resources - the resources in domestic wastewater (including nutrients, organic matter and water) should be utilised as much as possible within the bounds posed by the other performance objectives; and
- h) To protect community amenity – OSSM systems should not unreasonably interfere with the quality of life and, where possible, should add to local amenity.

These objectives reflect the objectives of Council's On-site Sewage Management and Greywater Reuse Policy.

C. Controls

1. New OSSM Systems

- a) Approvals are required for the installation and operation of all new OSSM systems. Installation and operational approvals will initially be assessed together.
- b) The installation and operation of OSSM systems are to be in accordance with Council's On-Site Sewage Management and Greywater Reuse Policy.
- c) A Wastewater Assessment Report is required to be submitted with an application for the installation of a new domestic OSSM system when the criteria of Council's On-Site Sewage Management and Greywater Reuse Policy have been met.
- d) A Wastewater Assessment Report is also required with an application for all commercial systems, in accordance with Council's On-Site Sewage Management and Greywater Reuse Policy.

D. Lifting the Bar

The following represents some ways in which applicants can demonstrate additional commitment to on-site sewage management principles expressed in this DCP. Demonstration of this commitment may lead to Council considering variation of development controls. Applications that vary the development controls listed in this section will need to demonstrate that the proposed development complies with the objectives relevant to the development controls it seeks to vary.

- a) Adopting the latest techniques/technology for on-site sewage management to maximise treatment and minimise any environmental impacts from run-off and land management.
- b) Design of all OSSM systems to allow for reuse of treated wastewater for non-drinking purposes, such as irrigation and toilet flushing (in accordance with NSW Health, Department of Water and Energy and NSW Office of Water requirements).
- c) Treatment of on-site effluent to a secondary or tertiary level before it enters any centralised sewage management system.

E. Other Relevant Information

This DCP recommends that applicants seeking to address this issue should also refer to other relevant information including:

- a) Penrith City Council's *On-site Sewage Management and Greywater Reuse Policy*, 2014
- b) *Local Government (General) Regulation 2005*.
- c) Standards Australia/Standards New Zealand (2000) AS/NZS 1547:2012 On-site domestic wastewater management
- d) Department of Local Government, NSW Environment Protection Authority, NSW Health, Department of Land and Water Conservation and Department of Urban Affairs and Planning (1998) *Environment and Health Protection Guidelines – On-site Sewage Management for Single Households*.
- e) *Sydney Regional Environmental Plan No.20 - Hawkesbury Nepean River (No.2 - 1997)*.

13.4 Engineering Works and Construction Standards

A. Introduction

The purpose of this section is to ensure that engineering works, such as earthworks, roads, traffic management devices, footpaths, stormwater and drainage systems, are designed and constructed to appropriate standards, and in accordance with sound engineering practice.

B. Objectives

- a) To ensure a consistent approach to the design and construction of engineering works; and
- b) To set performance standards for the design and construction of engineering works.

C. Controls

All engineering works shall be undertaken in accordance with the provisions of Council's:

- Stormwater Drainage Specifications for Building Developments
- Council's Water Sensitive Urban Design (WSUD) Technical Guidelines;
- Engineering Design Specifications for Civil Works; and
- Engineering Construction Specifications for Civil Works.

Copies can be obtained from Council.

13.5 Development Adjacent to the Sydney Catchment Authority Controlled Areas – the Warragamba Pipelines

A. Objectives

- a) To ensure the Warragamba Pipelines are taken into account in siting, designing and constructing in any proposed development adjoining or in the vicinity of the pipelines.
- b) To ensure that development adjacent to the Warragamba Pipelines corridor does not impact on the continued operation and maintenance of the water supply infrastructure.

B. Controls

- 1) Where major development (including subdivision) is proposed adjacent to the Warragamba Pipelines corridor, applicants shall consult with the Sydney Catchment Authority (SCA) as part of the process of preparing the development application. Development is to be consistent with the SCA publication "*Guidelines for development adjacent to the Upper Canal and Warragamba Pipelines*". Any written requirements of the SCA shall be submitted with the DA and the DA documentation shall show how the requirements have been addressed.
- 2) Prior written approval shall be obtained from the SCA for any access that may be required to the Warragamba Pipelines corridor during the investigation and construction phases.
- 3) Access points to the Warragamba Pipelines corridor for SCA staff and contractors to carry out inspections and maintenance shall be retained or provided in accordance with SCA requirements.
- 4) Stormwater systems serving development adjacent to the Warragamba Pipelines shall be designed to ensure that stormwater does not enter the Warragamba Pipelines corridor.
- 5) Appropriate security fencing shall be provided, or existing security fencing retained along the length of development boundaries that directly adjoin the Warragamba Pipelines corridor, in accordance with SCA requirements.
- 6) Road crossings of the Warragamba Pipelines shall be minimised and located and designed in accordance with SCA requirements.
- 7) Where possible, a local road or shareway shall be provided between development and the Warragamba Pipelines corridor.
- 8) Earthworks (excavation or filing) and landscaping works carried out adjacent to or crossing the Warragamba Pipelines shall avoid damage to the infrastructure in accordance with SCA requirements.

Table of Contents

D1 RURAL LAND USES	2
1.1. RURAL CHARACTER	3
1.2 RURAL DWELLINGS AND OUTBUILDINGS	4
1.2.1. SITING AND ORIENTATION OF DWELLINGS AND OUTBUILDINGS	5
1.2.2. SETBACKS AND BUILDING SEPARATIONS	8
1.2.3. SITE COVERAGE, BULK AND MASSING	10
1.2.4. HEIGHT, SCALE AND DESIGN	11
1.2.5. DUAL OCCUPANCY DWELLINGS	13
1.2.6. SECONDARY DWELLINGS	15
1.2.7. MATERIALS AND COLOURS	15
1.2.8. LAND IN THE VICINITY OF PROPOSED SECOND SYDNEY AIRPORT	16
1.3. FARM BUILDINGS	18
1.3.1. SITING AND ORIENTATION	19
1.3.2. FLOOR SPACE, HEIGHT AND DESIGN	21
1.3.3. MATERIALS AND COLOURS	23
1.4. AGRICULTURAL DEVELOPMENT	24
1.4.1. EXTENSIVE AGRICULTURE	25
1.4.2. INTENSIVE LIVESTOCK AGRICULTURE	26
1.4.3. POULTRY FARMS, PIGGERIES, FEEDLOTS AND DAIRIES	29
1.4.4. ANIMAL BOARDING OR TRAINING ESTABLISHMENTS	34
1.4.5. AQUACULTURE	36
1.4.6. HORTICULTURE	37
1.5. NON-AGRICULTURAL DEVELOPMENT	40
1.5.1. RURAL AMENITY AND DESIGN	41
1.5.2. HOME BUSINESSES AND HOME INDUSTRIES	42
1.5.3. TOURIST AND VISITOR ACCOMMODATION	43
1.5.4. RURAL INDUSTRIES	43
1.5.5. RETAIL PREMISES	44
1.5.6. TRUCK PARKING AREAS	46

D1 Rural Land Uses

A. Background

Overview

The location of Penrith at the western fringe of Sydney and at the foothills of the Blue Mountains escarpment provides it with a unique countryside setting. Its urban areas are flanked by the Ropes Creek corridor, the Nepean Valley flood plains and significant bush land areas.

The surrounding countryside covers a large percentage of the City's area and comprises productive rural lands to the north and south, natural reserves, riparian environments and rural villages. These rural areas form an integral part of the character of the City. This character is valued by the community and is one which Council is committed to preserving.

The rural areas that are covered by this section of the DCP include land zoned RU1 (Primary Production), RU2 (Rural Landscape), RU4 (Primary Production Small Lots), RU5 (Village) and other zones where rural land uses may occur including the E3 (Environmental Management) and E4 (Environmental Living) zones.

B. General Objectives

- a) To reinforce Penrith's urban growth limits and promote a compact City by identifying and promoting the intrinsic rural values, character and functions of the City's rural lands;
- b) To sustain healthy and diverse rural lands in Penrith by conserving their biodiversity, maintaining the integrity of their ecosystems, maintaining their natural capital, and promoting the social well being of rural communities;
- c) To promote agriculture and other rural land uses that are sustainable in the longer term, through the use of appropriate resource and environmental management policies, plans, guidelines and practices;
- d) To promote a sustainable economic environment that fosters economically viable rural development, employment, transport and future investment opportunities;
- e) To increase the awareness of ecologically sustainable rural land use practices amongst landholders, land users and the community generally, and promote responsible stewardship of Penrith's rural lands;
- f) To consider the impacts of development on sustainable agriculture and ensure development will not unreasonably increase agricultural land values or incrementally reduce the size of agricultural holdings;
- g) To consider the potential for conflicts between various land uses, including rural living allotments, small holding subdivision, tourism, extensive and intensive agriculture and mining;
- h) To consider land capability, including soils, erosion potential, slope, and hazards (contamination, salinity, bushfire and flooding);
- i) To consider water resources, including impacts on water catchments, adequacy of water supply, access to water entitlements, and location of effluent disposal;
- j) To maintain and improve the water quality of watercourses within the City;
- k) To minimise the impacts of development on biodiversity, including threatened species, habitat, natural ecosystems and wildlife corridors;

- l) To consider existing infrastructure, including the capacity of the existing road network and utility services to meet the expected needs of proposed development;
- m) To promote rural residential development where it is consistent with the conservation of the rural, agricultural, heritage and natural landscape qualities of the area; and
- n) To ensure that traffic generating developments are suitably located so that the safety and efficiency of roads is not adversely affected by development on adjacent land.

C. Other Relevant Sections of this Plan

Penrith DCP 2014 is a multi layered and integrated document that recognises the inter-relationships between a number of issues, all of which contribute to sustainable outcomes. It is therefore important to read all parts of this DCP.

Council will consider each development application on its merit, having regard to this section and other relevant sections of the DCP, and other relevant environmental planning instruments, contributions plans or Council policies. Compliance with this Chapter alone does not guarantee that consent will be granted to an application.

D. Other Information

People seeking further information on rural land uses or preparing development applications may wish to refer to the following:

- Penrith Rural Lands Study (Penrith City Council, 2001)
- Penrith Rural Lands Strategy (Penrith City Council, 2003)
- Policy for Sustainable Agriculture in New South Wales (NSW Agriculture, 1998)
- State Environmental Planning Policy (Rural Lands) 2008
- NSW Biodiversity Strategy (National Parks and Wildlife Service, 1999).

1.1. Rural Character

A. Background

Protecting the character of Penrith's rural lands is a key driver for this DCP. Rural character is primarily visual – it is the overall impression of our rural lands viewed by people visiting them or driving through them. Consequently, the provisions aimed at protecting rural character focus on ensuring that the visual impact of development is in keeping with rural areas, and does not unnecessarily intrude on the landscape. The Penrith LEP 2010 Scenic and Landscape Values Map identifies land which is particularly sensitive to visual impact. Although the visual impact of development will be considered for every application, it is particularly critical in these areas.

The key components that contribute to Penrith's rural character are the rural landscapes, agricultural lands, native vegetation, biodiversity and riparian corridors, areas of mixed rural uses and rural living areas.

B. General Objectives

- a) To preserve the rural character of the City of Penrith, including its scenic and landscape qualities;
- b) To retain and protect each of the elements that make up the rural character of Penrith; and

- c) To address the visual impact assessment requirements for major applications, as required.

C. Controls

To preserve the rural character of the City of Penrith, all major development should seek to retain and protect the scenic, landscape and rural character of the City (where the relevant land uses are permissible within the zone and in accordance with the controls in Penrith LEP 2010 and this DCP).

Major development applications may be required to provide more detailed studies including, but not limited to, a Visual Impact Assessment (See section on 'Site Planning and Design Principles' and Appendix F3 'Submission Requirements').

1.2 Rural Dwellings and Outbuildings

A. Background

Rural Dwellings

Penrith's rural areas contain a diverse range of housing types. The style, size and location of dwellings are, in many areas, typical of specific eras and social influences.

Some localities, for example, are typified by small scale fibro or brick cottages within a tapestry of agricultural activities. Other, more recently developed, areas contain more residential development and smaller scale agricultural activities, where the separation between buildings is reduced.

All development should take into account the inherent rural character of a locality and be responsive to that character and the local landscape qualities.

Outbuildings

Outbuildings are an integral part of rural life and activities. They include carports, garages, garden sheds, small-scale storage sheds for non-agricultural purposes, gazebos, etc. Outbuildings should be designed and sited to complement rural character. Inappropriate uses and activities are not permitted.

In some cases, outbuildings may be exempt or complying development under State Environmental Planning Policy (Exempt and Complying Development Codes) or Penrith LEP 2010. If an outbuilding does not meet the relevant criteria specified in the SEPP or LEP, then development consent will be required.

B. General Objectives

- a) To ensure that development does not detract from the rural landscape, scenic quality, heritage value, nature conservation significance or agricultural productivity of rural areas;
- b) To provide separation between residential uses and noise generating sources;
- c) To provide buffers between residential buildings and land uses to minimise the potential for land use conflict and additional pressure on agriculture or other rural activities;
- d) To ensure that external finishes used have minimal detrimental impact on the visual amenity of an area;
- e) To encourage consideration of all the rural components of development such as fencing, outbuildings, driveways and landscaping in the design of the proposed development; and
- f) To encourage a diversity of interesting rural dwellings and outbuildings, which respect the inherent character of the locality.

1.2.1. Siting and Orientation of Dwellings and Outbuildings

A. Background

This section aims to ensure the siting of dwellings and outbuildings takes into account the principles of site planning, landscape/scenic character and the environmental qualities of the area and site.

B. Objective

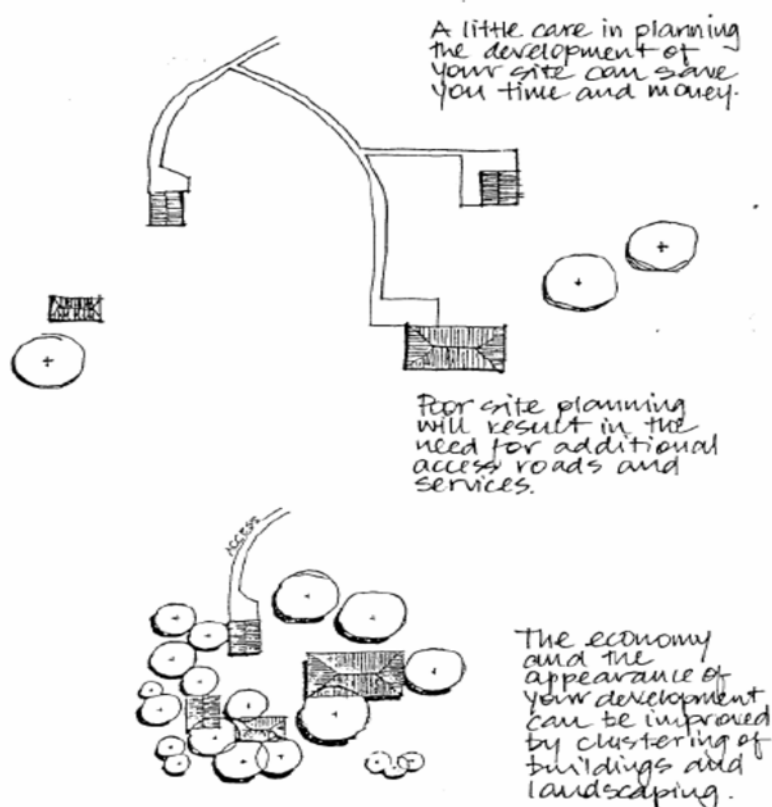
The objective of this section is to ensure dwellings and outbuildings are sited in accordance with the general objectives listed above.

C. Controls

1) Site Planning

- a) Dwellings and associated buildings should be sited to maximise the natural advantages of the land in terms of:
 - i) Protecting the privacy of proposed and existing buildings;
 - ii) Providing flood-free access to the dwelling and a flood-free location for the dwelling itself;
 - iii) Minimising risk from bush fire by considering slope, orientation and location of likely fire sources;
 - iv) Maximising solar access;
 - v) Retaining as much of the existing vegetation as possible; and
 - vi) Minimising excavation, filling and high foundations by avoiding steep slopes (greater than 1 in 6).
- b) The design of the development must consider all components including fencing, outbuildings, driveways and landscaping.
- c) Where practical, all buildings on a site, including dwellings and outbuildings, should be clustered to improve the visual appearance of the development in its landscape setting and reduce the need for additional access roads and services.

Figure D1.1 Site Planning - Consider the natural advantages of the land, and cluster buildings where possible.



2) Landscape / Scenic Character

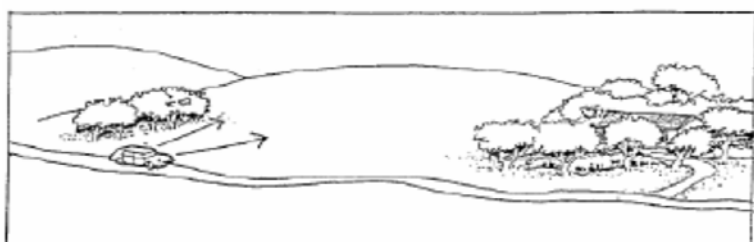
- Buildings on sloping land should be sited (where natural features permit) so they do not intrude into the skyline.
- Buildings should not be placed on the ridgeline or peak of any hill unless there are no alternative locations possible.
- Where practical, buildings should be sited to take advantage of existing vegetation to provide privacy from passing traffic and public places, screening from winds and a pleasant living environment.
- Roads should be designed and located to run with the contours of the land.
- Rooflines and ridgelines should reflect the setting of the dwelling, incorporating simple shapes to step a building down with a sloping site or level change.
- Simple rooflines should be used to minimise the likelihood of twigs and leaves building up in valleys and presenting a bushfire hazard.

Figure D1.2 Scenic Character - Set buildings below the ridgeline or behind vegetation to reduce visual impact and enhance privacy.

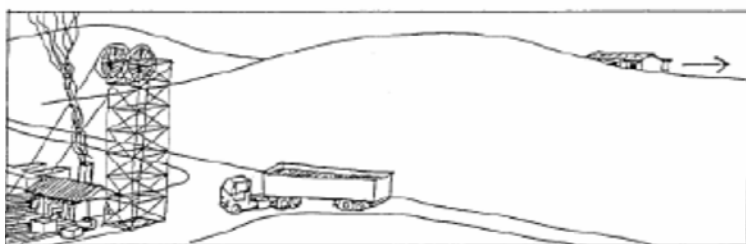
SITING OF HOUSES

Often, with a little thought you can choose a site for your house which is private, sheltered from winds or noise yet has good views.

A little effort in selecting your house site may save you later problems.



New plantings or existing vegetation can give you privacy from passing traffic.

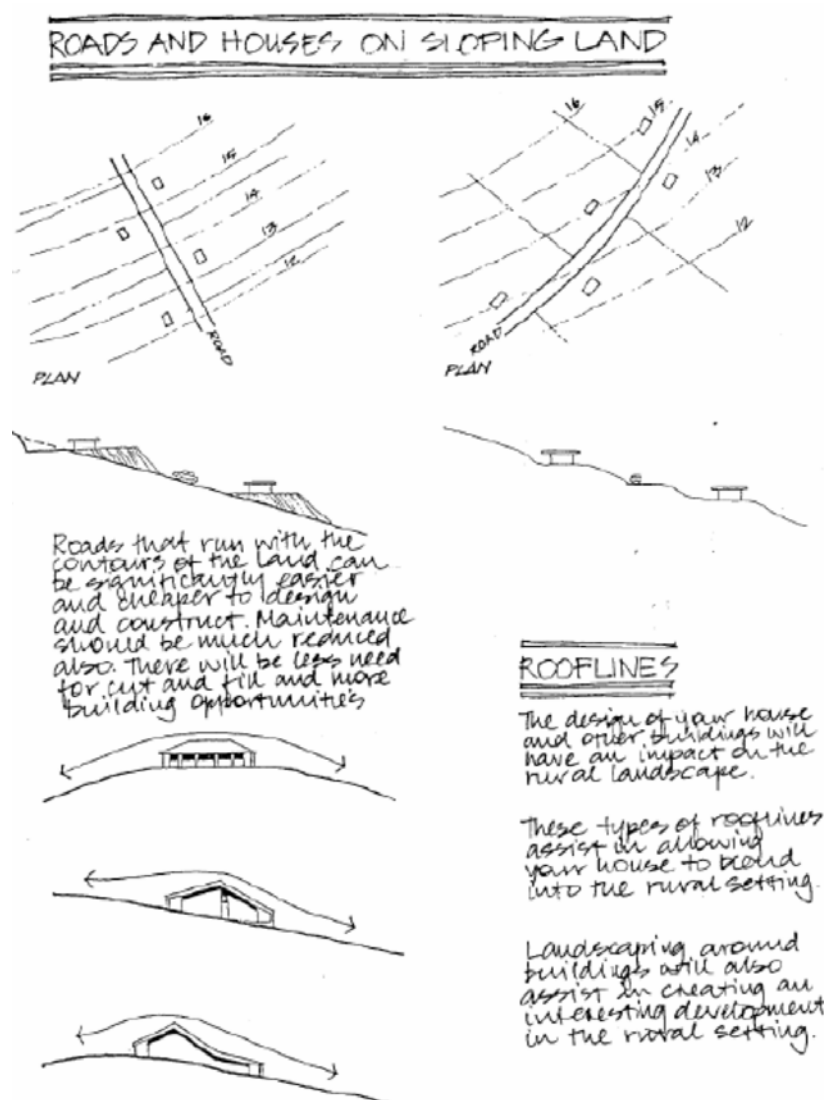


Siting the house over the crest of the hill minimizes the impact from nearby development.



Houses in a developed landscape will be private, screened from winds and will provide a pleasant living environment.

Figure D1.3 Roads and houses on sloping land and rooflines



1.2.2. Setbacks and Building Separations

A. Background

This section aims to maintain visual and acoustic amenity for dwellings by requiring setbacks from public roads and dwellings and other buildings on adjacent allotments. Setbacks from watercourses protect both the dwelling and outbuilding in the event of a flood, and the riparian corridor, associated vegetation and water quality.

B. Objectives

Dwellings and outbuildings are to be sufficiently setback from roads, property boundaries and watercourses:

- To maintain sight distances for vehicular safety; and
- To preserve trees and other vegetation, and provide adequate areas for landscaping.

C. Controls

1) Setbacks from Roads

- a) A minimum setback of 15m from public roads is required for all dwellings and outbuildings. Formal parking areas are not permitted within the setback.
- b) A variety of setbacks will be encouraged to prevent rigidity in the streetscape.
- c) A minimum setback of 30m is required to all classified roads (except Mulgoa Road), Luddenham Road, Greendale Road and Park Road (except in the villages of Londonderry, Wallacia and Luddenham). Please contact Council to discuss.
- d) A minimum setback of 100m is required to Mulgoa Road for all dwellings and outbuildings (except in the Mulgoa Village).

2) Setbacks from Watercourses

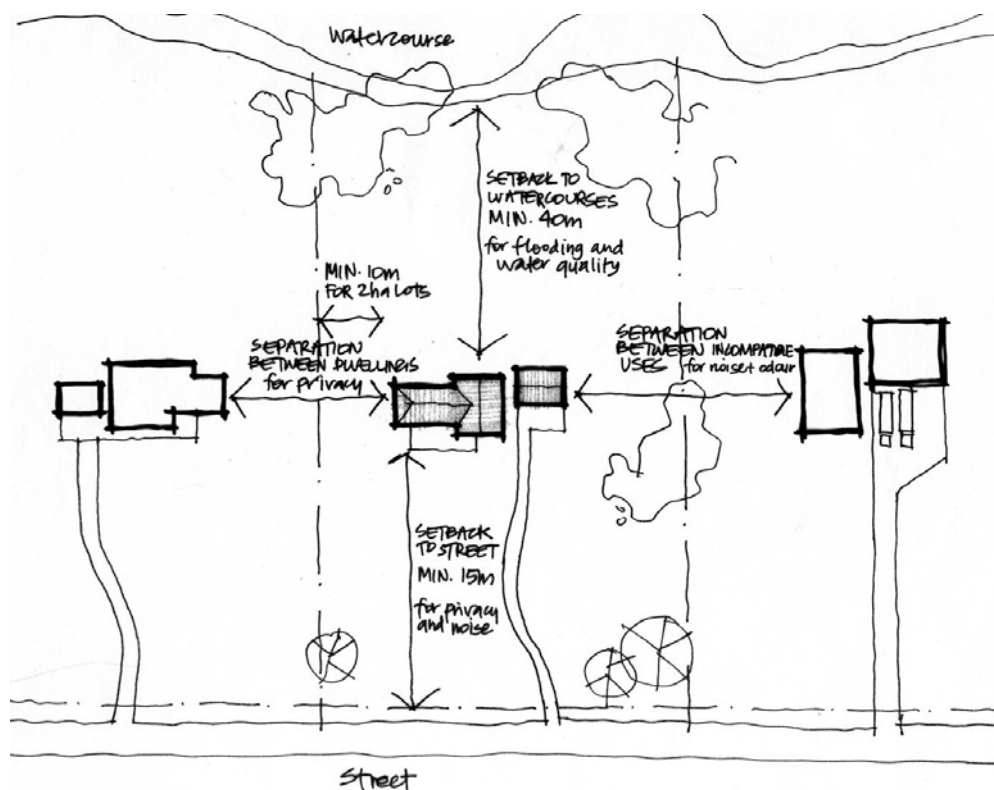
- a) A minimum setback of 100m is required from the Nepean River. This is measured from the top of the bank. The river includes all elements, such as lagoons and backwaters. Council will determine the minimum setback required if the “bank” is difficult to define.
- b) A minimum setback of 75m is required from South Creek for all dwellings and outbuildings.
- c) A minimum setback of 40m is required from any other natural watercourses for all dwellings and outbuildings to minimise impacts on the watercourse.

3) Building Separations and Side Boundary Setbacks

- a) Dwellings on adjacent properties should be considered when determining the location of a proposed dwelling to ensure that separation distances are maximised as far as is reasonably possible to maintain amenity for each dwelling and minimise noise and privacy intrusions.
- b) The minimum side setback for dwellings is 10m where the allotment is 2 hectares or larger.
- c) The minimum side setback for dwellings is 5m where the allotment is less than 2 hectares.
- d) Dwellings on one allotment should be separated as much as reasonably possible from any farm buildings or other buildings on adjacent allotments where there is potential for noise generation from those farm buildings/other buildings.

Minimum separations depend on the nature of the farm buildings/activity occurring on the adjacent allotment. Minimum setbacks are set out in other sections of this chapter for agricultural and other types of development.

Figure D1.4: Setbacks for rural dwellings and outbuildings



1.2.3 Site Coverage, Bulk and Massing

A. Background

This section aims to ensure that rural developments adopt a suitable level of development and site coverage that is in keeping with the rural landscape and character.

B. Objectives

- a) To ensure the size of rural dwellings is appropriate considering the size of the site and the character of the area; and
- b) To ensure the area of the site covered by rural dwellings and associated structures and facilities is appropriate considering the size of the site and the character of the area.

C. Controls

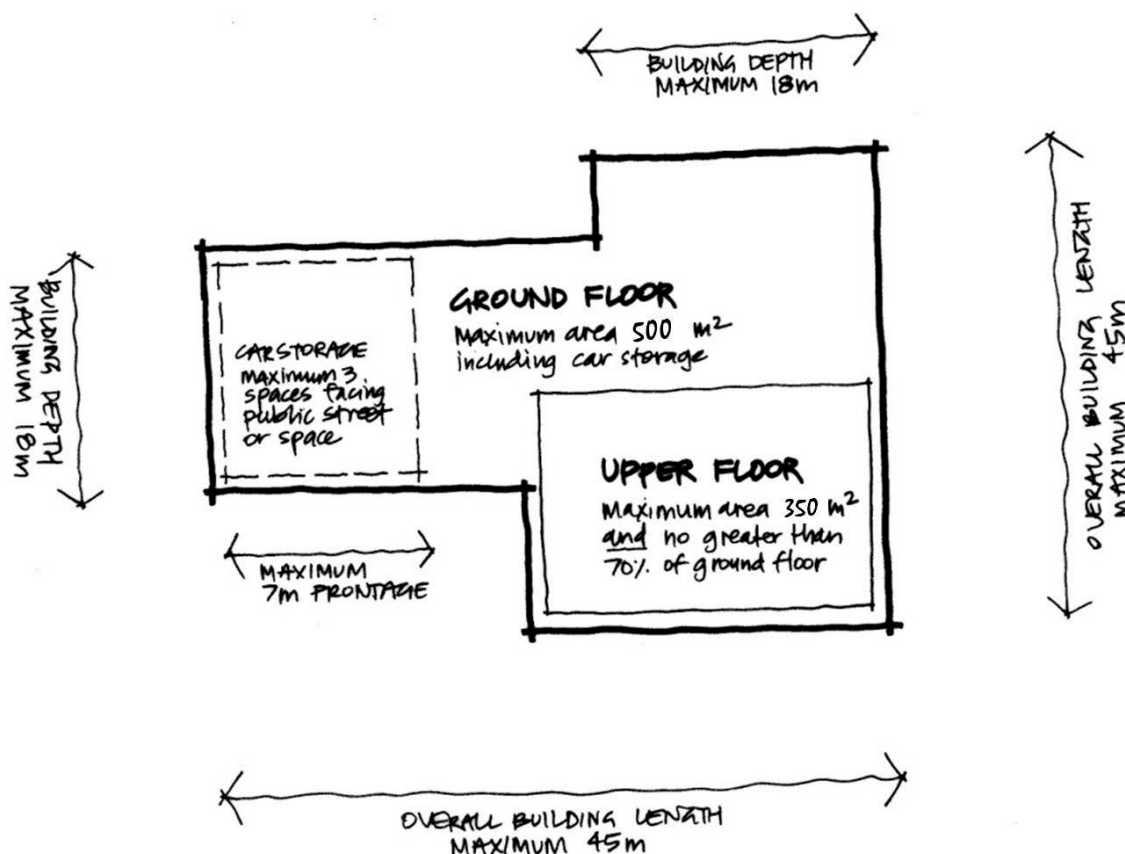
- 1) Dwellings shall have a maximum ground floor footprint of 500m² (including any undercover car parking areas).

Note: 'Ground floor footprint' is the area measured from the external face of any wall of any dwelling, outbuilding (other than a farm building), dual occupancy dwelling, garage or undercover car parking area, animal house or garden shed.

- 2) Dwellings shall have a maximum overall ground floor dimension of 45m, with a maximum of 18m at any one point.
- 3) The maximum floor space of any second storey is to be 70% of the floor space of the lower storey of the dwelling.

- 4) No more than three (3) undercover car parking spaces shall face towards a public road or place. Any additional garages shall be setback behind the building line and screened.
- 5) A maximum ground floor footprint of 600m² will be permitted on any one allotment, including the dwelling and all associated structures, but excluding 'farm buildings' and any 'agricultural or non-agricultural development' referred to other parts of this chapter.

Figure D1.5: Maximum site coverage and building lengths for dwellings



1.2.4 Height, Scale and Design

A. Background

This section aims to ensure that rural dwellings and outbuildings adopt an appropriate height, scale and design suited to the rural landscape and character of the area.

B. Objectives

Dwellings and outbuildings are to adopt:

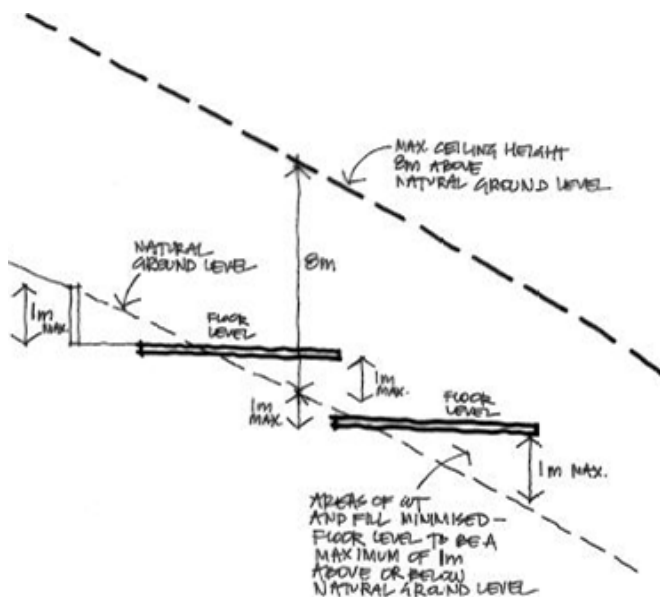
- a) An appropriate height and scale for the size of the site and character of the area; and
- b) A high quality of design that is sympathetic to the rural character but also promotes innovation.

C. Controls

1) Height and Scale

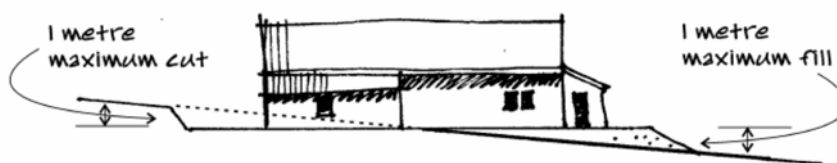
- a) Dwellings shall be no more than two storeys in height, including garage and storage areas.
- b) If liveable rooms are located in the area immediately below the roof then this level will be counted as a storey.
- c) The maximum height of the ceiling of the top floor of all buildings should not exceed 8m above natural ground level.

Figure D1.6: Maximum height on sloping land



- d) On sloping sites, split level development is preferred. The floor level of the dwelling at any point should not be greater than 1m above or below the natural ground level immediately below the floor level of that point. Cut and fill should be limited to 1m of cut and 1m of fill as shown in Figure D1.7.

Figure D1.7: Maximum permitted cut and fill



2) Design and Quality

- a) The design of dwellings and associated structures should be sympathetic to the rural character of the area.

- b) Fencing is to be of an open rural nature consistent in style with that normally found in rural areas. Internal courtyard fencing or entry fencing should be sensitive to the rural environment.

1.2.5. Dual Occupancy Dwellings

A. Background

Development of rural land for dual occupancy dwellings needs to be carefully designed and implemented to mitigate any potential impacts of the increased density of this form of development on local character and landscape.

The concept of a dual occupancy is to have the second dwelling either as an addition to the house or a separate building smaller than the main dwelling. This protects the traditional rural streetscape of residential buildings and farm buildings separated by large spaces.

Any application for dual occupancy will need to address issues of size, design, location and environmental impacts to ensure that the desired rural character is maintained.

As a general rule, dual occupancy must comply with the requirements for rural dwellings relating to:

- Siting and orientation;
- Setbacks and building separations;
- Bulk and massing (excluding site coverage); and
- Height, scale and design.

B. Objectives

The objective of this section is to permit dual occupancy development which:

- a) Is in close proximity to and associated with the existing dwelling on the site; and
- b) Adopts a similar or sympathetic design to the existing dwelling on the site.

C. Controls

These controls apply to dual occupancies in the RU1, RU2, RU4, E3 and E4 zones only.

1) Design

- a) Dual occupancies should be designed in accordance with the policies in this DCP for dwellings and dwelling design.
- b) The second dwelling should take into account the principles in the sections on 'Site Planning and Design Principles', 'Vegetation Management' and 'Landscape Design' (with particular attention to protecting existing trees and vegetation on the site) of this DCP.
- c) The second dwelling should be located within the curtilage (proximity) of the existing dwelling house on the same lot (and preferably within its garden area).
- d) The second dwelling must be located behind the building line of the existing dwelling house.
- e) The preference is for the second dwelling to be detached from the first dwelling with a minimum separation of 10m.
- f) If the dwellings are attached then the second dwelling should be located behind the existing dwelling and should adopt an 'L' shape.

- g) The second dwelling must be significantly smaller than the existing dwelling house (approximately 50% in floor area).

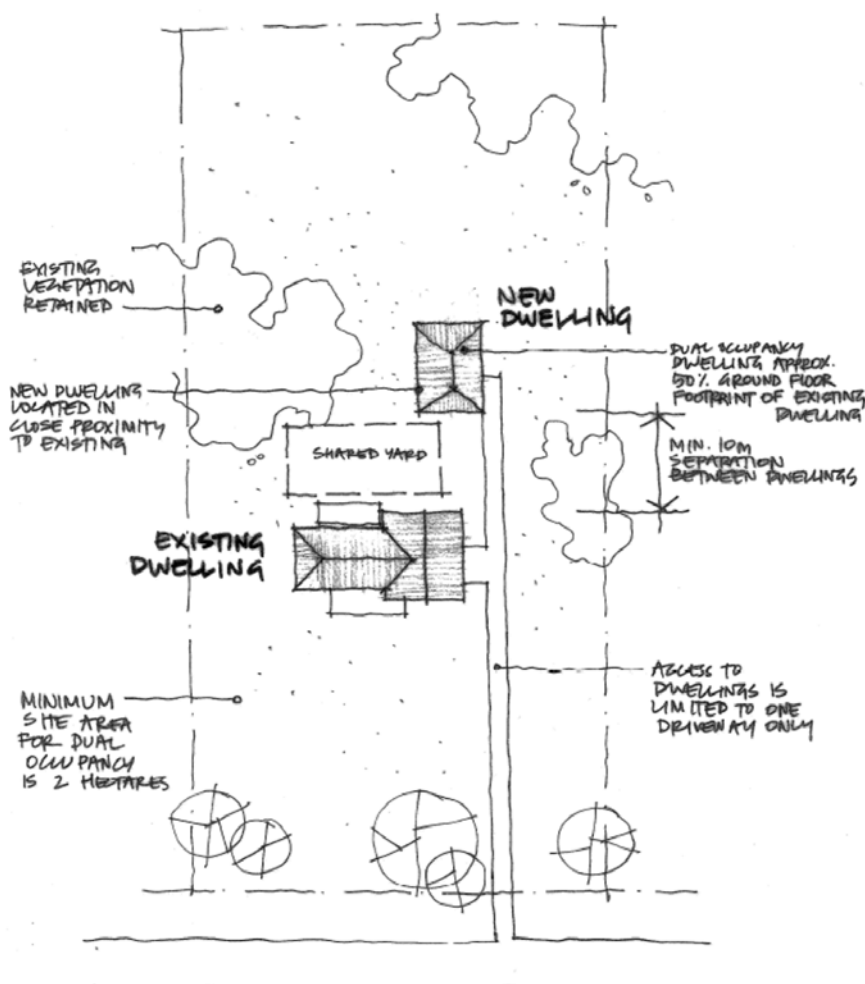
Consideration, however, will be given to varying this control where the existing house has a floor area of less than 200m².

- h) The development should be designed so that the dwellings complement each other and the rural character. In this regard, external finishes should be similar or compatible. Council may require upgrading of the existing dwelling where considered necessary.

2) Access, Parking and Services

- a) Access to dual occupancies is to be via a common driveway to both dwellings.
- b) At least one accessible and covered off-street parking space shall be provided on site behind the building line for each dwelling.
- c) There should only be one electricity line and meter on the property servicing both dwellings.

Figure D1.8: Key principles for dual occupancy development



1.2.6 Secondary Dwellings

A. Background

Subject to meeting certain criteria, secondary dwellings (or granny flats) are generally permissible with consent in rural zones, though some exclusions apply (refer to Penrith LEP 2010).

Secondary dwellings may be considered either upfront as part of building a new dwelling or as an addition to an existing dwelling. As a general rule, secondary dwellings must comply with the requirements for rural dwellings and dual occupancy development.

B. Objectives

The objective of this section is to permit secondary dwellings which:

- a) are part of, attached to or in close proximity to the existing dwelling on the site;
- b) are limited in their size; and
- c) adopt a similar or sympathetic design to the existing dwelling on the site.

C. Controls

- 1) With the exception of floor area, the controls applying to dual occupancy development apply to secondary dwellings.
- 2) Clause 5.4 of Penrith LEP 2010 sets the maximum floor space of secondary dwellings at 60 m² or 10% of the total floor area of the principal or main dwelling, whichever is the greater.
- 3) Secondary dwellings may be located on a lot of less than 2 hectares in size, where it can be demonstrated that the effluent disposal system has sufficient capacity for both dwellings.
- 4) Secondary dwellings shall have a maximum of two bedrooms.

1.2.7. Materials and Colours

A. Background

This section aims to ensure that the materials and colours for any rural dwellings and associated structures (including outbuildings) are of a high quality and are sympathetic to the character of rural areas.

B. Objectives

The objective of this section is to ensure that dwellings and outbuildings:

- a) Use materials that are durable and of high quality; and
- b) Use colours that are sympathetic to the rural character and minimise any visual impact from the development.

C. Controls

- 1) Colours of external finishes should be in keeping with the natural surroundings, be non-reflective and utilise earthy tones, unless it can be demonstrated that the proposed colours and finishes will have no visual impact or will complement the rural character.

- 2) Building materials with reflective surfaces such as large expanses of glass, unpainted corrugated iron, concrete blocks, sheet cladding or similar finishes should be avoided. Where these materials are unavoidable, they should be screened with landscaping to minimise visual impact.
- 3) Re-sited dwellings may be considered in rural areas, however, the external finishes may be required to be upgraded to Council's satisfaction.

1.2.8. Land in the Vicinity of Proposed Second Sydney Airport

A. Background

This section relates to land which may be under the flight path of the proposed second Sydney airport as identified in the Department of Aviation's Environmental Impact Statement (1985).

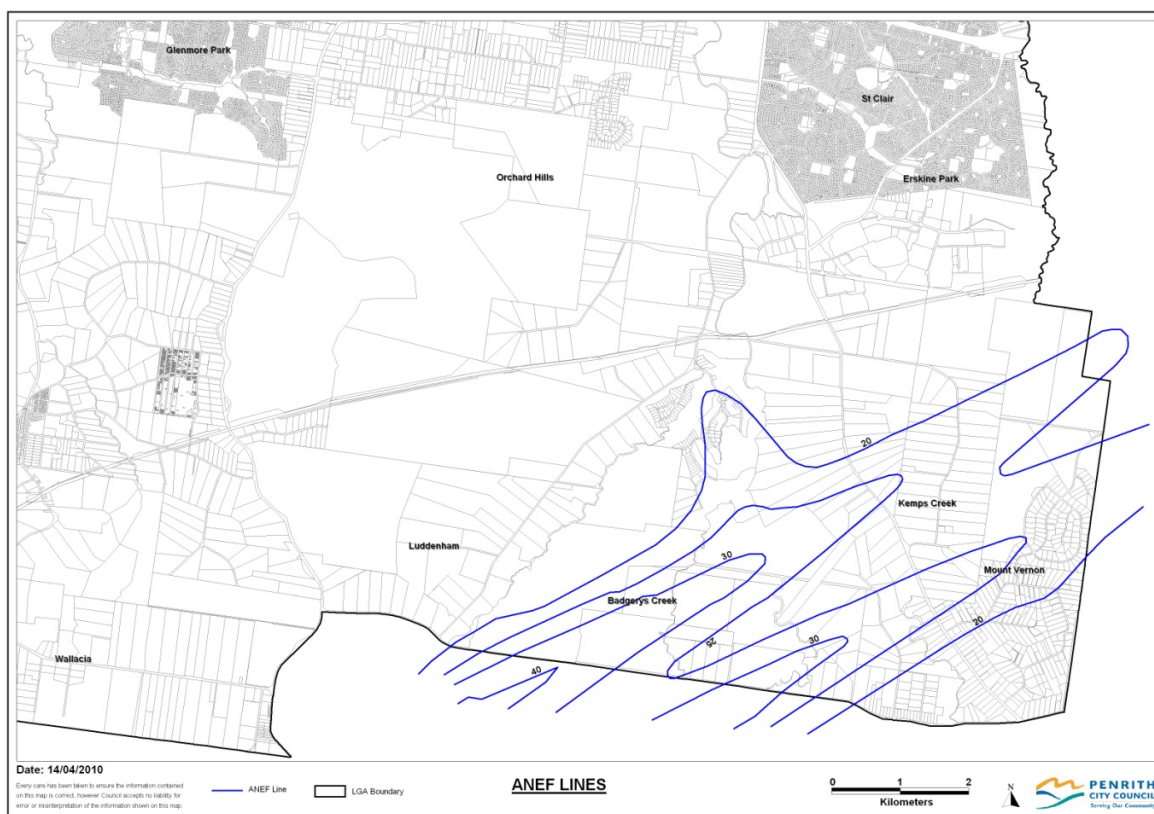
B. Objectives

- a) To allow development which is compatible with the predicted noise levels; and
- b) To prevent the approval of dwellings in areas where noise levels may be unacceptable.

C. Controls

- 1) New dwellings (or significant alterations and/or additions to existing dwellings) within the 20-25 Australian Noise Exposure Forecast (ANEF) zone shall be designed to achieve the requirements discussed in the section on 'Aircraft Noise' in the 'Noise and Vibration' section of this Plan.
- 2) New dwellings (or significant alterations and/or additions to existing dwellings) will not be permitted on land where the ANEF exceeds 25.

Figure D1.9: Land affected by ANEF contours for the proposed second Sydney airport



D. Lifting the Bar

The following represent some ways in which applicants can demonstrate additional commitment to the principles expressed in this DCP. Demonstration of this commitment may lead to Council considering variation of development controls. Applications that vary the development controls listed in the 'Rural Dwellings and Outbuildings' section of this Plan will need to demonstrate that the proposed development complies with the objectives relevant to the development controls it seeks to vary.

- 1) Improved sustainability outcomes including vegetation management and landscaping, water management, land management and waste management in accordance with this DCP;
- 2) Consideration of larger dwellings where it demonstrates:
 - a) High quality architectural design;
 - b) Innovation;
 - c) Integration into the landscape design;
 - d) Consideration of the visual catchment and the rural and scenic character of the area;
 - e) Articulation to reduce building scale and bulk; and
 - f) Minimisation of hard surfaces.
- 3) Inclusion of the top ten features of a 'Universally Designed' home in designing dwellings:
 - a) Easy access to the entrance;
 - b) Level entry;

- c) Essential living areas on entry level;
- d) Bathroom capable of future adaptation;
- e) Reinforcement of bathroom walls;
- f) Easy access to and within the kitchen;
- g) Easy access doors and corridors;
- h) Consistent installation of switches, power points and window controls;
- i) Easy operable door and window hardware; and
- j) Straight stairways.

1.3 Farm Buildings

A. Background

As the nature of agricultural activities changes, there has been an increase in the number and size of farm buildings and a corresponding increase in their impacts on the surrounding area. For this reason, it is necessary to provide controls for all developments involving farm buildings.

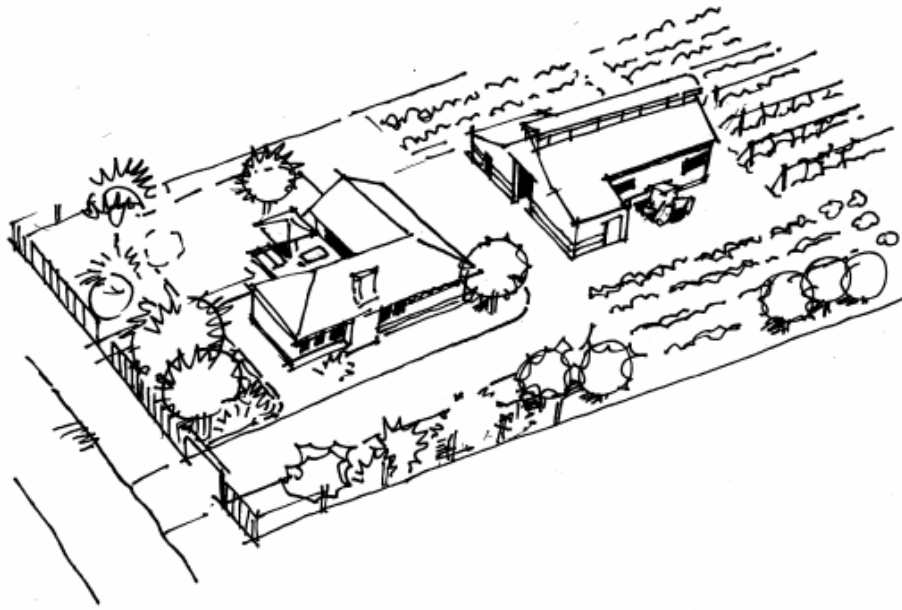
Unless specifically stated, the controls for farm buildings also apply to all sheds and outbuildings ancillary to any permissible use of rural land (specific to the relevant zone), whether or not that use is considered an agricultural use.

In some cases, there are additional controls for particular buildings, such as greenhouses and poultry farms. These controls are included in other relevant sections of this chapter. Where there is an inconsistency between this section and the other relevant part of this chapter, the controls in the latter should be applied.

B. General Objectives

- a) To establish the rationale and controls for environmentally appropriate development;
- b) To ensure the siting, size, design, external appearance and uses of farm buildings do not detract significantly from the rural and environmental qualities of the locality;
- c) To ensure that farm buildings promote and support sustainable agriculture and other permissible rural land uses in the rural areas of the City; and
- d) To ensure farm buildings are sited with regard to good site planning principles.

Figure D1.10: Siting of a farm building



1.3.1. Siting and Orientation

A. Background

These controls aim to ensure that farm buildings are appropriately sited and oriented having regard to the rural character, environmental qualities and agricultural potential of the site and the local area.

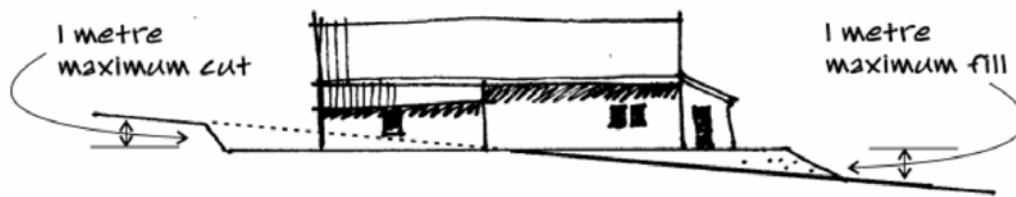
B. Objectives

- a) To integrate farm buildings with the landscape so they complement the rural character of an area and are not visually dominant;
- b) To ensure that farm buildings are located to have minimum adverse impact on the environment and on the potential use of the land for agriculture;
- c) To provide separation between potential noise generating sources; and
- d) To provide areas for landscaping between buildings.

C. Controls

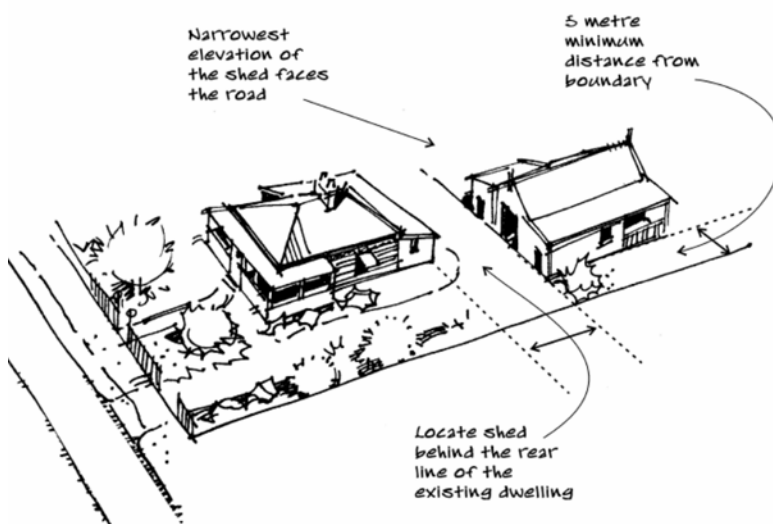
- 1) Farm buildings and outbuildings should be clustered in one location on properties. Where possible, this should be close to dwellings, but not where this will result in land use conflict.
- 2) Farm buildings should have complementary colours and finishes to the dwelling house and surrounding environment.
- 3) Farm buildings should not be erected on land having a slope in excess of 15%. Cut and fill for farm buildings should be limited to 1m of cut and 1m of fill as shown in Figure D1.11.

Figure D1.11



- 4) Farm buildings should be sited on the land so any disturbance to native vegetation is minimal.
- 5) The narrowest elevation of farm buildings should face the road.
- 6) Farm buildings shall be set back a minimum of 40m from any watercourse.
- 7) Farm buildings should be setback behind the building line of the existing dwelling house on the property.
- 8) Farm buildings should be a minimum distance of 10m from a dwelling located on the same allotment as the farm building.
- 9) Farm buildings should be a minimum distance of 20m from a dwelling located on an adjacent allotment to the farm building.
- 10) Landscape buffers should be provided, where possible, between farm buildings and nearby dwellings to minimise the visual impact of the farm building.
- 11) Farm buildings should be a minimum distance of 5m from the side boundaries.

Figure D1.12



Appropriate siting of a farm building to the rear of the dwelling and at a scale that does not dominate the dwelling

1.3.2. Floor Space, Height and Design

A. Background

The size of a farm building can have a significant impact on the visual amenity of an area. These controls seek to strike a reasonable balance between the use of the farm building, the use of the land and the size of the property.

B. Objectives

- a) To control the size and height of farm buildings to minimise their visual impact on the landscape;
- b) To ensure that the size of farm buildings is consistent with the intended use and the size of the property;
- c) To encourage improved design of farm buildings so they enhance the rural landscape and character of an area; and
- d) To ensure that farm buildings use a range of design measures to suit individual circumstances.

C. Controls

- 1) For allotments 3 hectares in size or less, the maximum accumulative building footprint of all farm buildings on an allotment shall not exceed 200m² (see Figure D1.13).
- 2) For allotments between 3 hectares and 10 hectares in size, the maximum accumulative building footprint of all farm buildings on an allotment shall not exceed 400m².

Note: 'Accumulative building footprint' means the total sum of the ground floor area of all of the farm buildings on a single property. (The floor area under an awning may also be included as part of the accumulative building footprint, depending on the circumstances).

- 3) For allotments more than 10 hectares in size, the maximum accumulative building footprint of all farm buildings on an allotment shall not exceed 600m².
- 4) Intensive agricultural uses may require larger accumulated building footprints than those specified above. Variation will be considered but must be justified in the application.
- 5) A farm building should not be more than 8m high.
- 6) The maximum external wall height of a farm building shall be 5m. External wall height means the distance from the natural ground level to the underside of the eaves.
- 7) Where a farm building is higher than the dwelling on the land, the building must be located behind the dwelling and screened from view by vegetation (or similar).
- 8) The design of farm buildings should comprise traditional roof shapes to provide visual relief to the building, reduce the buildings dominance over its setting and to provide interest and character to the locality.
- 9) Farm buildings should have a maximum external wall length of 15m between distinct corners or significant features such as awnings.
- 10) Farm buildings shall have a minimum roof pitch of 15° and a maximum roof pitch of 25°.
- 11) All elevations of farm buildings that face the street are to present a suitable level of detailing to minimize their visual bulk. Features which can be used include windows, awnings and verandahs.

Figure D1.13

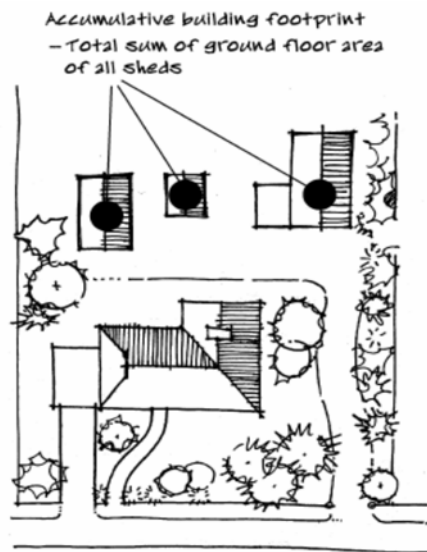


Figure D1.14

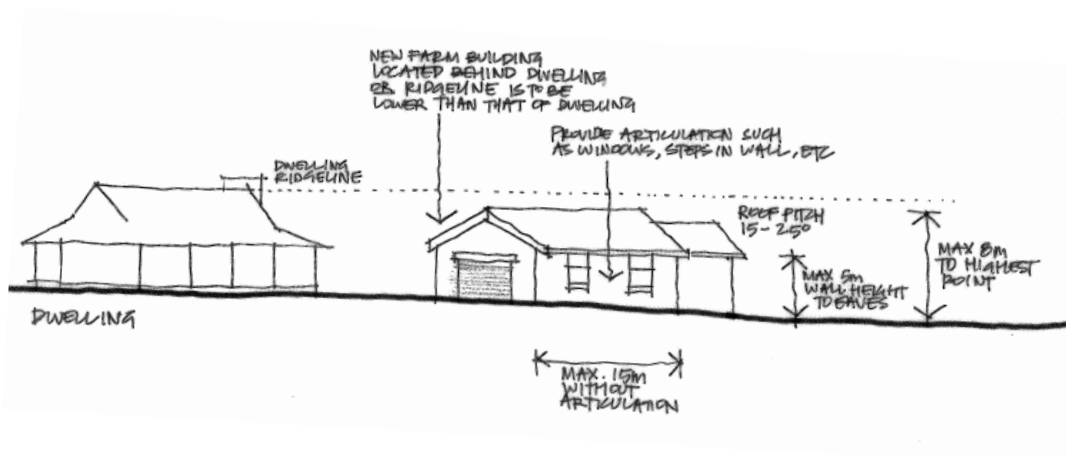


Figure D1.15



Farm building with rounded higher
roof element and awning



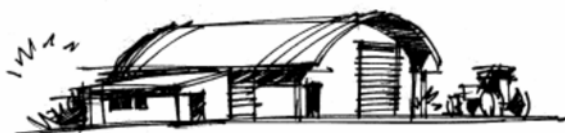
Simple gabled roof with awning - note farm building size and roof are in proportion



Farm building with gabled higher roof element and awning



Simple farm building with gabled roof and lean-to additions which assist in articulating the building form



A farm building of contemporary design that achieves articulation and interest to the form through a lean-to addition and rounded roof form

1.3.3 Materials and Colours

A. Background

It is important that farm buildings are constructed of appropriate materials and colours, which are present in the agricultural or natural environment of the locality. This is not intended to reduce innovative designs or use of materials as long as they are sympathetic to the rural landscape character of the area.

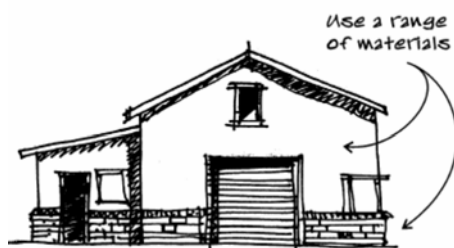
B. Objectives

- To ensure that the colours used in the construction of farm buildings are consistent with the prevailing colours of the locality; and
- To ensure that building materials used in farm building design reflect the rural setting and consist of traditional materials that are present in the locality.

C. Controls

- 1) The colour of farm buildings shall complement the colours of the natural vegetation and background of the property, such as grey, brown, beige and green.
- 2) Farm buildings shall be constructed of non-reflective materials. Where traditional materials, such as unpainted corrugated iron, are used, the building must be screened by landscaping to minimise its visual impact.
- 3) The construction of farm buildings should utilise a range of materials to aid in the articulation of the building form.
- 4) Where farm buildings are below the 1:100 ARI flood level, they are to be constructed of materials that can withstand flooding.

Figure D1.16



E. Lifting the Bar

The following represent some ways in which applicants can demonstrate additional commitment to the principles expressed in this DCP. Demonstration of this commitment may lead to Council considering variation of development controls. Applications that vary the development controls listed in the 'Farm Buildings' section of this Plan will need to demonstrate that the proposed development complies with the objectives relevant to the development controls it seeks to vary.

- a) Where farm buildings include large roof surfaces that are oriented towards the north, solar cells are placed on farm building roofs to capture solar energy for electricity generation or hot water systems;
- b) Where farm buildings include large roof surfaces, guttering systems and water tanks are connected to capture rainwater and store for re-use;
- c) Farm buildings are designed to allow natural ventilation for cooling to avoid the need for mechanical ventilation; and
- d) Where farm buildings involve substantial construction, they are designed to allow future reuse for other agricultural-related uses.

1.4. Agricultural Development

A. Background

The aim of this section is to provide appropriate controls for a range of agricultural land uses.

One of the key conflicts regarding agricultural development is between the retention of viable agricultural lands and the demand for and expectations of large lot residential allotments.

This pressure is most acute when residential allotments are in close proximity to intensive agricultural uses, which may have a number of off-site impacts.

In addition to conflicts that exist between agriculture and other land uses, land use conflicts also exist between different forms of agriculture, such as intensive and extensive (broadacre) forms of agriculture, or organic and non-organic enterprises. Issues include chemical spray drift, dust, odour and noise. Traditional agricultural activities may also conflict with sensitive environmental areas.

B. General Objectives

- a) To encourage sustainable land use practices;
- b) To retain viable agriculture lands;
- c) To avoid land use conflicts;
- d) To adopt appropriate water management practices including water consumption patterns to maintain and improve water quality and flows;
- e) To ensure protection of biodiversity values and natural vegetation; and
- f) To ensure protection of heritage values and landscape values in rural areas.

1.4.1. Extensive Agriculture

A. Background

Extensive agriculture is permissible without consent in the RU1, RU2, RU4 and E3 zones. It does, however, require consent on some sites, which are listed in Schedule 1 Additional permitted uses of Penrith LEP 2010.

It should be noted that permitting extensive agriculture without consent does not automatically permit the clearing of native vegetation. If any clearing is required to carry out extensive agriculture, consent must be sought prior to clearing. In this regard, applicants should refer to the section on 'Vegetation Management' for further details.

Existing extensive agriculture requires a level of protection from rural residential development to remain viable both in terms of sizes of allotments and avoidance of land use conflicts that limit farming operations. In most cases, the allotment sizes in Penrith are not large enough to support new extensive agricultural businesses. Therefore, there is a need to protect the existing large allotments and agricultural enterprises, where possible.

In general terms, as there are fewer impacts from extensive agriculture, this form of agriculture does not require as comprehensive an assessment for consent as more intensive forms of agriculture.

All buildings associated with extensive agriculture should comply with the controls for farm buildings in Section 1.3 'Farm Buildings' of this Plan.

B. Objectives

- a) To support extensive agriculture where it is viable;
- b) To avoid environmental impacts from agricultural practices; and
- c) To restore native plant communities and increase the use of native grasses in grazing.

C. Controls

- 1) Any proposal for extensive agriculture should comply with the controls set out in the other sections of this DCP.

- 2) Agricultural practices shall give consideration to:
 - a) Obligations under the Noxious Weeds Act 1993,
 - b) NSW Department of Primary Industries guidelines at www.dpi.nsw.gov.au; and
 - c) Use of native grasses for grazing.
- 3) Use of chemicals (including pesticides and herbicides) should be in accordance with:
 - a) Agricultural and Veterinary Chemicals Act 1994; and
 - b) Agricultural and Veterinary Chemicals (NSW) Regulation 2000.

1.4.2 Intensive Livestock Agriculture

A. Background

Intensive livestock agriculture has the potential to impact on surrounding properties and the environment. Some of the key issues are:

- a) Impacts on the amenity of surrounding areas, especially in relation to odour, dust, noise and insects;
- b) Impacts on surface and groundwater, as well as land degradation, resulting from poor management practices;
- c) Availability of suitable land areas for managing effluent and manure sustainably;
- d) Availability of suitable water supplies for stock water, cleaning (e.g. washing out dairies) and, depending on effluent volume and quality, for dilution of effluent for irrigation;
- e) Management of other wastes (e.g. dead carcasses); and
- f) Impacts on rural landscape character.

All buildings associated with intensive livestock agriculture should comply with the controls for farm buildings in Section 1.3 Farm Buildings of this Plan. Where there is an inconsistency between Section 1.3 Farm Buildings and this section (Agricultural Development), the controls in this section should be applied.

B. Objectives

- a) To ensure that an appropriate water supply is available for the proposed use and sustainable water management practices are adopted;
- b) To allow intensive livestock production where satisfactory arrangements are made for the containment and disposal of wastes;
- c) To ensure adequate drainage for the site, whilst avoiding contamination of waterways or land;
- d) To provide dust, odour, pest and vermin control to minimise the impact on the amenity of neighbouring properties and users;
- e) To minimise traffic impacts and provide appropriate access and parking facilities for the size of the facility; and
- f) To minimise visual impact on the landscape and scenic qualities of rural areas.

C. Controls

These controls apply to all types of intensive livestock agriculture. More detailed controls for specific types of intensive livestock agriculture are set out later in this section.

1) Location

- a) Farm buildings and animal holding areas shall not be located in floodways to prevent loss of stock and pollution of waterways during flood events.
- b) The size and location of the intensive livestock agricultural use must take into account the distance of the proposed site to the nearest sensitive land use (including residential zones, educational establishments or groups of five or more dwellings) to minimise the impact of noise and odour.
- c) Intensive livestock agriculture shall be located so as to not impact on natural resources sensitive land identified on the Penrith LEP 2010 Natural Resources Sensitivity Land Map.

2) Water Supply

- a) Council will not grant consent for any new or substantially expanded intensive livestock agricultural use unless it is satisfied that the supply of water to the property is adequate. This may include pre lodgement consultation with Sydney Water.
- b) Council's consent is required to construct or form a dam, pond or water retention basin. Specific advice on the construction of dams can be obtained from NSW Department of Primary Industries. See also controls in the chapter on 'Water Management' relating to water retention basins/dams.

3) Waste Management

- a) Development applications must specify the method by which wastes, including the disposal of dead carcasses of animals and effluent, will be managed.
- b) On-site disposal of manure is generally not acceptable. On-site waste disposal may be considered where the allotment is of sufficient size and potential runoff is limited.
- c) The burning of animal carcasses is prohibited. Removal by waste contractors is preferred.
- d) No liquid or solid wastes from the intensive livestock agricultural use shall be allowed to enter into any stream, watercourse or groundwater or to contaminate land so as to render it unfit for future farming or other relevant activities.

4) Control of Pests and Vermin

- a) Adequate vermin control shall be carried out with a regular fly and pest control program.
- b) The control program shall comply with the requirements of NSW Department of Primary Industries and shall be maintained to the satisfaction of Council officers.
- c) Development applications must include information on how the requirements of the Noxious Weeds Act 1993 will be met.

5) Pesticides

For any new or substantially expanded intensive livestock agricultural use, the applicant should incorporate, in any development application, a schedule of all pesticides and other toxic chemicals likely to be stored and used on the site. The schedule should stipulate the purpose/s for which such chemicals are to be used, the manner of application and the extent of knowledge or experience that the person has had in using such chemicals.

6) Dust Control

- a) All areas of vehicular access are to be stabilised and treated in a manner to minimise dust nuisance caused by traffic generation.
- b) To eliminate dust as a nuisance, grass cover should be maintained and grown, wherever practical.
- c) Landscape buffers that will minimise dust transfer should be provided around all outdoor holding areas for hoofed animals.

7) Noise and Odour Control

- a) If the use is likely to produce odours that will impact on adjacent properties, the application must include an outline of management protocols to minimise impacts, considering prevailing winds, timing of cleaning, timing of effluent application, etc.
- b) If the use is likely to produce substantial noise (or noise during night hours), the application must include an outline of management protocols to minimise impacts, considering timing of operations, ways to minimise noise generation and travel, etc.

8) Drainage

- a) Development applications should be accompanied by details of the proposed method of draining the site.
- b) Drainage should be designed to incorporate treatment of wastewater to the standards of the NSW Office of Environment and Heritage.

9) Soil Erosion

- a) An Erosion and Sediment Control Plan will be required in conjunction with any development application for a new or substantially expanded intensive livestock agricultural use. This plan should be prepared in consultation with the NSW Department of Primary Industries and comply with all relevant sections of this DCP (especially the section on 'Land Management').

10) Landscaping

- a) All structures are to be screened by landscaping to minimise visual impact. A landscaping buffer should be established around the perimeter of all development.
- b) Plant species should include those which will grow to over 7m in height with a large canopy as well as smaller intermediate shrubs. Species that occur locally should be included in the landscaping plan. A list of appropriate species can be obtained from Council's Development Services Department.
- c) Planting should be adequately protected from damage by livestock or native animals during its establishment; e.g. using tree guards, or staking and wire.

11) Access, Traffic and Parking

- a) The frequency and intensity of traffic associated with all intensive livestock agriculture should be addressed in terms of the capacity of the road system.
- b) Access to the site should be provided from a main or secondary arterial road which is constructed to a standard to take articulated vehicles. Access should only be provided from a local road where it is not practicable to provide access from a main or secondary arterial road.
- c) The design of the development should incorporate parking and access areas related to the use and vehicles likely to be associated with the development.
- d) Client/employee parking areas and vehicular crossings are to be provided.

12) Visual Impact

- a) Any development should consider the impact on the rural and landscape character of the area and seek to minimise this visual impact by appropriate siting of buildings, landscaping and screen plantings, especially from public places and roads.
- b) The development shall be designed to have a minimal impact on the streetscape and views enjoyed by adjoining residences.

1.4.3 Poultry Farms, Piggeries, Feedlots and Dairies

A. Background

Poultry farms, piggeries, feedlots and dairies are specific forms of intensive livestock agriculture which can have significant additional impacts. Issues include:

- Concentrated noise from animals;
- Management of dust and odours; and
- Management of waste.

Council consent is required for any of these uses that will operate as a commercial venture.

B. Objectives

- a) To ensure properties used for these purposes are large enough to support the required facilities and allow sufficient setbacks from boundaries, adjacent land uses and public areas to minimise impacts, particularly noise;
- b) To provide appropriate buffer distances and setbacks between poultry farms, piggeries, feedlots or dairies and land reserved or in use for sensitive uses (particularly dwellings) to minimise noise, dust and visual impact;
- c) To ensure that farms are properly managed and methods of waste disposal are adequate;
- d) To adopt a consistent approach to planning for the development of new farms and extensions to existing farms;
- e) To provide controls for the prevention of excessive air, noise, water and visual pollution; and
- f) To minimise the visual impact of structures associated with these uses.

C. Controls

1) Preparing an Application

- a) NSW Department of Primary Industries and Penrith City Council should be contacted regarding their requirements prior to the preparation of any application.
- b) Certain proposals for piggeries and cattle feedlots must address the matters set out in State Environmental Planning Policy No.30 – Intensive Agriculture.

2) Allotment Sizes and Animal Numbers

- a) Poultry Farms
 - i) Poultry farms must have a minimum lot size of 8 hectares.
 - ii) Buildings must cover no more than 10% of the site.

b) Piggeries

- i) A minimum area of 2 hectares is required for piggeries.
- ii) On a block of 2 to 6 hectares, there shall be no more than one breeding sow and its progeny to each half hectare. At no time is the total number of pigs to exceed ten times the approved number of breeding sows (e.g. on a 5 hectare block, there may be no more than 10 breeding sows and no more than 100 pigs in total).
- iii) The above maximums can only be achieved where an adequate effluent disposal system is in place. This system must be designed by an approved trade waste consultant.

3) Setbacks

a) Poultry Farms

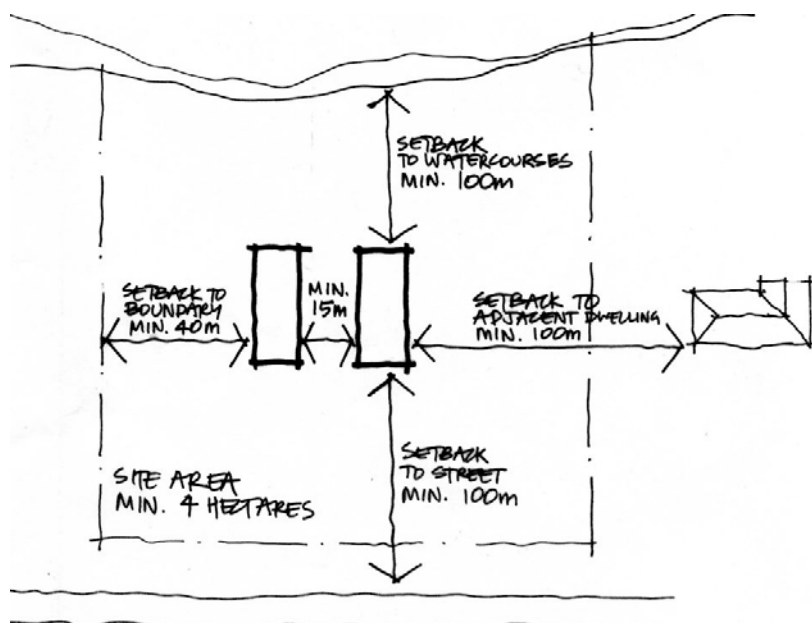
- i) Setbacks for poultry buildings are to be provided in accordance with Table D1.1 and Figure D1.17 below.
- ii) The setbacks are required to incorporate vegetated/ landscaped buffers on the property to screen sheds and activities, and to help reduce noise and odours.

Table D1.1

Minimum distance from poultry buildings to:	Distance
Public Roads	100m
Boundaries and Dry Gullies	40m
Watercourses and Wells	100m
Adjoining Dwellings	100m
Other Poultry Farms	500m
Zones where Lots < 4ha	300m
Dwelling(s) on the Same Farm	No minimum

Separation - poultry buildings on same farm	Distance
Parallel Broiler - Pullet Breeding	15m
Parallel High Rise Layer	30m
Laying and Rearing	100m
Laying Sheds and Egg-Holding Room	40m

Figure D1.17: Setback requirements for poultry farms



b) Piggeries

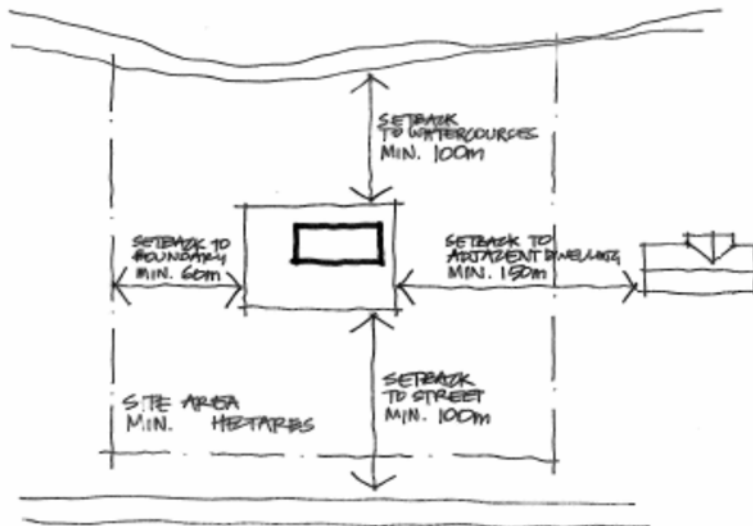
- i) A piggery on a site of 2 to 6 hectares should locate all piggery facilities at least 20m from boundaries and 40m from a road or public place.
- ii) A piggery on a site of more than 6 hectares should locate all piggery facilities at least 40m from boundaries and 80m from a road or public place.
- iii) All piggeries (including the disposal areas) shall be a minimum distance of 100m from any watercourse. The distance may be increased by Council according to the slope of the land and the permanency of the watercourse.

Figure D1.18: Setback requirements for piggeries

c) Feedlots

- i) The site should be large enough to achieve a minimum separation of 150m between feedlot yards/farm buildings and residences on adjoining properties.
- ii) All feedlot facilities must be setback a minimum of 60m from property boundaries.
- iii) All feedlot facilities must be setback a minimum of 100m from a public road.
- iv) All feedlot facilities must be setback a minimum of 100m from any watercourse.

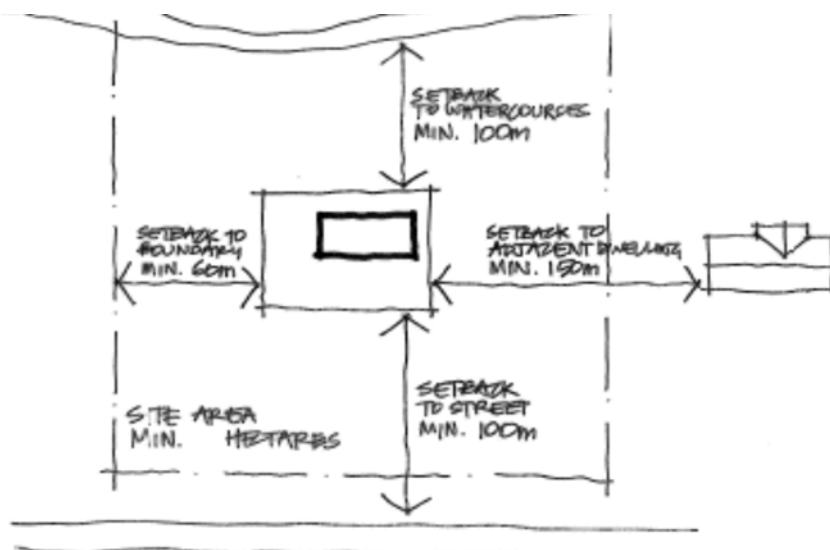
Figure D1.19: Setback requirements for feedlots



d) Restricted Dairies

- i) The site should be large enough to achieve a minimum separation of 150m between dairy yards/sheds and residences on adjoining properties.
- ii) All dairy facilities should be setback a minimum of 60m from boundaries.
- iii) All dairy facilities should be setback a minimum of 100m from a public road.
- iv) All dairy facilities must be setback a minimum of 100m from any watercourse.

Figure D1.20: Setback requirements for restricted dairies



4) Odour Control (for poultry farms, piggeries, feedlots and dairies)

- a) Required buffers/setbacks must include landscaping, including a dense area of vegetation, a minimum of 25m wide.
- b) Ventilators on poultry sheds should be directed up rather than down.

5) Noise Control (for poultry farms, piggeries, feedlots and dairies)

- a) All development should comply with the relevant State Government authority or agency standards and guidelines for noise.
- b) Council may require a Noise Impact Statement to be submitted, depending on the scale and location of sheds to residential areas. Information on the requirements of a Noise Impact Statement are provided in the 'Noise and Vibration' section of this Plan.
- c) A noise management plan (including feed delivery) must be prepared which outlines measures proposed to minimise noise to surrounding areas. For poultry farms, this should consider daylight catches or a reduction in the number of pickups required.

6) Design and Construction

a) Feedlots

- i) Any application must address the requirements of the New South Wales Feedlot Manual (see www.dpi.nsw.gov.au).
- ii) Any application must address the requirements of the National Guidelines for Beef Cattle Feedlots in Australia (1997) (see www.dpi.nsw.gov.au) in determining an appropriate drainage system, controlled drainage area and capture and storage of runoff (effluent), and for using effluent and manure on-site.
- iii) Applications should be prepared in consultation with Council officers. Information relating to the issues above should be submitted with the application, together with a plan of management which indicates factors such as, but not limited to:
 - Animal concentration per hectare;
 - Paddock rotation intervals;

- Revegetation strategies for soil degraded paddocks;
- Location of stock in relation to adjoining premises;
- Odour control; and
- Location of feeding points.

1.4.4. Animal Boarding or Training Establishments

A. Background

Animal boarding or training establishments include dog kennels, catteries, horse breeding facilities, horse training facilities (such as trotting tracks) and large-scale aviaries. Fish are dealt with under aquaculture.

The issues associated with animal boarding or training establishments include:

- Concentrated noise from animals;
- Management of dust and odours, including from animal exercise areas;
- Management of solid and liquid wastes;
- Availability of suitable water supplies for stock watering and cleaning;
- Impacts on rural landscape character; and
- Impacts on the local road system.

B. Objectives

- To allow the development of these establishments while minimising the impact on adjoining land uses and the local road system;
- To encourage establishments which are designed to promote efficient internal circulation, drainage and aesthetic appeal; and
- To ensure that properties are large enough to support the required facilities and allow for sufficient setback from boundaries, adjacent land uses and public areas to minimise impacts.

C. Controls

1) General Requirements

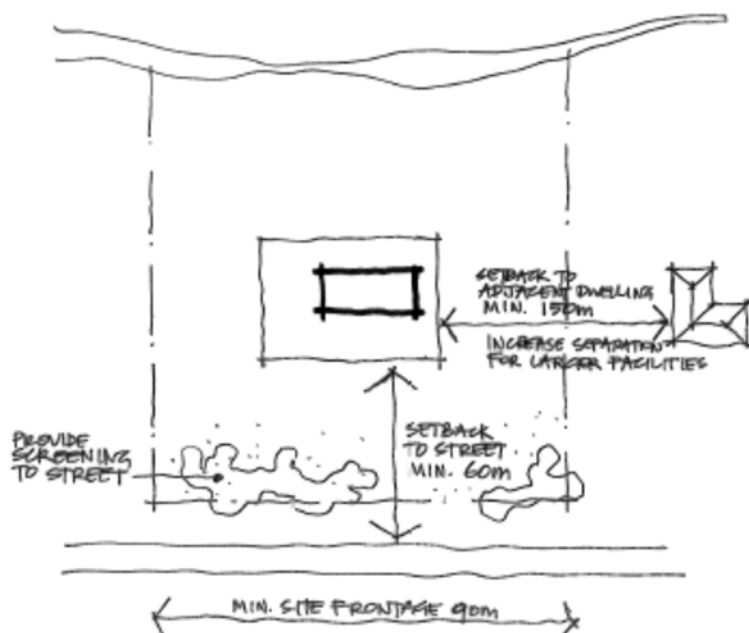
- Sites should be selected with consideration for the location of clients, feed supplies and adjoining land uses.
- The specific controls for dog boarding, training or breeding establishments are set out below. Other forms of animal boarding or training establishments will be considered based on a merit review.

2) Setbacks for Dog Boarding, Training or Breeding Establishments

- Dog boarding, training or breeding establishments will not be approved on allotments which have a frontage of less than 90m.
- Kennels shall be located a minimum of 150m from any existing dwelling or potential dwelling site.
- Kennels, which are located 150m from existing or future dwellings, shall accommodate not more than 10 dogs.

- d) A proportional increase in the number of dogs will be permitted as the distance from existing or future dwellings is increased, to a maximum of 40 dogs for 300m.
- e) Kennels should be setback a minimum of 60m from any public road.

Figure D1.21: Setback requirements for dog boarding, training or breeding establishments



3) Design for Dog Boarding, Training or Breeding Establishments

- a) All kennels are to be screened to ensure that dogs cannot see the street.
- b) Concrete floors are to be provided to all kennels and runs to facilitate cleaning.
- c) Sound-proofed holding sheds are to be provided for distressed animals.
- d) Applications for consent to establish kennels shall be accompanied by an acoustic study which demonstrates that the proposal can operate with acceptable impact on adjoining and nearby properties.
- e) Structures and enclosures should be designed to minimise visual impact on the streetscape and views enjoyed by adjoining properties. Large areas of light coloured or reflective materials will not be permitted.
- f) Development applications should include details of proposed advertising and sign posting.

4) Operations for Dog Boarding, Training or Breeding Establishments

- a) Dogs are to be confined to their individual runs or exercise areas at all times.
- b) Council may consent to the sale of animals, which are bred or raised on the property, where the sale remains ancillary to the boarding, breeding, training or treating.

1.4.5. Aquaculture

A. Background

The key issues for aquaculture include:

- Impacts from clearing or site selection on native flora and/or fauna;
- High water consumption;
- Management of waste; and
- Potential for release of non-native species into natural waterways.

B. Objectives

- a) To encourage sustainable aquaculture;
- b) To set out the minimum site location and operational requirements for permissible aquaculture development; i.e. the minimum performance criteria:
 - i) To protect natural waterbodies or wetlands;
 - ii) To protect existing native terrestrial or aquatic vegetation and the habitat of native fauna;
 - iii) To minimise noise impacts on adjacent land uses;
 - iv) To minimise the potential for escape of non-native aquaculture species to natural waterbodies;
 - v) To provide waste management practices which ensure that the disposal of waste, particularly organic waste, does not impact on surrounding water and land systems or on adjoining land owners; and
 - vi) To minimise water consumption requirements and recycle water, where possible.

C. Controls

1) Setbacks

- a) All ponds, dams, tanks and internal drains should be setback at least 50m from a natural waterbody or wetland. (Note: For barramundi and other high security species, the minimum distance must be 500m).
- b) A vegetated riparian corridor of not less than 40m should be maintained between any ponds, dams, tanks and internal drains, and the high bank of any adjoining watercourse. This riparian corridor should be maintained to protect any existing native plant species. Proposals should include a Vegetation Management Plan to indicate how the riparian corridor will be protected and enhanced.
- c) The site layout for the ponds, dams, tanks, water intake, outlet and circulation system and operational facilities should be designed to minimise the destruction or disturbance of native terrestrial and aquatic vegetation or the habitat of native fauna.
- d) It is preferable for freshwater aquaculture ponds to be constructed above the probable maximum flood (PMF) level.

2) Impacts on Neighbouring Land Uses

- a) Design and layout should incorporate all possible measures to minimise operational impacts on the neighbours and the broader community. Reference should be made to the NSW Industrial Noise Policy (<http://www.environment.nsw.gov.au>).

- b) Where possible noisy activities (e.g. truck loading areas or plant/equipment) should be located remote from neighbouring houses or in a location where there is an existing barrier between the noisy activity and the receiver. Where there is the potential for noise to become a nuisance, options to reduce noise impacts should be considered including:
- i) Quieter, insulated plant/equipment;
 - ii) Enclosing the noisy activities in a building; or
 - iii) Building a noise barrier.

3) Waste Management

- a) The aquaculture farm should be designed to minimise waste and reuse and recycle materials. This includes:
- i) Pond and tank water;
 - ii) Processing water;
 - iii) Pond/tank sludge and filter materials;
 - iv) Processing wastes and dead fish; and
 - v) Packaging material.
- b) Any proposal which includes the on-site disposal of waste, in particular organic waste, must consider the potential to impact on any nearby residences or contaminate surface or ground water.

4) Water Management and Pond/Tank Design

- a) Ponds/tanks should be orientated to allow for efficient circulation of water through water supply access facilities, storage dams/tanks, growing ponds/tanks, reconditioning ponds/tanks and drainage lines.
- b) Water circulation systems should be designed so that pond/tank discharge water can be retained in reconditioning ponds/tanks (for an appropriate time to reduce suspended solids and to allow for appropriate treatment, if necessary) and have the capacity to recirculate the water on the farm or release/reuse the water in an appropriate manner.
- c) For freshwater aquaculture farms, the water circulation system should include appropriate reconditioning ponds/tanks before recirculation or reuse so there is no discharge of water from the fish farm to the natural waterway. Reuse options may include agriculture or other purposes on the farm or by arrangement with other water users as a substitute for raw water.
- d) The use of water in freshwater aquaculture enterprises is conditioned on “no discharge” into public or Crown roads, Crown land, neighbouring land, rivers, creeks or natural wetlands, groundwater aquifers or native vegetation.

1.4.6 Horticulture

A. Background

The key issues for horticulture include:

- Visual impacts of buildings and structures to protect horticultural crops (including glasshouses and hail netting);
- Impacts on native vegetation and habitat;
- High water consumption;

- Impacts from irrigation including salinity and raised water tables;
- Soil management issues such as erosion and degradation;
- Use and runoff of chemical pesticides, fertilisers and herbicides;
- Transport and access for crop distribution;
- Noise impacts from hail, frost and bird prevention equipment; and
- Sale of produce on-site.

B. Objectives

- To support the establishment of horticulture where the potential impact on adjoining land uses can be contained;
- To promote sustainable horticulture which minimises impacts on adjacent watercourses and native vegetation, and which protects soil quality;
- To ensure that properties are large enough to support the required activities and allow for sufficient setbacks from boundaries, adjacent land uses and public areas to minimise impacts;
- To minimise the visual impact of structures associated with horticulture on the scenic quality of rural areas;
- To provide controls for the prevention of excessive air, noise, water and visual pollution; and
- To ensure that satisfactory arrangements are made for the management and disposal of wastes.

C. Controls

1) Water Management

- Council shall not consent to any new or substantially expanded horticultural activity unless it is satisfied that the supply of water to the property is adequate. This may include pre lodgement consultation with Sydney Water.
- Where mains water supply is not available to the site, the applicant will be required to demonstrate to Council that any alternative water supply is of adequate quantity and quality for the intended purpose.
- Council's consent is required to construct or form a dam, pond or water retention basin. Specific advice on the construction of dams can be obtained from NSW Department of Primary Industries. See also controls in the 'Water Management' section of this Plan relating to water retention basins/dams.

2) Sustainable Soil Management

- An application for any new (or substantially expanded) horticultural activity needs to demonstrate that any increased cultivation will not lead to more erosion or sedimentation than the existing use of the subject land.

3) Waste Management

- An application for any new (or substantially expanded) horticultural activity should specify the method by which wastes, including the disposal of plant matter, rubbish and unused natural fertilisers, will be managed.

4) Control of Pests and Vermin

- a) An application for any new (or substantially expanded) horticultural activity shall include information on how the requirements of the *Noxious Weeds Act 1993* will be met.

5) Pesticides

- a) An application for any new (or substantially expanded) horticultural activity shall include a schedule of all pesticides and other toxic chemicals likely to be stored and used on the site. The schedule should stipulate the purpose/s for which such chemicals are to be used, the manner of application and the extent of knowledge or experience that the person has had in using such chemicals.

6) Dust Control

- a) All areas of vehicular access are to be stabilised and treated in a manner to minimise dust nuisance caused by traffic generation.
- b) To eliminate dust as a nuisance, grass cover should be maintained and grown, wherever practical.

7) Drainage

- a) An application for any new (or substantially expanded) horticultural activity should be accompanied by details of the proposed method of draining the site.
- b) Drainage should be designed to incorporate treatment of wastewater to the standards of the NSW Office of Environment and Heritage.

8) Soil Erosion

- a) An Erosion and Sediment Control Plan (see section on 'Land Management') will be required in conjunction with an application for any new (or substantially expanded) horticultural activity. This plan should be prepared in consultation with the NSW Department of Primary Industries and comply with all relevant sections of this DCP.

9) Landscaping and Visual Impact

- a) All structures associated with the horticultural use of the land shall be compatible in form and colour with the rural character.
- b) Where large reflective surfaces are necessary for greenhouses and polyhouses, the structure should be located to have minimal visual impact when viewed from any road or public place.
- c) Any development should consider the impact on the rural and landscape character of the area and seek to minimise this visual impact by appropriate siting of buildings, landscaping and screen plantings, especially from public places and roads.
- d) Plant species should include those which will grow to over 7m in height with a large canopy as well as smaller intermediate shrubs. Species that occur locally should be included in the landscaping plan. A list of appropriate species can be obtained from Council's Development Services Department.
- e) The visual impact of hail netting must be addressed in relevant development applications.
- f) All structures associated with the horticultural use of the land shall be compatible in form and colour. Where large reflective surfaces are necessary for greenhouses and polyhouses, the structure should be located to have minimal visual impact when viewed any road or public place. Where a site is visually prominent, extensive landscaping will be required.

- g) Where appropriate, rain water tanks must be installed to capture the rainwater off the roofs of greenhouses/ polyhouses. This water shall be reused for irrigation of the plants growing in the greenhouse. When determining the capacity of the rainwater tank to be provided, proximity to natural watercourses and potential impact on environmental flows in local streams will be considered.

10) Access, Traffic and Parking

- a) The frequency and intensity of traffic associated with any horticultural activity should be addressed in terms of the capacity of the road system and the requirements in the 'Transport, Access and Parking' section of this DCP.
- b) Access to the site must be provided from a major or secondary arterial road which is constructed to a standard to take articulated vehicles. Access should only be provided from a local road where it is not practicable to provide access from a main or secondary arterial road.
- c) The design of the development should incorporate parking and access areas related to the use and vehicles likely to be associated with the development.
- d) Client/employee parking areas and vehicular crossings are to be provided.

11) Minimising Impacts of Chemicals

- a) Use of chemicals (including pesticides and herbicides) should be in accordance with:
 - i) Agricultural and Veterinary Chemicals Act 1994; and
 - ii) Agricultural and Veterinary Chemicals (NSW) Regulation 2000.
- b) Any application needs to provide strategies to minimise use, chemical drift and off site movement via runoff water or sediment.

E. Lifting the Bar

The following represent some ways in which applicants can demonstrate additional commitment to the principles expressed in this DCP. Demonstration of this commitment may lead to Council considering variation of development controls. Applications that vary the development controls listed in the 'Agricultural Development' section of this Plan will need to demonstrate that the proposed development complies with the objectives relevant to the development controls it seeks to vary.

- a) Use of native grasses in grazing;
- b) Innovative treatment of water from greenhouses / polyhouses, considering reuse, environmental flows and downstream impacts;
- c) Innovative approaches to minimising the use of chemicals, particularly if this can lead to organic certification; and
- d) Use of best practice and innovative techniques to reduce the impacts of intensive livestock agriculture.

1.5 Non-Agricultural Development

A. Background

Non-agricultural land uses can be important to the economic and social sustainability of the City of Penrith. They can, however, sometimes result in a number of land use conflicts due to their distinction from agricultural activities and their potential impact on an area's rural and landscape character.

Examples of non-agricultural development in Penrith include:

- Home businesses and home industries;
- Tourist and visitor accommodation (including bed and breakfast accommodation);
- Rural industries (including agricultural produce industries and stock and sale yards); and
- Retail premises (including roadside stalls and cellar door premises).

Note: Although permissible in some rural areas, controls for vehicle repair stations, educational establishments, places of public worship, cemeteries, crematoriums and funeral homes can be found in the chapter on 'Other Land Uses' of this DCP.

B. General Objectives

- a) To ensure that the bulk and scale of structures do not adversely affect the visual amenity and scenic quality of an area;
- b) To discourage the siting of developments in the rural zones which in Council's opinion would be more appropriately located in industrial, business or special uses zones;
- c) To protect the viability of agricultural land uses in rural and environmental zones;
- d) To ensure that traffic generated by any development does not adversely affect the safety and efficiency of the road network, access or rural amenity; and
- e) To prevent the establishment of uses which have the potential to impact upon the rural and residential environment, particularly with regard to noise and traffic generation.

1.5.1 Rural Amenity and Design

A. Background

This section aims to provide a number of general principles for non-agricultural development in the rural areas. In particular, it seeks to protect the rural character and amenity, and avoid unnecessary conflicts between inconsistent land uses.

B. Objectives

- a) To protect the heritage and environmental values of the area;
- b) To protect rural amenity against unreasonable noise, dust, odour, etc.; and
- c) To avoid unreasonable increases in demand on existing services and infrastructure.

C. Controls

1) Rural Amenity

- a) Non-agricultural developments must demonstrate the following:
 - i) There will not be significant visual impacts from either the main activity or associated activities on the rural area or adjacent properties; and
 - ii) The development will achieve the noise control standards established by the NSW Office of Environment and Heritage or relevant authority.

2) Design

- a) Structures associated with any use shall be designed with regard to the rural character of the area and the form and scale of buildings on rural land surrounding the site.
- b) Bulky buildings of industrial character are not favoured.

- c) Structures on sites adjoining the villages should relate to the character of the village.
- d) Buildings used for non-agricultural purposes also need to comply with the controls in Section 1.3 'Farm Buildings', unless specifically stated.

1.5.2 Home Businesses and Home Industries

A. Background

Home businesses include, for example, small home office-based businesses (such as private consultants) that employ limited assistance. This use aims to support 'start-up' businesses and small scale employment opportunities close to home. Home industries include, for example, small-scale businesses for the repair of electronic goods or furniture restoration.

B. Objectives

- a) To allow home businesses and home industries which promote employment opportunities and the economic use of rural land for the benefit of the owner or occupier; and
- b) To discourage uses which have the potential to adversely affect the amenity of a locality.

C. Controls

1) Design and Operation

- a) Structures for the accommodation of the use should relate to the dwelling and other structures on the property and must comply with the design controls for dwellings in this DCP.
- b) Buildings detached from the primary dwelling should be clustered in close proximity to the primary dwelling.
- c) Measures to mitigate impacts, particularly noise, are to be outlined in the development application. It should be noted that uses which have an adverse impact on surrounding properties would not comply with the definition of home business or home industry in Penrith LEP 2010, and therefore would not be permissible.

2) Services

- a) Uses which require amplification of services above domestic capacity will generally not be permitted.

3) Advertising and Signage

- a) Home businesses and industries should only provide building and business identification signs that are in keeping with the rural character and the low scale nature of the operation. In many cases, this signage can be undertaken as exempt development. Applicants should refer to State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 for further details.

4) Traffic and Parking

- a) Developments which generate significant amounts of traffic will not be permitted. Parking must be provided on-site for visitors.

1.5.3 Tourist and Visitor Accommodation

A. Background

Tourist and visitor accommodation includes a range of accommodation forms, some of which are encouraged in rural areas, while others are not.

This section provides controls for smaller styles of tourist and visitor accommodation generally up to 20-30 guests. If the proposal is for more than 30 guests on-site, this is likely to require access to public transport and centralised water and sewerage systems, and would be more appropriate in a different zone. Rural areas are most appropriate for bed and breakfast accommodation and other forms of small scale tourist and visitor accommodation.

B. Objectives

- a) To allow a variety of small scale tourist and visitor accommodation at suitable locations;
- b) To ensure that satisfactory arrangements are made for the accommodation of vehicles and traffic associated with the use; and
- c) To ensure that structures associated with the use are compatible with the rural character and environmental capability of the area.

C. Controls

1) Design and Landscaping

- a) Structures and landscaping associated with the development should be designed to harmonise with the rural character.
- b) The controls listed in this Chapter relating to rural dwelling design and/or farm buildings are applicable to the design of all tourist and visitor accommodation.
- c) External finishes should be selected with a view to minimising the visual prominence of the development.

2) Waste Management

- a) The anticipated method of operation should be described with any application to determine the appropriate method of waste disposal/management.

1.5.4 Rural Industries

A. Background

Rural industries, in general, are not permissible in rural and environmental zones. However, agricultural produce industries and stock and sale yards are permissible with consent in some rural zones.

B. Objectives

- a) To ensure odour and noise do not impact significantly on the amenity of neighbouring properties and uses;
- b) To ensure adequate management of water on-site to promote sustainable water use and avoid contamination of water or land systems;
- c) To ensure appropriate management of wastes; and
- d) To provide adequate access and parking.

C. Controls

- 1) All buildings associated with rural industries must comply with the requirements of Section 1.3 for farm buildings, with the exception of floor space.
- 2) Reflective materials should not be used. Colours of any buildings associated with rural industries should be consistent with the colours of other structures on the land, or designed to minimise visual impact.
- 3) Rural industries shall not operate prior to 6.00am or after 5.00pm on weekdays, or prior to 6.00am and after 2.00pm on Saturdays. No noise shall be generated on Sundays.
- 4) Sheds, packing areas or holding yards associated with a rural industry must be separated from dwellings on adjacent properties. Separation must be sufficient to minimise impact, particularly due to noise and odour. Distances may vary depending on the nature of the industry and the potential for impact. Development applications must contain information on how separation will be achieved and how it will mitigate likely impacts from the industry.
- 5) Adequate access and parking arrangements must be made for trucks and employees. All vehicles are to be able to enter and leave the site in a forward direction.
- 6) Appropriate arrangements must be made for waste disposal. The applicant must provide details of the rates of waste likely to be generated and the proposed method of disposal.
- 7) Rainwater tanks shall be installed to collect water from all buildings associated with a rural industry. Where appropriate, this water shall be reused as part of the industry processes, or for truck washing or dust suppression.
- 8) All runoff from the site shall be managed so as to not cause a nuisance to adjoining downstream properties or pollution to waterways. This may require holding runoff in ponds to allow for treatment of nutrients or sediments.
- 9) The size of sheds and hardstand areas shall be appropriate for the use and the character of the area. Generally, no more than 30% of the site shall be covered by sheds or hardstand areas.
- 10) Where trucks are likely to visit the site on a daily basis and will travel on unsealed areas of the site, a washdown area shall be provided at the exit to the site. Where possible, water for this washdown area shall be sourced from rainwater tanks and recycled.

1.5.5 Retail Premises

A. Background

Retail premises that are permissible with consent in the rural areas include:

- Roadside stalls and cellar door premises in some rural zones;
- Neighbourhood shops in the RU5 Village zone; and
- Retail premises, including food and drink premises, in the commercial centres of the RU5 Village zone (see Schedule 1 Additional permitted uses of the LEP).

B. Objectives

- a) To ensure that traffic generation does not adversely affect the safety and efficiency of the local road system;
- b) To ensure the development provides adequate access and parking;

- c) To encourage the establishment of structures which are consistent with the rural character of the locality of the site;
- d) To allow roadside stalls and cellar door premises for the purpose of selling hand crafted goods and agricultural produce produced on the property;
- e) To ensure that roadside stalls and cellar door premises are located where the safety and efficiency of the road system is not impaired; and
- f) To ensure that buildings, structures and advertising associated with the uses do not impact on the rural or landscape character or scenic qualities of the area.

C. Controls

1) Location and Safety

- a) Roadside stalls and cellar door premises will only be permitted where the safety and efficiency of the road system is not impaired.
- b) In the interest of traffic safety, sites with poor visibility for vehicles will be discouraged.
- c) Parking and structures associated with the use are to be fully contained on the applicant's property.
- d) Buildings and structures should be setback a minimum of 20m from the front property boundary at the road frontage.

2) Size and Design

- a) Roadside stalls are limited to a maximum of 20m² in floor space including storage areas.
- b) The stall shall be constructed of a material approved by Council. Light coloured and reflective materials will not be permitted.
- c) Cellar door premises are to be incorporated into farm buildings and must be in accordance with the controls in Section 1.3 for farm buildings in this Plan.

3) Access and Parking

- a) The size of the retail component will determine the amount of parking to be provided on site.
- b) Access areas are to be stabilised or sealed depending on local drainage conditions.
- c) Parking shall be provided on site in a manner which discourages on street parking.
- d) The parking for cellar door premises should be located in close proximity to the sales area within the property and not on the road verge.

4) Business Identification Signs

- a) A maximum of two business identification signs may be placed on the property for the duration of the sale season of the product.
- b) Business identification signs should not be placed on the road reservation or on nearby properties.
- c) The size of the sign will be examined on merit and details should be included with the development application.
- d) Signage should not impact on the rural character, landscape character or scenic qualities of the area.

1.5.6 Truck Parking Areas

A. Background

The use of rural properties (particularly large lot residential and rural living areas) for the purpose of parking a number of trucks or plant equipment is becoming increasingly common, and has significant impact on the amenity of the surrounding area. This equipment is often large and noisy and is sometimes operated at night in close proximity to other dwellings and sensitive adjacent land uses.

Truck parking areas may only be undertaken in rural zones as exempt development. Schedule 2 Exempt development of LEP 2010 includes criteria for truck parking areas. These criteria are designed to ensure that parking for trucks and associated plant has a minimal impact on surrounding properties.

B. Objectives

- a) To allow limited parking of trucks and associated plant owned and operated by the owner or occupier of a property; and
- b) To limit interference on the amenity of the neighbourhood through limited vehicle movements and associated impacts such as noise and light.

C. Controls

- 1) Truck parking areas may only be undertaken in RU1, RU2, RU4, E3 and E4 zones as exempt development. Schedule 2 Exempt development of LEP 2010 contains the criteria for truck parking areas.
- 2) Truck parking areas that do not satisfy the criteria in Schedule 2 are prohibited.

Table of Contents

D2 Residential Development	3
2.1. SINGLE DWELLINGS	3
2.1.1 RESIDENTIAL CHARACTER	3
2.1.2 SETBACKS AND BUILDING ENVELOPE	4
2.1.3 DEVELOPMENT ON SLOPING LAND	6
2.1.4 LANDSCAPED AREA	7
2.1.5 BUILDING DESIGN/SITE WORKS	8
2.1.6 SOLAR PLANNING	9
2.1.7 GARDEN DESIGN AND FENCES	10
2.1.8 SIGNIFICANT LANDSCAPES	11
2.1.9 SIGNIFICANT TOWNSCAPES	12
2.2 DUAL OCCUPANCIES	14
2.2.1 RESIDENTIAL CHARACTER	14
2.2.2 PREFERRED CONFIGURATION FOR DUAL OCCUPANCY DEVELOPMENT	15
2.2.3 ALTERNATIVE CONFIGURATION FOR DUAL OCCUPANCY DEVELOPMENT.	16
2.2.4 URBAN FORM	18
2.2.5 FRONT AND REAR SETBACKS	19
2.2.6 BUILDING ENVELOPE AND SIDE SETBACKS	20
2.2.7 DRIVEWAYS AND PARKING AREAS	22
2.2.8 LANDSCAPED AREA	22
2.2.9 SOLAR PLANNING	23
2.2.10 SIGNIFICANT LANDSCAPES & TOWNSCAPES	24
2.2.11 CORNER SITES AND PARK FRONTAGES	25
2.2.12 BUILDING DESIGN	25
2.2.13 ENERGY EFFICIENCY	26
2.2.14 DESIGN OF DWELLINGS AND PRIVATE COURTYARDS	27
2.2.15 GARAGE DESIGN	28
2.2.16 GARDEN DESIGN	29
2.2.17 PAVING DESIGN	30
2.2.18 FENCES AND RETAINING WALLS	32
2.2.19 VISUAL AND ACOUSTIC PRIVACY AND OUTLOOK	33
2.2.20 SAFETY AND SECURITY	35
2.2.21 ACCESSIBILITY AND ADAPTABILITY	35
2.2.22 STORAGE AND SERVICES	36
2.3. SECONDARY DWELLINGS	37
2.3.1 GENERAL	37
2.3.2 SITE COVERAGE	38
2.3.3 SITING AND DESIGN	39
2.3.4 PRIVATE OPEN SPACE	40
2.3.5 DESIGN AND MATERIALS	40
2.3.6 FACILITIES	40
2.4 MULTI DWELLING HOUSING	41
2.4.1 RESIDENTIAL CHARACTER	41

2.4.2 PREFERRED CONFIGURATION FOR NEW DWELLINGS	42
2.4.3 DEVELOPMENT SITE	43
2.4.4 URBAN FORM	44
2.4.5 FRONT AND REAR SETBACKS	45
2.4.6 BUILDING ENVELOPE AND SIDE SETBACKS	46
2.4.7 DRIVEWAYS AND PARKING AREAS	47
2.4.8 LANDSCAPED AREA	49
2.4.9 SOLAR PLANNING	50
2.4.10 SIGNIFICANT TOWNSCAPES AND LANDSCAPES	50
2.4.11 CORNER SITES AND PARK FRONTAGES	52
2.4.12 BUILDING DESIGN	53
2.4.13 ENERGY EFFICIENCY	53
2.4.14 DESIGN OF DWELLINGS AND PRIVATE COURTYARDS	54
2.4.15 GARAGE DESIGN	55
2.4.16 GARDEN DESIGN	56
2.4.17 PAVING DESIGN	57
2.4.18 FENCES AND RETAINING WALLS	58
2.4.19 VISUAL AND ACOUSTIC PRIVACY AND OUTLOOK	59
2.4.20 SAFETY AND SECURITY	60
2.4.21 ACCESSIBILITY AND ADAPTABILITY	60
2.4.22 STORAGE AND SERVICES	61
2.5 RESIDENTIAL FLAT BUILDINGS	63
2.5.1 RESIDENTIAL CHARACTER	63
2.5.2 PREFERRED CONFIGURATION FOR RESIDENTIAL FLAT BUILDINGS	64
2.5.3 THE DEVELOPMENT SITE	65
2.5.4. URBAN FORM	65
2.5.5 LANDSCAPED AREA	66
2.5.6 FRONT AND REAR SETBACKS	67
2.5.7 SIDE SETBACKS	67
2.5.8 VISUAL AND ACOUSTIC PRIVACY AND OUTLOOK	68
2.5.9 SOLAR PLANNING	68
2.5.10 SIGNIFICANT TOWNSCAPES & LANDSCAPES	69
2.5.11 CORNER SITES AND PARK FRONTAGES	70
2.5.12 BUILDING DESIGN	71
2.5.13 ENERGY EFFICIENCY	72
2.5.14 DESIGN OF DWELLINGS AND PRIVATE COURTYARDS	72
2.5.15 GARAGES	73
2.5.16 GARDEN DESIGN	74
2.5.17 PAVING DESIGN	75
2.5.18 FENCES AND RETAINING WALLS	75
2.5.19 SAFETY AND SECURITY	76
2.5.20 ACCESSIBILITY AND ADAPTABILITY	77
2.5.21 STORAGE AND SERVICES	78
2.6 NON RESIDENTIAL DEVELOPMENTS	79
2.7 PROPOSED ROAD PATTERN DESIGNS	80

D2 Residential Development

2.1. Single Dwellings

The following developments are covered by this section:

- a) single dwelling development; and
- b) alterations and additions to existing single dwelling development.

This section provides specific controls for single dwellings in addition to the general controls elsewhere in this DCP.

2.1.1 Residential Character



The residential character of any neighbourhood is determined by:

- 1) Location and density of development:
 - a) proximity to busy centres or major roads
 - b) residential density and mix of housing types
 - c) proximity to heritage precincts
 - d) frontage to public parks.



- 2) The local landscape and its configuration:
 - a) flat or sloping;
 - b) well-vegetated or cleared;
 - c) frontages to streams or the Nepean River.



3. Predominant patterns of planning and design
 - a) displayed by local buildings and their gardens;
 - b) setbacks and building separation;
 - c) height, scale and bulk;
 - d) garaging;
 - e) articulated forms and varied plantings.

A. Objectives

The objectives of this Section are:

- a) To establish overall guidelines for environmentally appropriate development
- b) To adopt the form and character of established neighbourhoods to guide environmentally appropriate design and development; and to stimulate a vibrant streetscape that preserves traces of Penrith's past.
- c) To ensure that new development does not detract significantly from the quality and amenity of existing dwellings and private gardens.

2.1.2 Setbacks and Building Envelope

A. Objectives

Building setbacks and envelopes are established to:

- a) reflect the character of established garden suburbs,
- b) provide for establishment of vegetation and reasonable separation between buildings
- c) To provide a high level of visual and acoustic privacy for residents and neighbours in dwellings and private open space.
- d) To ensure that building design minimises overlooking problems
- e) achieve site-responsive development
- f) protect the amenity of occupants by controlling:
 - i) visual impacts relating to height and bulk of buildings;
 - ii) the impact of loss of privacy, overshadowing and loss of views.

B. Controls

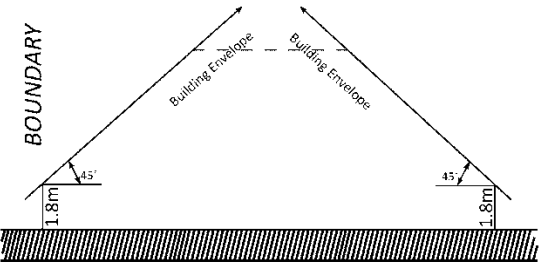
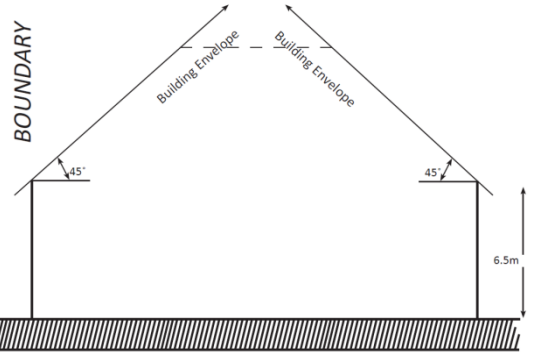
1. Minimum front and side setbacks:

- a) Front setback is the greater of either
 - i) 5.5m, or
 - ii) The average of the setbacks of the adjoining properties
- b) Front setbacks for corner sites are;
 - i) Primary street frontage (measured on the shortest boundary, as in a) above
 - ii) Secondary street frontage is 3m to external walls and 5.5m to garage entrances. verandahs and pergolas are permitted to encroach 1.5 m beyond the adopted setback
- c) Encroachments to front setbacks
 - i) Verandahs and pergolas are permitted to encroach 1.5m beyond the setback to the primary street frontage
 - ii) Garages, carports and parking spaces, other than stacked parking or driveways, are not permissible within the front setback
- d) Side setbacks to external walls should be a minimum of 900mm.
- e) Rear setbacks
 - i) The minimum rear setback for a single storey building (or any single storey component of a building) is 4m
 - ii) The minimum rear setback for a two storey building (or any two storey component of a building) is 6m
 - iii) Minor, partial or point encroachments into the above rear setbacks may be considered on irregular shaped lots
 - iv) Rear setback areas are to be used predominantly for the provision of a landscaped area
- f) Exceptions to rear setbacks - consideration may be given to the erection of a non-habitable building or structure that does not comply with the minimum setback requirements if it can be demonstrated it will have minimal adverse impact on the subject property or any adjoining property.

2. Building Envelope

- a) Development is to be contained within the building envelope for the site. As shown in Figure D2.1 below, the building envelope means a height plane over the site at 45° from a specified height above natural ground level at the side boundaries of the site.

Figure D2.1: The building envelope is measured from natural ground level perpendicular to the side boundary at any given point along the wall.

Zone	Maximum building envelope
R2 Low Density Residential	 <p>The diagram illustrates the maximum building envelope for R2 Low Density Residential. It shows a cross-section of a building with a gabled roof. The side boundary is labeled 'BOUNDARY'. The building envelope is defined by a 45-degree slope from the natural ground level. The height of the building envelope is limited to 1.8m from the natural ground level. The roof slope is labeled 'Building Envelope' and the angle is 45°.</p>
R3 Medium Density Residential	 <p>The diagram illustrates the maximum building envelope for R3 Medium Density Residential. It shows a cross-section of a building with a gabled roof. The side boundary is labeled 'BOUNDARY'. The building envelope is defined by a 45-degree slope from the natural ground level. The height of the building envelope is limited to 6.5m from the natural ground level. The roof slope is labeled 'Building Envelope' and the angle is 45°.</p>

- b) Encroachments – consideration may be given to minor encroachments to the building envelope for:
- i) Eaves and gutters
 - ii) Chimneys and antennas
 - iii) Pergolas, or
 - iv) Where it is demonstrated the encroachment is necessary to improve the design, external appearance or utility of the building and the variation will not impact adversely on the amenity of an adjoining property.

2.1.3 Development on Sloping Land

A. Objectives

- a. To ensure that development responds to topographical constraints.
- b. To minimise the bulk and scale of dwellings on steep slopes.
- c. To minimise the amount of cut and fill on sloping land.

B. Controls

- 1. The subdivision layout on cross slopes should incorporate wider/larger lots on steeper

land.

2. Floor levels/building platforms are to be stepped in response to the existing topography of the site.
3. Excavation or filling for the purpose of erecting a dwelling or ancillary development should not exceed 600mm in depth as measured from natural ground level.
4. Ground floor levels are to be a maximum of 800mm above natural ground level.
5. All retaining walls forward of the garage line must be constructed with masonry materials and finished to complement the house design.
6. With the exception of corner lots, where slopes exceed 10%, retaining walls may exceed 1m in height for a side boundary and 1.8m in height for a rear boundary, if comprehensive site benching is undertaken at the time of subdivision to produce a whole of site solution.
7. Lots with a side cross slope exceeding 5%, must respond to the slope of the land with either split level, drop edge beam, or bearer and joist design (or a combination of these).
8. Where front to back slopes are steep (i.e. approximately greater than 9%) house designs must respond to the topography of the land with either split level, dropped edge beam, or timber frame floor (bearer and joist) design - or a combination of these.
9. Garden retaining walls within lots are not to exceed 0.9m in height. Any remaining slope is to be graded out.
10. On lots sloping downhill to the street, dwellings shall be designed and constructed to achieve driveway and access gradients of no greater than 20% slope. This may be achieved by cutting the garage space into the slope within the building footprint. Dwellings should be terraced down the slope with activating features such as decks or balconies facing the street.
11. On lots sloping downhill from the street, dwellings shall be designed and constructed to optimise filling to achieve driveway and access gradients of no greater than 20% slope. This may be achieved by elevating garage and entry features within the building footprint. Dwellings should be terraced down the slope with features such as decks and balconies located towards the rear of the dwelling.
12. On lots sloping downhill from the street, the privacy of adjoining dwellings down slope should be preserved by providing screening vegetation between observable platforms and adjoining private open space areas, or integrating features such as timber screens to decks, or partially opaque windows where privacy is essential and screening vegetation is impractical.

2.1.4 Landscaped Area

A. Objectives

- 1) To retain a reasonable proportion of each site for landscaped garden areas,
- 2) To conserve significant existing vegetation, and
- 3) To provide appropriate separation between neighbouring dwellings and preserve private open space corridors along rear fence lines.

B. Controls

1) The minimum landscaped area of a site is:

Zone	Minimum landscaped area % of the site
R1 Residential General	40
R2 Low Density Residential	50
R3 Medium Density Residential	40
R4 High Density Residential	35

- 2) Calculation of landscaped area does not include areas of the site;
- a) Less than 2m in width
 - b) Hard surface areas such as buildings, driveways and paved areas.
- 3) Calculation of landscaped area may include up to 15m² of any verandah, deck or patio that is attached to a dwelling at ground floor level and is associated with a landscaped area that is designated open space for that dwelling
- 4) A portion of the landscaped area should be connected to or directly adjacent to a living area of the dwelling.

2.1.5 Building Design/Site Works

A. Objectives

- 1) New buildings should show characteristics of established suburban neighbourhoods with;
 - a) dwellings oriented to face the street,
 - b) building forms that are stepped or articulated,
 - c) development that relates to the shape of the surrounding garden areas, and
 - d) development that does not detract significantly from the privacy and amenity of existing dwellings and private gardens.
- 2) Dwellings should be surrounded by private gardens, their facades should display a variety of materials and shading structures,
- 3) Garages should be integrated with the overall architectural form of the dwelling and designed so as not to dominate the street frontage.
- 4) Development responds to topography of the site and minimizes site disturbance.

B. Controls

- 1) Articulation
 - a) "Articulate" all building forms and facades:
 - i) stepping floor plans should be capped by a variety of roof forms and pitches;

- ii) every elevation should incorporate windows;
 - iii) walls should be overhung by shady verandahs, awnings and carports.
- 2) Bulk and Scale
- a) Two storey buildings to be designed as a combination of one and two storey elements with a variety of setbacks from boundaries
 - b) External walls are not to be longer than 8m between distinct corners or features such as projecting verandahs and awnings or banks of windows.
 - c) All balconies and decks higher than 800mm above existing ground level shall incorporate privacy measures such as screening or landscape planting.
- 3) Design
- a) Dwellings should front the street, and display a traditional configuration with:
 - i) The front door and a window to a habitable room facing the street
 - ii) Garages integrated within the building façade
 - iii) The size of driveways minimised, retaining sufficient area for landscaping of front gardens
- 4) Garages
- a) Must be setback at least 1m behind the building line of the dwelling
 - b) The total width of all garage doors facing a primary or secondary road frontage must not exceed;
 - i) If the lot has a width less than 15m measured at the building line – 4.8m
 - ii) If the lot has a width of more than 15m measured at the building line – 6m.
- 5) Corner Lots
- Development on corner lots is to be designed and orientated so as to address both street frontages and include appropriate design features and articulation.
- 6) Parking
- a) Parking is to be provided at the rate of:
 - i) A minimum of one space behind the building alignment
 - ii) Two spaces for each dwelling with two or more bedrooms, at least one of which is located behind the building alignment. Stacked parking is acceptable for additional spaces.

2.1.6 Solar Planning

A. Objectives

- a. Improve the energy efficiency of dwellings and achieve a high standard of residential amenity.
- b. To ensure adequate residential amenity through the provision of sunlight access and good solar amenity to the living spaces and private open space areas of dwellings.
- c. To recognise the reasonable expectation for a dwelling to have the ability to access sunlight.

B. Controls

- 1) Demonstrate that dwellings meet acceptable solar standards and that existing neighbouring and proposed private open spaces receive adequate solar access:
 - a) maximise potential for solar gain by placing windows in all exterior walls that are exposed to northern sun;
 - b) ensure that the proposed development provides a minimum of 3 hours sunlight between 9am and 3pm on 21 June, to living zones of the dwelling, and the living zones of any adjoining dwellings;
 - c) ensure that the proposed development provides a minimum of 3 hours sunlight between 9am and 3pm on 21 June, to 40% of the main private open spaces of the dwelling and main private open spaces of any adjoining dwellings, and
 - d) where existing overshadowing by buildings and fences reduces sunlight to less than this, sunlight is not further reduced by more than 20%.

2.1.7 Garden Design and Fences

A. Objectives

Gardens should be landscaped, surrounded by fences that enable surveillance of public places and are compatible with neighbourhood character.

B. Controls

- 1) Retaining walls:
 - a) generally should be no taller than 600mm;
 - b) should be separated from any associated fence by a planter-bed at least 500mm wide, minimising the apparent overall height of fencing;
 - c) should be separated from any driveway by a landscaped verge at least 500m wide, to prevent impact damage from vehicles.
- 2) Fencing;
 - a) Meets the requirements of the Dividing Fences Act 1991
 - b) Fences should be generally no taller than 1.8m or up to 2.4m on sloping sites, including the height of any retaining wall.
 - c) Fences along boundaries forward of the front building alignment should not be taller than 1.2m and consist of see-through construction;
 - d) Fences along shared driveways or fronting a public park should be 1m tall, or if taller, of see-through construction.
 - e) Fences in any location that can be seen from the street or fronts a public park frontage should not be constructed of solid metal panels.
 - f) If frontage is to a noisy thoroughfares solid masonry walls are acceptable to a maximum of 1.8m if corners and planting beds are incorporated every 5m.
 - g) Fencing of a "see-through Construction" includes panels set into a timber frame or between brick piers, where:
 - h) Any solid base is not taller than 600mm; and
 - i) Panels are spaced timber pickets or palings, or palisade fencing.

- 3) The rear boundary setback should provide:
 - a) The principal area of private open space;
 - b) a corridor of habitat, and a green backdrop that is visible from the street;
 - c) conservation for any existing corridor of mature trees; and/or
 - d) an interlocking canopy of low to medium-height trees and shrubs; predominantly species indigenous to the soils of Penrith City.
- 4) Planting along side boundaries is to provide small-to medium height canopy trees for sun-shading and privacy separation between neighbouring dwellings and yards;
- 5) Planting along narrow service areas is to provide feature plantings of ground covers pavers or an alternative water-permeable material such as river pebbles.
- 6) Street frontages are to;
 - a) be sympathetic to the natural setting and character in form materials and colour; and
 - b) incorporate mixed species of trees, shrubs, and accent plantings including flowers, ground covers and turf;
 - c) along noisy thoroughfares: noise attenuation with an interlocking canopy formed by at least two rows of trees under planted with dense hedges.
 - d) maximize natural surveillance from the street to the building and from the building to the street.

2.1.8 Significant Landscapes

A. Background

- 1) Across Penrith, there are many significant natural landscape precincts including:
 - a) frontages to the Nepean River;
 - b) escarpment footslopes in Leonay and Emu Heights;
 - c) the Cranebrook escarpment;
 - d) Glenmore Park, adjacent to the Mulgoa Nature Reserve;
 - e) wooded hillsides in South St Marys;
 - f) individual streetblocks identified by Council's Register of Significant Trees and Gardens; and
 - g) in Kingswood: Werrington Creek.
- 2) Across Penrith there are several significant landscape precincts such as parklands and open space corridors including:
 - a) parklands and open space corridors:
 - b) corridors along South and Ropes Creeks;
 - c) Chapman Gardens, Kingswood; and
 - d) Victoria Park, St Marys.

B. Objectives

In areas of particular significance to natural conservation or high environmental character, new development should demonstrate detailed design measures to protect that conservation significance or character.

C. Controls

For sites located within significant landscapes:

- 1) maintain natural topography and features such as rock outcrops;
- 2) preserve established trees, preferably as blocks or corridors of several trees;
- 3) ensure that long term survival of established trees is not affected by the location of buildings and pavements or construction works;
- 4) preserve clusters of established trees as blocks or corridors;
- 5) consider a wider side boundary setback as landscaped corridor to preserve trees and provide vistas between neighbouring buildings;
- 6) on sloping sites garages may be located at street-level within the front set-back, subject to an "open" design similar to a screened carport;
- 7) on sloping sites dwellings should be split-level designs, with the lowest floor level no higher than 1m above natural ground level;
- 8) in general, new plantings should be species indigenous to the local soil type, reinforcing visual and habitat values.

2.1.9 Significant Townscapes

A. Background

Across Penrith, there are many significant townscape precincts, including:

- a) heritage conservation areas of Lemongrove and Derby Street;
- b) the Warwick Street neighbourhood;
- c) the "Duration Cottages" in St Marys;
- d) surrounding Cook Park, St Marys South;
- e) the "Permanent Cottage Area", St Marys North;
- f) post-war subdivision, St Marys North;
- g) other areas identified in the Penrith Heritage Study.

B. Objectives

In areas of particular significance to urban conservation, new development should demonstrate detailed design measures that protect heritage significance or character.

C. Controls

- 1) In neighbourhoods with townscape significance, new dwellings should:
 - a) adopt the predominant width, height, scale and stepping of floorplans that are characteristic of existing buildings;
 - b) adopt roof pitches and forms that match neighbouring buildings;

- c) minimise the width and area of driveways visible from public frontages, and conceal garages from public frontages;
 - d) incorporate simple detailing of building forms and openings, rather than attaching "stuck-on" details to gable ends and verandahs;
 - e) incorporate garages that are either concealed behind new buildings, or designed like a screened verandah;
 - f) conserve vegetation that has visual or historical significance.
- 2) For redevelopment of sites that have an existing cottage the existing dwelling wherever possible should be maintained and alterations should be designed so that they are sympathetic to the character or heritage value of the original building by:
- a) maintaining the general configuration of surrounding garden areas and setbacks from side boundaries;
 - b) with additions located to the rear of the existing building; and
 - c) within or behind the original roofline; or
 - d) capped by a new roof matching the pitch and form of the original;
 - e) consider verandahs and awnings to screen elevations and reduce the scale of new walls.

2.2 Dual Occupancies

The following developments are covered by this section:

- a) dual occupancy development; and
- b) alterations and additions to existing dual occupancy development.

This section provides specific controls for dual occupancy development in addition to the general controls elsewhere in this DCP.

2.2.1 Residential Character

A. Background

The residential character of any neighbourhood is determined by:



- 1) Location and density of development:
 - a) proximity to busy centres or major roads;
 - b) residential density and mix of housing types;
 - c) proximity to heritage precincts;
 - d) frontage to public parks.



- 2) The local landscape and its configuration:
 - a) flat or sloping;
 - b) well-vegetated or cleared;
 - c) frontages to streams or the Nepean River.



3) Predominant patterns of planning and design, displayed by:

- a) local buildings and their gardens;
- b) setbacks and building separation;
- c) height, scale and bulk;
- d) garaging;
- e) articulated forms and varied plantings.

2.2.2 Preferred Configuration for Dual Occupancy Development

A. Objectives

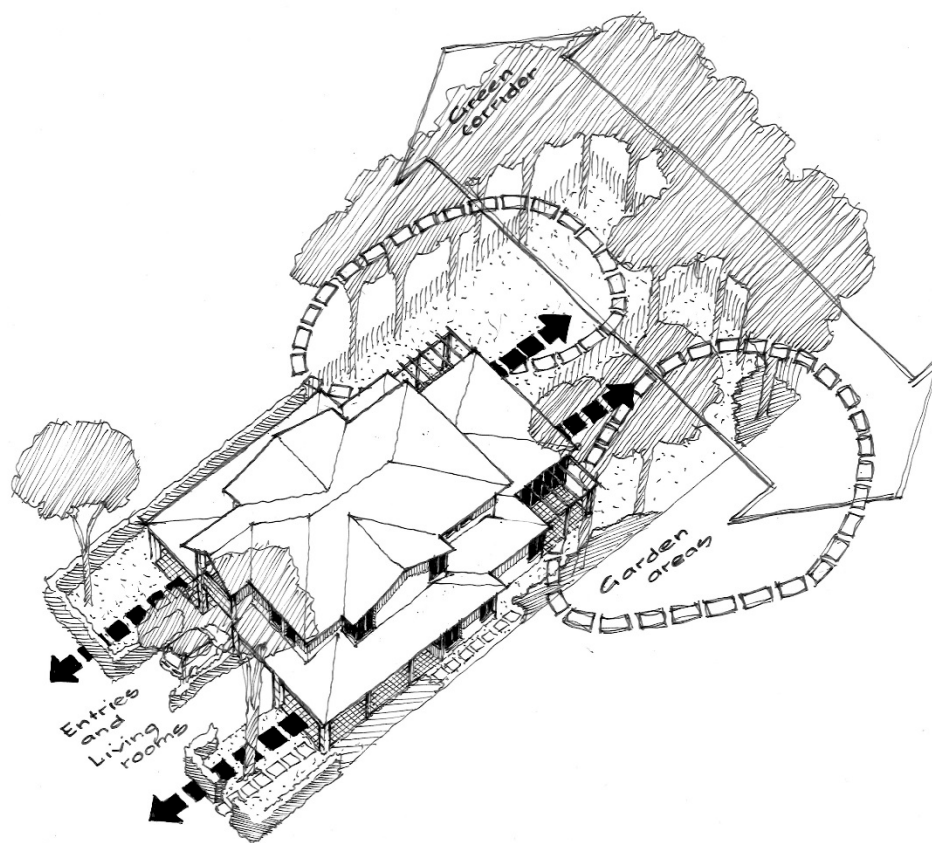
- 1) Dual occupancies should adopt key features of established suburban design.
- 2) Two dwellings fronting the street, with their entrances, the windows to principal living rooms and private gardens facing the street or rear boundary, as seen in figure D2.2.

B. Controls

- 1) New development should incorporate the traditional configuration of the cottages and cottage gardens that define the character of Penrith's established neighbourhoods, because:
 - a) traditional development demonstrates social and urban design benefits, particularly the orientation of dwellings and their private open spaces towards the street rather than overlooking neighbouring dwellings and gardens;
 - b) patterns of buildings and private gardens in established neighbourhoods have visual and symbolic richness that are valued by their community;
 - c) the use of traditional features softens the popular perception that redevelopment is changing the traditional character of Penrith City.
- 2) There are several possible types of dual occupancy development:
 - a) attached: as semi-detached pairs fronting the street, or one dwelling set behind another;
 - b) detached: either two dwellings fronting the street, or one dwelling set behind another.
- 3) In order to reflect patterns of traditional development, the preferred configuration for dual occupancies involves a "green corridor" of trees and shrubs along rear boundaries:
 - a) conserving remnant vegetation;
 - b) providing new shelter and habitat;
 - c) contributing to streetscape; and
 - d) providing a green outlook for dwellings.

- 4) In order to reflect patterns of traditional development, the preferred configuration for dual occupancies involves Substantial back garden areas:
 - a) adjoining neighbouring back yards;
 - b) surrounded by stepping building forms, predominantly of a single storey.
- 5) In order to reflect patterns of traditional development, the preferred configuration for dual occupancies involves garages integrated with the design of buildings and front gardens:
 - a) allowing living areas and entrances to remain visible from the street;
 - b) maximising the area available for front garden plantings.

Figure D2.2



2.2.3 Alternative Configuration for Dual Occupancy Development.

A. Background

Dual occupancy development might also involve retention and renovation of an existing dwelling. In that situation, the new dwelling may be sited behind the dwelling to be retained. Because this form of development replaces the back-yard with a new dwelling, it is not entirely consistent with traditional suburban design. Nevertheless, the potential for undesirable visual and amenity impacts can be minimised by adopting features that are typical of traditional development.

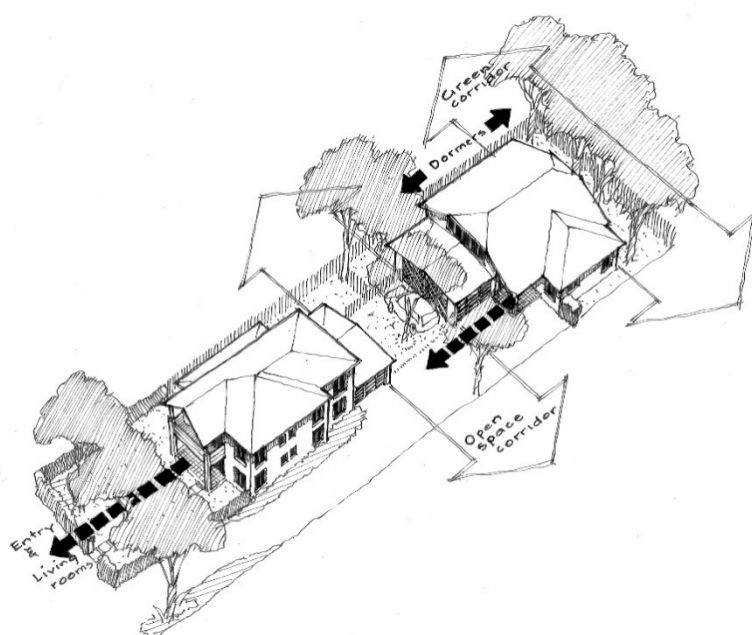
B. Objectives

Both dwellings, their entrances, the windows to their principal living rooms and private gardens face the street or the rear boundary.

C. Controls

- 1) Where dual occupancy development involves two dwellings placed one behind the other a "green corridor" of trees and shrubs along rear boundaries (as shown in figure D2.3):
 - a) conserving remnant vegetation;
 - b) providing new shelter and habitat;
 - c) contributing to streetscape; and
 - d) providing a green outlook for dwellings.
- 2) Where dual occupancy development involves two dwellings placed one behind the other buildings should be separated by a corridor of open space to:
 - a) lined with shady trees;
 - b) as garden courtyards; or
 - c) open car-parking courts.
- 3) Where dual occupancy development involves two dwellings placed one behind the other parking areas are to be concealed from the street to avoid the appearance of "garage architecture".
- 4) Where dual occupancy development involves two dwellings placed one behind the other verandahs and private garden courts are required to fill the front garden to:
 - a) encourages active use by residents;
 - b) provides for attractive street-frontages.

Figure D2.3



How much floor space is appropriate to your site

2.2.4 Urban form

A. Objective

New buildings should show characteristics of traditional suburban development: dwellings oriented to face the street, building forms stepped or articulated, and integrated with the shape of surrounding garden areas.

B. Controls

- 1) Both dwellings should front the street, and display a traditional orientation with:
 - a) a semi-detached configuration, and an individual architectural appearance for each dwelling (that is, non-symmetrical); and
 - b) living rooms and entrances facing the street rather than neighbouring properties; and
 - c) extensive private gardens to the rear adjacent to neighbouring yards; and
 - d) garages integrated within the building façade, ensuring that at least one principal living room and the entry to each dwelling are visible from the street; and
 - e) the size of driveways minimised, retaining sufficient area for attractive front gardens.
- 2) For any dwelling behind the street frontage:
 - a) a single storey appearance; and
 - b) living rooms, entrances and any dormer windows should face the street and / or the landscaped rear boundary setback; and
 - c) private gardens fill the rear setback; and
 - d) conceal garages from the street
- 3) Avoid "gun-barrel" style developments with long buildings, long straight driveways and rows of uniform width garden courtyards:
 - a) for attached dwellings, use stepped walls to cast shadows and reduce apparent scale of buildings;
 - b) for detached buildings that are set one behind the other, separate each building by an "open space corridor" at least 4m wide running across each site:
 - a combination of garden areas and parking courtyards; or
 - open parking spaces lined by an "avenue" of shady, overhanging trees;
- 4) "Articulate" all building forms and facades by design measures that cast deep shadows across every elevation:
 - a) external walls should not be longer than 5m between distinct corners;
 - b) use a variety of roof forms and pitches;
 - c) provide windows in every elevation;
 - d) use a variety of shady verandahs, awnings and car-ports.

2.2.5 Front and Rear Setbacks

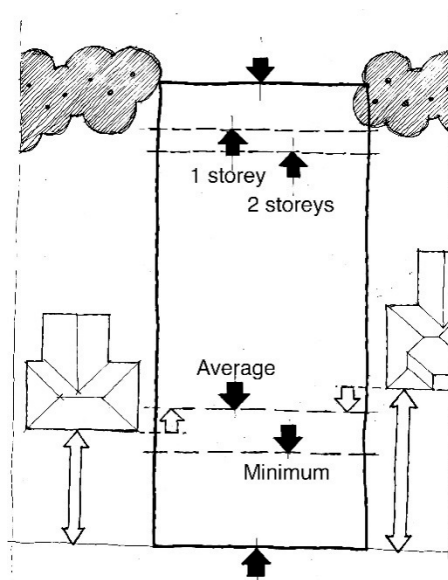
A. Objective

Setbacks are to reflect the character of established garden suburbs, and provide for development of flora and fauna corridors (as shown in figure D2.4).

B. Controls

- 1) Development must be within the development footprint which is determined by the maximum development footprint for your site by:
 - a) The minimum rear setback for a single storey building (or any single storey component of a building) is 4m.
 - b) The minimum rear setback for a two storey building (or any two storey component of a building) is 6m.
 - c) Adopting an average 6m rear setback on irregular shaped allotments; and
 - d) Adopting a front setback that matches the neighbourhood character.
- 2) Within the rear boundary setback:
 - a) there shall be no building encroachments either above or below ground (eaves excepted);
 - b) maximise the amount of undisturbed soil, encouraging rapid growth of healthy trees and shrubs;
 - c) where there are physical encumbrances such as open drains, increase the setback accordingly.
- 3) Determine an appropriate front setback:
 - a) either average the setbacks of
 - b) the immediate neighbours; or
 - c) adopt a 5.5m minimum whichever is the greater dimension;
 - d) and provide extensive landscaping within the front setback area.
- 4) Permissible encroachments within the front setback are:
 - a) verandahs and pergolas only;
 - b) with a maximum 1.5m encroachment.
- 5) Garages and parking spaces are not permissible within the front setback, other than stacked parking or driveways leading to a garage.

Figure D2.4



2.2.6 Building Envelope and Side Setbacks

A. Objective

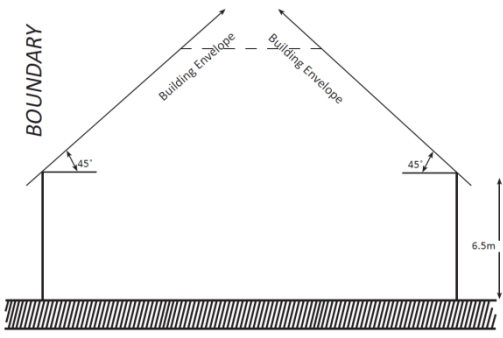
Comply with building envelope controls, minimise disturbance to existing topography and natural soil-profiles, and provide for reasonable landscaped separation between neighbouring buildings.

B. Controls

- 1) Development is to comply with the building envelope for the site. The building envelope means a height plane over the site at 45 degrees from a specified height above natural ground level at the side boundaries of the site, as shown in Figure D2.5.

Figure D.2.5: The building envelope is measured from natural ground level perpendicular to the side boundary at any given point along the wall.

Zone	Maximum building envelope
R2 Low Density Residential	

Zone	Maximum building envelope
R3 Medium Density Residential	

- 2) The building envelope, and the apparent rise in storeys and external wall heights, shall be measured relative to:
 - a) side boundaries only; and
 - b) existing ground level.
- 3) Only minor encroachments through the building envelope shall be permitted:
 - a) eaves to main roofs;
 - b) chimneys and antennas;
 - c) pergolas.
- 4) Cut and fill and ground floor heights are restricted by the following:
 - a) provide stepping building platforms in line with existing topography with floors no higher than 1m above natural ground level;
 - b) restrict cut-and-fill to a maximum of 500mm;
 - c) provide effective sub-soil drainage.
- 5) Pitches for main roofs are to be in accordance with the following:
 - a) for single-storey dwellings: not greater than 35 degrees, providing for attic rooms;
 - b) for two storey dwellings: not greater than 25 degrees, in order to reduce the visual scale of buildings.
- 6) Setbacks from side boundaries should be varied to articulate walls to side boundaries by the following:
 - a) maximise setbacks (and landscaped area) beside neighbouring cottage back-yards;
 - b) Otherwise, a minimum 900 mm setback at ground level for walls no longer than 10m;
 - c) a greater set-back for second storey walls, consistent with the building envelope.
- 7) Zero setbacks from the side boundary are not permissible except for single garages with an open appearance. In addition these garages are to be no taller than 2.1 m at the boundary.
- 8) For any dwelling placed behind another fronting the street, attic rooms are permissible subject to:
 - a) being within the prescribed building envelope
 - b) within a hipped or gabled roof where the maximum roof pitch is 35 degrees

- c) provided that dormer windows do not face side boundaries.

2.2.7 Driveways and Parking Areas

A. Objective

Provide on-site parking at a level that encourages use of public transport. Minimise the area required for parking, encourage efficient land use and maximise the area available for landscaping and gardens.

B. Controls

- 1) Provide onsite parking in accordance with parking section of this DCP.
- 2) Garages for attached dwellings should:
 - a) occupy not more than 50% of any street frontage;
 - b) flanked by at least one principal living room that faces the street with secondary windows facing the side boundary for light and ventilation.
- 3) For dwellings located one behind the other, driveways should:
 - a) be separated from dwellings by a landscaped verge at least 1m wide;
 - b) where possible, also separated from boundary fences by a landscaped verge;
 - c) prevent adverse long-term effect upon any vegetation that must be preserved;
 - d) provide for effective and healthy landscaping along all site boundaries;
 - e) drain by gravity to Council's stormwater network.

2.2.8 Landscaped Area

A. Objective

Retain a reasonable proportion of each site for landscaped garden areas, conserve significant existing vegetation, and provide reasonable separation between neighbouring dwellings.

B. Controls

- 1) Landscaped areas should be:

Zone	Minimum landscaped area % of the site
R1 Residential General	40
R2 Low Density Residential	50
R3 Medium Density Residential	40
R4 High Density Residential	35

- 2) Landscaped areas should provide:
- a) effective separation between neighbouring dwellings; and

- b) healthy growth of new trees and shrubs; and
 - c) long-term survival of existing vegetation required by Council to be preserved (both on-site and on neighbouring properties); and
 - d) private courtyards for all dwellings and a green outlook; and
 - e) civic gardens along street frontages.
- 3) Landscaped areas are required to:
- a) have a minimum width of 2m and serve as functional spaces;
 - b) should include private courtyards measuring a minimum of 30m²;
 - c) may include verandahs or patios that open directly to private courtyards;
 - d) do not include substantially-paved areas such as buildings, driveways and covered garages;
 - e) that part of any easement exceeding 10% of the site area shall not be included in the landscaped area calculation.

2.2.9 Solar Planning

A. Objective

- a) Improve the energy efficiency of dwellings and achieve a high standard of residential amenity.
- b) To ensure adequate residential amenity through the provision of sunlight access and good solar amenity to the living spaces and private open space areas of dwellings.
- c) To recognise the reasonable expectation for a dwelling to have the ability to access sunlight.

B. Controls

- 1) The applicant must demonstrate that dwellings meet acceptable solar standards and that existing neighbouring and proposed private open spaces receive adequate solar access by:
 - a. Providing shadow diagrams prepared by a qualified technician for all two-storey buildings and additions;
 - b. Illustrating the impacts of proposed development upon existing neighbouring dwellings and their open space areas;
 - c. Demonstrating shadows cast by neighbouring buildings;
 - d. Maximising potential for solar gain by placing windows in all exterior walls that are exposed to northern sun;
 - e. Ensuring that the proposed development provides a minimum of 3 hours sunlight between 9am and 3pm on 21 June, to living zones (ie areas other than bedrooms, bathrooms, kitchen and laundry) of each dwelling, and the living zones of any adjoining dwellings;
 - f. Ensuring that the proposed development provides a minimum of 3 hours sunlight between 9am and 3pm on 21 June, to 40% of the main private open spaces of the dwelling and main private open spaces of any adjoining dwellings; and
 - g. In situations where the existing overshadowing by buildings and fences reduces sunlight to less than the minimums noted above, the development is to not further reduced sunlight to the specified areas by more than 20%.

Urban Design Important Details

2.2.10 Significant Landscapes & Townscapes

A. Background

- 1) Across Penrith, there are many significant townscape precincts, including:
 - a) heritage conservation areas of Lemongrove and Derby Street;
 - b) the Warwick Street neighbourhood;
 - c) the "Duration Cottages" in St Marys;
 - d) surrounding Cook Park, St Marys South; and
 - e) other areas identified in the Penrith Heritage Study.
- 2) Across Penrith, there are many significant landscape precincts including:
 - a) frontages to the Nepean River;
 - b) footslopes to the escarpment in Emu Heights and Leonay;
 - c) Glenmore Park, adjacent to the Mulgoa Nature Reserve;
 - d) wooded hillsides in St Marys South;
 - e) individual streetblocks, such as the block surrounded by Derby, Lethbridge, Doonmore and Evan Streets;
 - f) Cranebrook escarpment.

B. Objective

In areas of particular significance to urban conservation, environmental character, new development should demonstrate detailed design measures that protect and complement heritage significance or character.

C. Controls

- 1) Development of sites located in areas of landscape significance are to:
 - a) maintain natural topography and features such as rock outcrops;
 - b) preserve established trees, preferably as blocks or corridors of several trees;
 - c) ensure that long term survival of established trees is not affected by the location of buildings and pavements or construction works;
 - d) incorporate new plantings that reinforce the visual and habitat values;
 - e) use split-level building designs that step up hillside sites: and
 - f) ensure that the lowest floor level is not higher than 1m above natural ground;
 - g) on sloping sites, garages and parking areas may be located at street-level within the front set-back, subject to an "open" design similar to a screened carport;
 - h) in general, new plantings should be species indigenous to the local soil type, reinforcing visual and habitat values
- 2) In neighbourhoods with townscape significance, new development should:
 - a) conserve vegetation that has visual or historical significance;
 - b) adopt the predominant width, height, scale and stepping of floor plans demonstrated by existing buildings;

- c) adopt roof pitches and forms that match neighbouring buildings;
 - d) minimise the width and area of driveways visible from public frontages, and conceal garages from public frontages (corner sites excepted);
 - e) incorporate simple detailing of building forms and openings, rather than attaching "stuck-on" details to gable ends and verandahs.
- 3) Redevelopment of sites with an existing cottage within a significant landscape or townscape areas are to:
- a) maintain the existing dwelling wherever possible; and
 - b) locate a new dwelling within the former back-yard;
 - c) emphasise the use of verandahs and awnings around all elevations to reduce the scale of long walls.

2.2.11 Corner Sites and Park Frontages

A. Objective

For allotments facing two streets or adjoining a public park, apply traditional principles of orientation and articulation to both of the public frontages.

B. Controls

- 1) measure the building envelope relative to the longest common residential boundary; and
- 2) the rear setback and the averaged front setback may be measured relative to the shortest residential boundary;
- 3) minimum setbacks from the secondary street frontage to external walls is to be no less than 3m
- 4) minimum setbacks from the secondary street frontage to garage entrances is to be 5.5m;
- 5) minimum setbacks from the secondary street frontage to verandahs is to be 3m;
- 6) living rooms, dwelling entrances and verandahs may face either street frontage;
- 7) garages should have an "open" design (similar to screened carports or verandahs), and should architecturally divide each development into two individual dwellings;
- 8) development should appear as two buildings, with facades to both buildings not longer than 20m facing either street (excluding attached garages of an "open" design);
- 9) dormer windows to attic rooms may face either street frontage, but should not overlook a side boundary,
- 10) the area of driveways visible from the street should be minimised, providing for maximum front garden areas;
- 11) garden areas facing the street should be landscaped as private courtyards attached to dwellings.

2.2.12 Building Design

A. Background

The preferred form for dual occupancy development is a pair of dwellings, either attached or detached, that directly face a street frontage.

B. Objective

New developments should appear as individual dwellings surrounded by gardens, with facades that incorporate a variety of materials and shading structures.

C. Controls

- 1) Dormer windows apply traditional design practices including:
 - a) capped by hipped or gabled roofs, within the building envelope, and no taller than the ridgeline of the building's principal roof;
 - b) appear predominantly glazed, or open and have a vertical proportion;
 - c) occupy not more than 25% of any roof measured in elevation;
 - d) meet guidelines for privacy and solar planning; and
 - e) dormer face to sit above the roof plane, i.e. not to rise continuous from ground level.
- 2) Development should demonstrate a variety of architectural features:
 - a) to express the street frontage as two individual dwellings: attached features such as balconies and verandahs;
 - b) to down-play the appearance of garages awnings and balconies that overhang garage entries are to be used and the garage shutters used should incorporate windows, or semi-transparent screens of lattice, battens or similar materials;
 - c) to minimise scale and bulk the alignment of walls should be stepped and corners should be overhung by verandahs or awnings, or broken by windows and doors;
 - d) to accentuate articulation of building forms incorporate a variety of windows and doors in all visible walls, use a range of projecting roofs, awnings and verandahs and provide a combination of building materials: painted and face brickwork, and light-weight cladding.

2.2.13 Energy Efficiency

A. Objective

Dwellings shall be configured and constructed to minimize the energy required for space heating, cooling or lighting.

B. Controls

- 1) All new dual occupancy development should employ construction techniques that provide appropriate thermal mass such as:
 - a) ground floor: slab-on-ground;
 - b) walls: masonry internal walls to ground floor are desirable.
- 2) All new dual occupancy development should adopt an appropriate orientation for rooms and windows including:
 - a) living areas - facing within 30 degrees of solar north is desirable;
 - b) windows - at least 50% of glazing facing solar north is desirable, unprotected glazing facing east, west or south shall be avoided and for every habitable room, windows in two external walls are desirable;
- 3) All new dual occupancy development should provide effective shading from summer sun including:
 - a) Overhanging eaves: at least 450mm wide;

- b) Adjustable exterior shading devices for windows and doors to habitable rooms, and to skylights;
 - c) Pergolas over courtyards.
- 4) All new dual occupancy development should employ effective glazing including:
- a) for any large south-facing window: high performance glass e.g. double glazing in thermal break frames;
 - b) windows and doors facing east, south or west: high performance glass e.g. Double glazing in thermal break frames;
 - c) all windows and external doors: weather-stripping should be used.
- 5) All new dual occupancy development should adopt a configuration for dwellings that promotes cross-ventilation including:
- a) living areas and bedrooms with two external walls for windows;
 - b) particularly important for attic rooms.

2.2.14 Design of Dwellings and Private Courtyards

A. Objective

Dwellings and their private courtyards should achieve high levels of amenity, and demonstrate traditional practices of suburban design

B. Controls

- 1) A reasonable area of private open space should be provided for each dwelling:
 - a) a minimum of 30m²;
 - b) including one area measuring at least 6m by 4m, suitable for outdoor dining; and
 - c) located immediately next to, and level with, living or dining rooms; and
 - d) also incorporating an area for outdoor clothes-drying at least 2m wide, exposed to sunlight and breeze, screened from view by a fence or wall at least 1.8m tall; and
 - e) with access direct to the street or a common driveway through a courtyard at least 2m wide; or via a carport with an open design.
- 2) Landscaped areas should maximise the area available for private courtyards and gardens:
 - a) the front and rear boundary setbacks should be used for private residential gardens;
 - b) common open space should be restricted to the verges of any shared driveway.

C. Controls

- 1) Rooms within a dual occupancy development should have dimensions and an area that:
 - a) can accommodate the range of furniture typically associated with their function; and
 - b) recognise that furnishing options may be restricted by the location of windows and doors;
 - c) acknowledge that access and furnishing options may be restricted by raked attic ceilings;
 - d) provide flexibility to meet the needs of future occupants: for example home business activities and aged residents.

2.2.15 Garage Design

A. Objective

Garages should be designed to serve a variety of purposes, and their appearance should contribute to the overall diversity of building form and design.

B. Controls

- 1) Garage and parking areas should be planned to:
 - a) minimise disruption to traditional or established streetscapes by concealing from the street;
 - b) provide flexible accommodation for vehicles, domestic pets, storage, and covered areas for outdoor recreation (as shown in figure D2.6);
 - c) minimise transmission of noise to adjoining dwellings;
 - d) provide secure parking;
 - e) allow for maintenance access to rear garden courtyards; and
 - f) provide for effective and healthy landscaping along verges and boundaries.
 - g) permit all turning movements, full opening of vehicle doors as defined by AS 2890.6-2009;
- 2) For dwellings that require two spaces:
 - a) provide at least one covered space;
 - b) for dwellings located one behind the other: the second space may be an open court facing the side driveway; or
 - c) for paired dwellings facing the street: the second space may be stacked on the driveway in front of the covered space. Please refer to figure D2.7.
- 3) Garages and parking spaces are not permissible within the front setback

Figure D2.6: Dimensions permit turns, opening of doors and storage

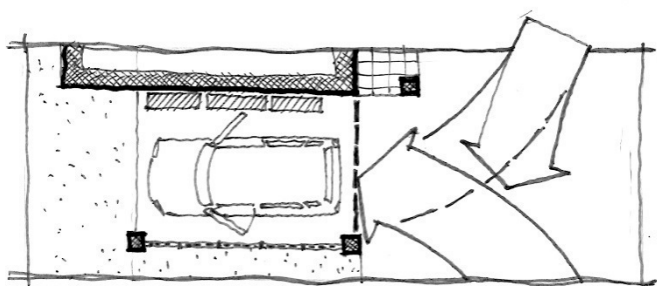
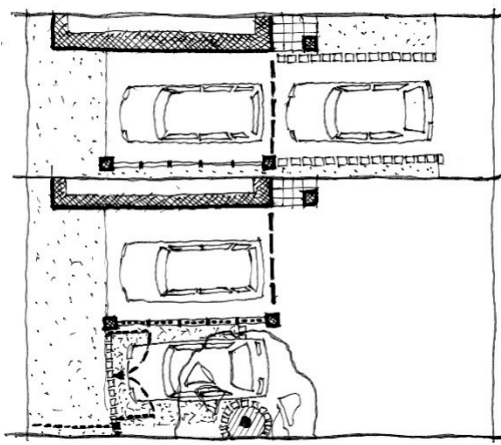


Figure D2.7: Two spaces – one covered plus one open, either stacked or paired



C. Controls

- 1) Design of covered garages to consider the following:
 - a) low, open appearance similar to a wide verandah;
 - b) if exposed at the end of a building, enclosed by semi-transparent screens that provide for natural ventilation and effective security (rather than surrounded by masonry walls);
 - c) with shutters that have windows, or are semi-transparent screens providing natural ventilation and effective security.

2.2.16 Garden Design

A. Objective

Gardens should be landscaped according to the function of each area, and should provide a backdrop that is appropriate to each adjacent room.

B. Controls

- 1) The rear boundary setback should provide:
 - a) private garden courtyards;
 - b) a corridor of habitat, and a green backdrop that is visible from the street;
 - c) conservation for any existing corridor of mature trees; or
 - d) an interlocking canopy of low to medium-height trees and shrubs;
 - e) predominantly species indigenous to the soils of Penrith City.
- 2) Alongside boundaries, provide:
 - a) small-to medium height canopy trees for sun-shading and privacy separation between dwellings;
 - b) within the verges to any common driveway: hedges fronting windows to any dwelling;
- 3) Alongside boundaries within private courtyards provide:
 - a) feature plantings of ground covers and shrubs growing to fence height at maturity;
 - b) a level area of well-drained turf, or an alternative water-permeable material such as river pebbles.
- 4) Street frontage plantings should provide:

- a) private gardens for street-front dwellings;
- b) a civic garden frontage appropriate to the established neighbourhood character; and
- c) mixed species of trees, shrubs, and accent plantings including flowers and ground covers;
- d) level areas of well-drained turf; and
- e) along noisy thoroughfares: noise attenuation with an interlocking canopy formed by at least two rows of trees underplanted with dense hedges.

Figure D2.08

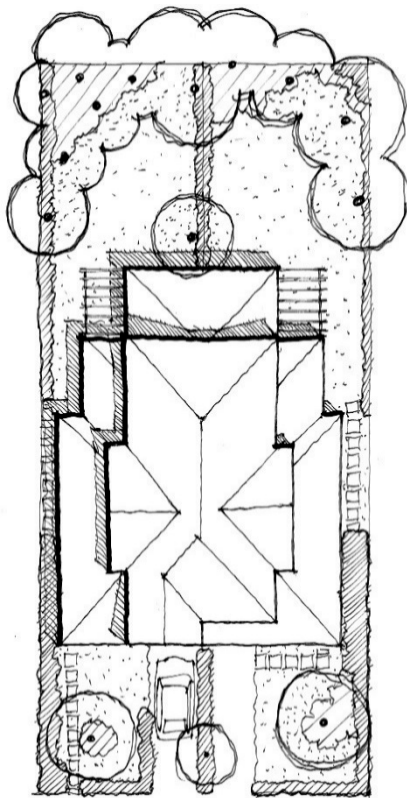


Figure D2.8 above depicts:

- Thickly planted rear gardens
- Courtyard shade and screening
- Median planting dividing driveways
- Civic street frontage.

2.2.17 Paving Design

A. Objective

Design driveways and paved areas as attractive and functional components of development, complementing the designs of garden areas and buildings, and providing effective management for stormwater run-off.

B. Controls

- 1) Hard paved surfaces should:
 - a) maximise the area available for landscaping and gardens;
 - b) impose no adverse long term effect on any vegetation that Council requires preserved.
- 2) Driveways and associated parking courts should:
 - a) provide an attractive "address" for any dwellings without a direct frontage to the street;
 - b) minimise the area and width of driveways along the street-frontage;
 - c) be overlooked by continuously-occupied rooms such as kitchens and living rooms;
 - d) be divided into panels by bands of contrasting materials or pavers;
 - e) provide barrier-free access continuous from the street to the entrance of each dwelling;
 - f) provide for landscaping as continuous verges along both sides, or as a verge beside dwellings with plantings in pavement cut-outs along a boundary fence;
 - g) incorporate materials and a profile that maximise the potential for direct infiltration of rainfall (other than in areas of recognised high soil salinity);
 - h) collect and channel run off into grated sumps located strategically and integrated with the design of surface pavement.
- 3) Courtyard paving should be provided:
 - a) at the threshold to each doorway leading from a dwelling: at least 1m wide;
 - b) beneath clothes lines;
 - c) where outdoor storage of garbage bins is proposed;
 - d) in the form of widely spaced pavers, or porous unit paving, maximising direct infiltration of rainfall.

Figure D2.9

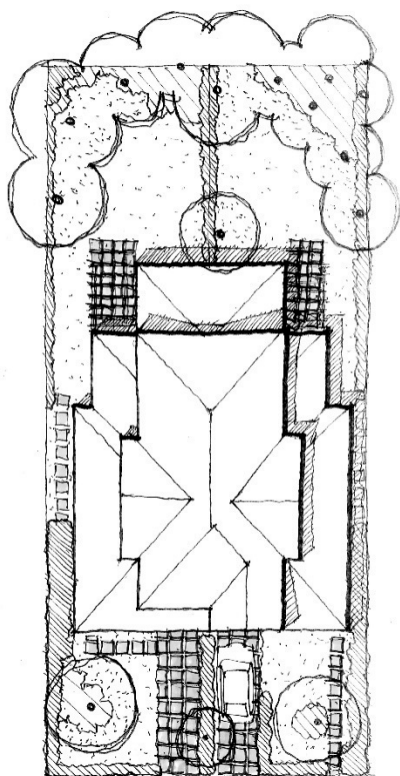


Figure D2.9 above diagram depicts:

- a) Courtyard paving – a threshold at least 1m wide outside each doorway and beneath clothes lines
- b) Driveways - Step around verge plantings alongside dwellings or trees planted into pavement cut-outs or median plantings
- c) Feature paving at the threshold to the street.

2.2.18 Fences and Retaining Walls

A. Objective

Fences, courtyard walls and boundary retaining walls should be compatible with neighbourhood character, and should be integrated with the design of buildings and garden areas.

B. Controls

- 1) Be sympathetic to the natural setting and character in form, materials and colour.
- 2) Maximise natural surveillance from the street to the building and from the building to the street.
- 3) Be structurally adequate, in accordance with the Building Code of Australia, and meets the Dividing Fences Act.
- 4) Fences should be no taller than:
 - a) 1.8m generally; and
 - b) 2.4m on sloping sites, including the height of any retaining wall.
- 5) Fences along boundaries forward of the front building alignment:

- a) should not be taller than 1.2m, or if taller, of see-through construction;
 - b) should not be constructed of metal panels;
 - c) walls of solid construction and taller than 1.2m (such as courtyard walls) should be set back at least 2m from the front boundary (to allow for landscaping) and should not occupy more than 50% of the allotment width.
- 6) Fences along boundaries along driveways and separating existing multi-unit housing, or fronting a public park should be 1m tall, or if taller, of see-through construction;
- 7) Fences along boundaries around private courtyards should minimise cross-viewing and the transmission of noise;
- 8) Fences along boundaries in any location that can be seen from the street or a public park frontage should not be constructed of metal panels;
- 9) Fences along boundaries fronting noisy thoroughfares:
- a) solid masonry walls are acceptable to a maximum of 1.8m; and
 - b) incorporating corners and planting beds every 5m;
- 10) Where fencing affects easements or stormwater flow paths: consult with Council and the relevant authority.
- 11) Fencing of a "see-through" construction includes:
- a) panels set into a timber frame or between brick piers; where
 - b) any solid base is not taller than 1m; and
 - c) panels are spaced pickets or palings, or lattice.
- 12) Retaining walls:
- a) generally should be no taller than 500mm;
 - b) should not cut through roots of any tree required by Council to be preserved;
 - c) should be separated from any associated fence by a planter-bed at least 500mm wide, minimising the apparent overall height of fencing;
 - d) should provide drainage for any associated planter-bed;
 - e) should be separated from any driveway by a landscaped verge at least 500mm wide, to prevent impact damage from vehicles.

2.2.19 Visual and Acoustic Privacy and Outlook

A. Objective

- a. Provide an outlook from dwellings and their private open space, and achieve levels of acoustic and visual privacy that are reasonable for a residential neighbourhood.
- b. The recommended night-time internal noise levels in living and sleeping areas is 35-40 dB(A). – WHO.
- c. To provide a high level of visual and acoustic privacy for residents and neighbours in dwellings and private open space.
- d. To ensure that building design minimises overlooking problems.

B. Controls

- 1) Demonstrate a package of measures that achieves reasonable privacy:

- a) for adjacent dwellings: at least 3m between any facing windows, screened by landscaping or other means including courtyard walls, or pergolas to prevent cross viewing from first storey windows;
 - b) dormer windows generally to be oriented to face the street or the rear boundary;
 - c) private courtyards should be screened by pergolas and masonry walls to prevent direct cross-viewing and excessive transmission of noise;
 - d) screening measures, including:
 - i) offsetting of windows; or
 - ii) oblique orientation for windows; or
 - iii) external screens to windows; or
 - iv) courtyard walls and pergolas;
 - v) note that landscaping (other than established trees and shrubs that are proposed to be retained) should not provide the principal means of screening;
 - e) rooms other than bedrooms should have any windows facing a driveway screened by landscaped verges at least 2m wide;
 - f) bedroom windows facing a driveway should be screened by masonry walls at least 1.5m tall located at least 1m from the face of the window;
 - g) All balconies and decks higher than 800mm above existing ground level shall incorporate privacy measures such as screening or landscape planting.
 - h) for windows of habitable rooms with a direct outlook onto windows of habitable rooms of adjacent dwellings:
 - i) are offset by a distance sufficient to limit views between windows; or
 - ii) have sill heights of 1.7 m above floor level; or
 - iii) have fixed obscure glazing in any part of the window below 1.7 m.
- 2) Demonstrate measures that protect dwellings from external noise sources:
- a) windows to ground-level living rooms screened by landscaped verges at least 2m wide;
 - b) within any dwelling, bedrooms should not adjoin the garage or living rooms of a neighbouring dwelling; internally, bedrooms should be segregated and separated from living areas by hallways, stairs or service rooms;
 - c) sound resisting construction of separating walls, floors and windows, in accordance with BCA;
 - d) zoning of dwellings into active living areas and passive sleeping areas, separated by corridors and/or service zones;
 - e) plant and equipment should be effectively screened and located away from sleeping areas;
 - f) along frontages to noisy arterial roads or the rail corridor:
 - i) locate habitable rooms and private open spaces away from noise sources and if required protect with appropriate noise shielding devices;
 - ii) comply with the requirements of relevant noise and vibration guidelines published by the NSW Government. The NSW Government sets standards in relation to acceptable noise levels for all operations and land uses through the Environment

Protection Authority's Environmental Noise Control Manual. These standards apply in all cases.

- iii) provide a detailed acoustic design report that demonstrates compliance with the above requirements;
- iv) provide a certificate of compliance at completion of construction;
- v) under extreme circumstances identified by Council, employ fixed glazing with air-conditioning for street-frontage bedrooms.

2.2.20 Safety and Security

A. Objective

Achieve a high level of passive security within and surrounding dwellings.

B. Controls

- 1) Encourage a sense of community:
 - a) dwelling entrances, the window to at least one continuously-occupied room and private courtyards should face the street and/or a common driveway;
 - b) fences should be designed to facilitate glimpses or filtered views from dwellings and private courts to the street and to driveways.
- 2) Ensure that at least one continuously-occupied room in each dwelling (a kitchen or living room) overlooks:
 - a) the front street;
 - b) driveways and garage forecourts.
- 3) Prevent concealment of intruders by:
 - a) uniform lighting levels across common areas such as driveways;
 - b) planning which does not provide hidden recesses;
 - c) along common pathways: selection of appropriate plant species according to height and density.

2.2.21 Accessibility and Adaptability

A. Objective

Ensure that dwellings are accessible to persons with impaired sight or partial mobility.

B. Controls

- 1) Demonstrate that planning and design measures do not prevent access by people with disabilities:
 - a) access pathways should slope gently and evenly, with a non-slip finish and no steps between the street frontage and principal building entrances;
 - b) stair nosings should have a distinctive colour and texture;
 - c) dwellings should have:
 - i) dimensions consistent with AS 1428.1-1998-Design for access and mobility.
 - ii) hallways at least 1m wide.
 - iii) circulation areas in bathrooms at least 1m wide.

- 2) Demonstrate that dwellings have been designed to meet the needs of an ageing population:
 - a) incorporate design measures which are appropriate to people with disabilities; and
 - b) employ lever-type door handles and traditional cruciform tap-handles; and
 - c) provide for future low-cost modifications to bathrooms:
 - i) future removal of hobs from shower recesses;
 - ii) provision for future attachment of grab-rails to walls.
 - d) provide for future low-cost modifications to kitchens including replacement of underbench shelves with drawers & attachment of grab-rails.
 - e) provide appropriate levels and location of lighting.

2.2.22 Storage and Services

A. Objective

Ensure that each dwelling has reasonable private storage space and waste management areas/facilities, and that meters, service cupboards and aerials are integrated with the design of buildings.

B. Controls

- 1) Provide storage for household items:
 - a) at least 10m³ per dwelling; either
 - b) as cupboard space within the dwelling in addition to wardrobes; or
 - c) within a lockable garage, not encroaching upon the parking space; or
 - d) in weather-proof lockers that are not visible from the street.
- 2) Letter boxes should be provided according to Australia Post specifications:
 - a) adjacent to the front boundary;
 - b) located conveniently for residents entering the site (by car or on foot);
 - c) integrated with the design of landscaped areas, fences and buildings.
- 3) Demonstrate that dwellings have been designed to accommodate home-based telecommunications facilities and information technologies by allowing for:
 - a) additional telephone lines and outlets;
 - b) additional electrical outlets;
 - c) satellite or cable-based reception.

2.3. Secondary Dwellings

The following developments are covered by this section:

- a) secondary dwellings; and
- b) alterations and additions to existing secondary dwellings.

This section provides specific controls for secondary dwellings in addition to the general controls elsewhere in this DCP.

A. Objectives

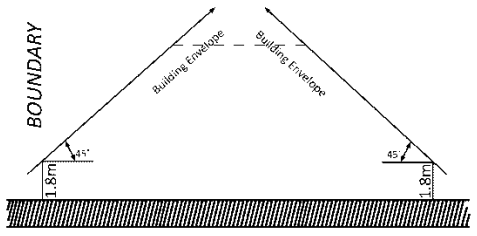
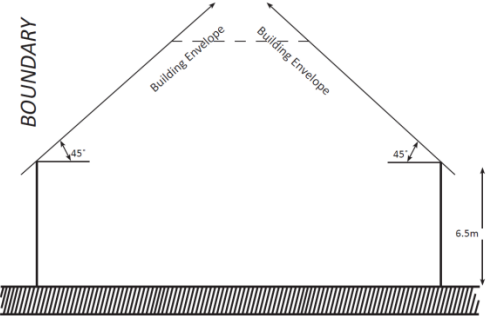
- a) To encourage a diversity of affordable housing.
- b) To provide housing and accommodation options for a range of family types and age groups.
- c) To promote innovative housing solutions compatible with the surrounding residential environment.
- d) To require secondary dwellings to be compatible with the existing built environment and residential character.
- e) To ensure that conversion of existing structures to secondary dwellings incorporates a satisfactory level of design and appearance which results in a high quality of residential amenity.
- f) To ensure that secondary dwelling development does not compromise the provision of onsite car parking provided for an existing or new dwelling house on the lot.
- g) Provide an outlook from dwellings and their private open space and achieve levels of acoustic and visual privacy that are reasonable for a residential neighbourhood.
- h) To ensure adequate residential amenity through the provision of sunlight access and good solar amenity to the living spaces and private open space areas of dwellings.
- i) To recognise the reasonable expectations for a dwelling to have the ability to access sunlight.

B. Development Controls

2.3.1 General

- 1) The minimum lot size for a secondary dwelling is 450m². On battleaxe allotments this does not include the area of the access handle.
- 2) Conversions of existing outbuildings will only be considered where:
 - a) The building meets the standards required by the Building Code of Australia (BCA) and;
 - b) The principal dwelling complies with the provisions of this DCP- i.e. compliance with parking requirements.
- 3) Secondary dwellings shall have a maximum of two bedrooms.
- 4) Development is to comply with the building envelope for the site. The building envelope means a height plane over the site at 45 degrees from a specified height above natural ground level at the side boundaries of the site, as shown in Figure D2.10

Figure D2.10: The building envelope is measured from natural ground level perpendicular to the side boundary at any given point along the wall.

Zone	Maximum building envelope
R2 Low Density Residential	 <p>The diagram illustrates the maximum building envelope for R2 Low Density Residential. It shows a cross-section of a building with a gabled roof. The side slopes of the roof are marked with 45-degree angles. The building is set back from the side boundary by a minimum of 0.8m. The ground level is indicated by a hatched area at the base.</p>
R3 Medium Density Residential	 <p>The diagram illustrates the maximum building envelope for R3 Medium Density Residential. It shows a cross-section of a building with a gabled roof. The side slopes of the roof are marked with 45-degree angles. The building is set back from the side boundary by a minimum of 6.5m. The ground level is indicated by a hatched area at the base.</p>

Encroachments – consideration may be given to minor encroachments to the building envelope for;

- i. Eaves and gutters
- ii. Chimneys and antennas
- iii. Pergolas, or
- iv. Where it is demonstrated the encroachment is necessary to improve the design, external appearance or utility of the building and the variation will not impact adversely on the amenity of an adjoining property.

2.3.2 Site Coverage

- 1) The erection of a secondary dwelling must not compromise the landscape requirements for the primary dwelling.
- 2) Landscaped areas should be:

Table D2.3.1: Minimum landscape area

Zone	Minimum landscaped area % of the site
R1 Residential General	40%
R2 Low Density Residential	50%

Zone	Minimum landscaped area % of the site
R3 Medium Density Residential	40%
R4 High Density Residential	35%

- a) a minimum width of 2m;
 - b) do not include substantially-paved areas such as buildings, driveways and covered garages;
 - c) alongside boundaries: should increase in width next to the back yards of neighbouring dwellings.
- 3) Landscaped areas should provide:
- a) long-term survival of existing vegetation that is required by Council to be preserved (both on-site and upon neighbouring properties); and
 - b) effective separation between neighbouring dwellings; and
 - c) side boundary setbacks that facilitate effective day lighting and natural ventilation of dwellings; and
 - d) private gardens and a green outlook from dwellings; and
 - e) conditions for healthy growth of new trees and shrubs; and
 - f) "civic" gardens along street frontages.

2.3.3 Siting and Design

- 1) For the conversion of an existing building, or part of an existing dwelling, into a secondary dwelling, applicants must demonstrate that the setbacks of the existing building, structure or garage have minimal impact on the following:
 - a) Scale and streetscape of the surrounding locality;
 - b) Surrounding properties, particularly in respect to overshadowing, loss of privacy and visual impact.
- 2) All balconies and decks higher than 800mm above existing ground level shall incorporate privacy measures such as screening or landscape planting.
- 3) For new secondary dwellings, the following controls apply:
 - a) Secondary dwellings must be located behind the front building line of the primary dwelling;
 - b) The minimum setback to the secondary street frontage is 3m;
 - c) The minimum side setback for a detached secondary dwelling is 900mm;
 - d) The minimum rear setback for a detached secondary dwelling is 3m; and
 - e) Where located above a garage facing a rear laneway, the building may be built to the rear boundary.
- 4) Notwithstanding any compliance with the front, side and rear setback controls, the applicant must also demonstrate that the proposed building setbacks:

- a) Maintain the established street character;
- b) Allow neighbours adequate access to sunlight and views;
- c) Preserve established tree and vegetation corridors;
- d) Provide adequate separation between buildings to protect adjoining buildings from overlooking and loss of amenity; and
- e) Reduce the visual bulk of new building work.

2.3.4 Private Open Space

- 1) The secondary dwelling must have more than 24m² of usable private open space.
- 2) The private open space area must be more than 4m wide.
- 3) The living area of the secondary dwelling should connect to the private open space areas.

2.3.5 Design and Materials

- 1) Secondary dwellings must complement and enhance the primary dwelling on site by interpreting and translating any positive characteristics found on site in terms of construction, façade design and materials.
- 2) Metal or corrugated iron materials should be avoided, with the exceptions of roofs.
- 3) External building materials and their colours should be compatible with the character of the locality.

2.3.6 Facilities

- 1) As a minimum, the secondary dwelling should include:
 - a) A kitchen/kitchenette;
 - b) A bathroom;
 - c) A living room; and
 - d) A bedroom.
- 2) A common laundry may be provided to service both the principal and secondary dwellings.

2.4 Multi Dwelling Housing

The following developments are covered by this section:

- a) multi dwelling housing development; and
- b) alterations and additions to existing multi dwelling housing development

This section provides specific controls for multi dwelling housing in addition to the general controls elsewhere in this DCP.

2.4.1 Residential Character

A. Background

The residential character of any neighbourhood is determined by:



- 1) Location and density of development:
 - a) proximity to busy centres or major roads;
 - b) residential density and mix of housing types;
 - c) proximity to heritage precincts;
 - d) frontage to public parks.



- 2) The local landscape and its configuration:
 - a) flat or sloping;
 - b) well-vegetated or cleared;
 - c) frontages to streams or the Nepean River.



- 3) Predominant patterns of planning and design
 - a) displayed by local buildings and their gardens;
 - b) setbacks and building separation;
 - c) height, scale and bulk;
 - d) garaging;
 - e) articulated forms and varied plantings.

2.4.2 Preferred Configuration for New Dwellings

A. Objectives

- a) New multi dwelling housing development should adopt key features of established suburban design.
- b) Dwellings, their entrances and private courtyards look towards the street, or to the rear boundary.

B. Controls

- 1) New multi dwelling housing development should incorporate the traditional configuration of the cottages and cottage gardens that define the character of Penrith's established neighbourhoods, because:
 - a) Traditional development demonstrates social and urban design benefits, particularly the orientation of dwellings and their private open spaces towards the street rather than overlooking neighbouring dwellings and gardens;
 - b) Patterns of buildings and private gardens in established neighbourhoods have visual and symbolic richness that are valued by their community;
 - c) the use of traditional features softens the popular perception that redevelopment is changing the traditional character of Penrith City.
- 2) Within the relevant zones, established development is detached buildings or semi-detached pairs which are:
 - a) separated from one another by landscaped courtyards;
 - b) stepped floor plans and projecting verandahs;
 - c) capped by a variety of pitched roofs.
- 3) Within the relevant zones, established development provides a "green corridor" of trees and shrubs along the rear boundary:
 - a) conserving remnant vegetation; and

- b) providing new shelter and habitat; and
 - c) contributing to streetscape.
- 4) Within the relevant zones, established development provides a front garden setback which may be filled by verandahs and private garden-courts (as shown in Figure D2.11):
- a) encourages active use by residents;
 - b) provides for attractive front gardens.
- 5) Within the relevant zones, established development provides parking areas which are concealed from the street and consequently avoids the appearance of "garage architecture".

Figure D2.11



How much floor space is appropriate to your site?

2.4.3 Development Site

A. Objectives

- a) Identify planning and design options that are appropriate to the shape and size of each development lot, and to the location of neighbouring buildings.
- b) Identify planning and design responses that address impacts on surrounding streetscapes.

B. Controls

- 1) A minimum lot frontage and lot width of 22m is required for multi dwelling housing development within the following zones:
 - a) the R3 Medium Density Residential Zone
 - b) the R4 High Density Residential Zone
- 2) Where an adjoining property with a frontage of under 22m is likely to be isolated by a proposed development, applicants should provide documentation which demonstrates that a reasonable attempt has been made to purchase and incorporate the isolated site.

- 3) If a property has been isolated by adjacent development despite Development Site control 2, development applications for multi-dwelling housing will be considered on a merits basis.
- 4) For the purposes of calculating lot size and lot width, the lot does not include the area of any access corridor or right-of-carriageway.

2.4.4 Urban Form

A. Objectives

New buildings should show characteristics of traditional suburban development: dwellings oriented to face the street, building forms stepped or articulated, and integrated with the shape of surrounding garden areas.

B. Controls

- 1) For dwellings fronting the street, adopt a traditional orientation:
 - a) living rooms, verandahs and the paths to entrances face the street rather than neighbouring properties; and
 - b) private gardens fill the front setback area; and
 - c) garages are concealed behind dwellings.
- 2) Dwellings behind the street frontage should adopt similar principles:
 - a) living rooms and entrances face the street, and / or the landscaped rear boundary setback; and
 - b) private gardens fill the rear setback area.
- 3) Avoid "gun-barrel" style developments with long rows of attached dwellings, long straight driveways and rows of uniform width garden courtyards:
 - a) break buildings into separate blocks, each one not longer than 20m;
 - b) provide "open space corridors" between buildings at least 4m wide across each site (this does not include front/rear setback areas);
 - c) a combination of garden areas and parking courtyards; or
 - d) open parking spaces that are lined by an "avenue" of shady, overhanging trees;
 - e) along common driveways, step the alignment of buildings, and / or their external walls plus eaves;
 - f) at the head of common driveways, a distinctive building or landscape feature should terminate the vista from the street.
- 4) "Articulate" building forms by design measures that cast deep shadows:
 - a) separate neighbouring buildings by irregularly-shaped garden courts that are at least 3m wide;
 - b) external walls should not be longer than 5m between distinct corners;
 - c) the upper storey surrounded by a larger ground floor plan that incorporates projecting rooms, shady verandahs and carports;
 - d) use a variety of roof forms and pitches;
 - e) include windows in every elevation.

2.4.5 Front and Rear Setbacks

A. Objectives

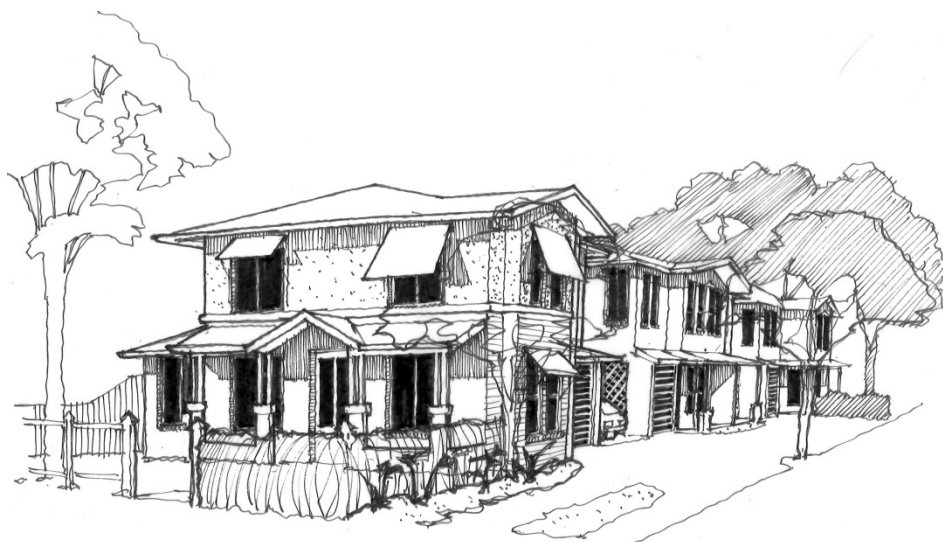
Setbacks are to reflect the character of established garden suburbs, and provide for development of flora and fauna corridors.

B. Controls

- 1) Determine the maximum development footprint for your site:
 - a) The minimum rear setback for a single storey building (or any single storey component of a building) is 4m.
 - b) The minimum rear setback for a two storey building (or any two storey component of a building) is 6m.
 - c) adopt a front setback that matches the neighbourhood character.
- 2) Within the rear boundary setback:
 - a) there shall be no building encroachments either above or below ground (eaves excepted);
 - b) maximise the amount of undisturbed soil, encouraging rapid growth of healthy trees and shrubs;
 - c) where there are physical encumbrances such as open drains, increase the setback accordingly.
- 3) Determine an appropriate front setback:
 - a) either average the setbacks of the immediate neighbours; or
 - b) a 5.5m minimum whichever is the greater dimension.
- 4) Permissible encroachments within the front setback are:
 - a) verandahs and pergolas only which are a 4.5m minimum setback to the face of the verandah or pergola; and maximum 50% of elevation.
- 5) Garages and parking spaces are not permissible within the front setback.

Figure D2.12 illustrates these features.

Figure D2.12: Multi Dwelling Housing Development



2.4.6 Building Envelope and Side Setbacks

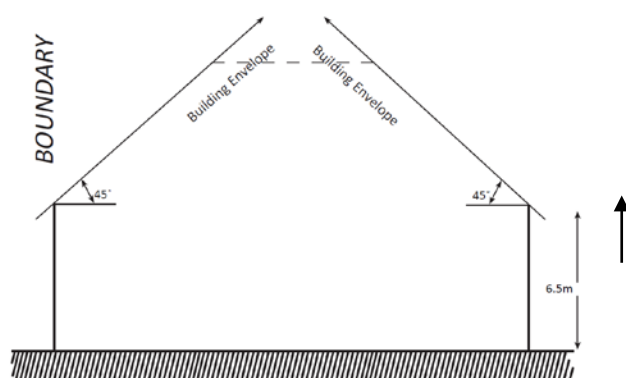
A. Objectives

Comply with building envelope controls, minimise disturbance to existing topography and natural soil-profiles, and provide for reasonable landscaped separation between neighbouring buildings.

B. Controls

- 1) Development is to comply with the building envelope for the site. The building envelope means a height plane over the site at 45 degrees from a specified height above natural ground level at the side boundaries of the site, as shown in Figure D2.13.

Figure D2.13: The building envelope is measured from natural ground level perpendicular to the side boundary at any given point along the wall.



- 2) The building envelope shall be measured relative to:
 - a) Side boundaries only; and
 - b) Existing ground level.

- 3) Only minor encroachments through the building envelope shall be permitted:
 - a) eaves to main roofs
 - b) chimneys and antennas
 - c) pergolas.
- 4) Cut and fill and maximum ground floor heights:
 - a) on sloping sites provide stepping building platforms in line with existing topography with floors no higher than 1m above natural ground level;
 - b) restrict cut-and-fill to a maximum of 500mm; and
 - c) provide effective sub-soil drainage.
- 5) Pitches for main roofs are not to be in excess of 25 degrees in order to reduce the visual bulk of the building.
- 6) Provide reasonable separation and landscaping between neighbouring buildings, consistent with the following parts of this section:
 - a) Driveways and parking
 - b) Landscaped area
 - c) Solar planning; and
 - d) Privacy and outlook.
- 7) Setbacks from side boundaries should be varied to articulate walls to side boundaries:
 - a) a minimum setback of 2m, but only
 - b) along not more than 50% of any boundary.
- 8) Zero setbacks from the side boundary are not permissible except for single garages or carports with an open appearance according to - Garage design, not taller than 2.1 m at the boundary.

2.4.7 Driveways and Parking Areas

A. Objectives

Provide on-site parking at a level that encourages use of public transport. Minimise the area required for parking, encourage convenient parking, allow easy access to parking areas and maximise the area available for landscaping and gardens.

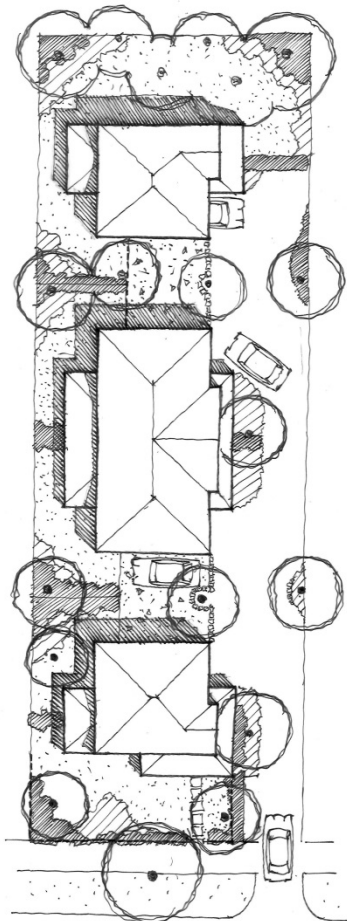
B. Controls

- 1) Provide on-site parking in accordance with the parking section of this DCP.
- 2) Driveways should:
 - a) have a minimum paved width of 3m providing one-way movement;
 - b) incorporate passing-bays and queue space at the street frontage where more than 5 dwellings are served, and driveways are longer than 30m;
 - c) minimise the paved area within the front setback;
 - d) be separated from dwellings by a landscaped verge at least 1m wide;
 - e) where possible, also separated from boundary fences by a landscaped verge;
 - f) prevent adverse long-term effect upon any vegetation that must be preserved;

- g) provide for effective and healthy landscaping along all site boundaries;
 - h) provide for landscaping as continuous verges along both sides, or as a verge beside dwellings with plantings in pavement cut-outs along a boundary fence;
 - i) drain by gravity to Council's stormwater network.
- 3) Garages and parking spaces should:
- a) not be located in the front setback;
 - b) should not directly face the street;
 - c) be setback at least 6.5m from the outside driveway kerb.
- 4) Basement carparking may be permitted on development lots with a minimum lot frontage of 22m.

Figure D2.14 illustrates the key features required for driveway and parking areas.

Figure D2.14: Aerial illustration of multi dwelling housing



2.4.8 Landscaped Area

A. Objective

Retain a reasonable proportion of each site for landscaped garden areas, conserve significant existing vegetation, and provide reasonable separation between neighbouring dwellings.

B. Controls

1) Landscaped areas should provide:

- a) effective separation between neighbouring dwellings;
- b) healthy growth of new trees and shrubs;
- c) long-term survival of existing vegetation required by Council to be preserved;
- d) private courtyards for all dwellings and a green outlook;
- e) front gardens that contribute to an attractive streetscape; and
- f) where more than 10 dwellings are proposed, a centrally located communal open space area that is accessible and available to all residents of the development, comprising 10% of the minimum landscaped area requirement.
- g) The area of common open space proposed can be reduced where larger areas of private open space are provided for individual dwellings. Where there is no common open space proposed private courtyards must be a minimum of 40m².

2) Landscaped area must meet the following requirements:

a) Landscaped areas should be:

Zone	Minimum landscaped area % of the site
R1 Residential General	40
R3 Medium Density Residential	40
R4 High Density Residential	35

- b) have a minimum width of 2m – with no basement encroachment; and containing unexcavated soil to promote landscaping that is effective and healthy;
- c) may include terraces and patios located not higher than 0.5m above ground and pedestrian pathways to building and dwelling entrances;
- d) do not include substantially-paved areas such as buildings, driveways and covered garages;
- e) should include verges that surround car parking areas and open driveways;
- f) should provide a reasonable area of private open space in accordance with the part within this section on design;
- g) where more than one building is proposed, that part of any easement exceeding 10% of the site area shall not be included in the landscaped area calculation.

2.4.9 Solar Planning

A. Objectives

- a. Improve the energy efficiency of dwellings and achieve a high standard of residential amenity.
- b. To ensure adequate residential amenity through the provision of sunlight access and good solar amenity to the living spaces and private open space areas of dwellings.
- c. To recognise the reasonable expectation for a dwelling to have the ability to access sunlight.

B. Controls

- 1) The applicant must demonstrate that dwellings meet acceptable solar standards and that existing neighbouring and proposed private open spaces receive adequate solar access by:
 - a) Providing shadow diagrams prepared by a qualified technician for all two-storey buildings and additions;
 - b) Illustrating the impacts of proposed development upon existing neighbouring dwellings and their open space areas;
 - c) Demonstrating shadows cast by neighbouring buildings;
 - d) Maximising potential for solar gain by placing windows in all exterior walls that are exposed to northern sun;
 - e) Ensuring that the proposed development provides a minimum of 4 hours sunlight between 9am and 3pm on 21 June, to living zones (ie areas other than bedrooms, bathrooms, kitchen and laundry) of each dwelling, and the living zones of any adjoining dwellings;
 - f) Ensuring that the proposed development provides a minimum of 3 hours sunlight between 9am and 3pm on 21 June, to 40% of the main private open spaces of the dwelling and main private open spaces of any adjoining dwellings;
 - g) In situations where the existing overshadowing by buildings and fences reduces sunlight to less than the minimums noted above, the development is to not further reduced sunlight to the specified areas by more than 20%.
 - h) Applications shall include: shadow diagrams for two-storey buildings or additions prepared by a qualified technician for 9am, 12 noon and 3pm on June 21 and any other time required by Council.

Urban design

2.4.10 Significant Townscapes and Landscapes

A. Background

- 1) Across Penrith, there are many significant townscape precincts, including:
 - a) heritage conservation areas of Lemongrove and Derby Street;
 - b) the Warwick Street neighbourhood;
 - c) the "Duration Cottages" in St Marys;
 - d) surrounding Cook Park, St Marys South; and

- e) other areas identified in the Penrith Heritage Study.
- 2) Across Penrith, there are many significant landscape precincts including:
 - a) footslopes to the escarpment in Emu Heights and Leonay;
 - b) wooded hillsides in St Marys South;
 - c) individual streetblocks, such as the block surrounded by Derby, Lethbridge, Doonmore and Evan Streets;
 - d) frontages to the Nepean River;
 - e) Cranebrook escarpment; and
 - f) Chapman Gardens.

B. Objectives

In areas of particular significance to urban conservation, environmental character, new development should demonstrate detailed design measures that protect and complement heritage significance or character.

C. Controls

- 1) In neighbourhoods with townscape significance, new development should:
 - a) conserve vegetation that has visual or historical significance;
 - b) adopt the prevailing configuration of garden areas, particularly the street's predominant front boundary set-back;
 - c) adopt the predominant width, height, and scale of existing buildings;
 - a) ensure that floor plans are stepped or articulated similar to the shape or form of surrounding buildings;
 - b) adopt roof pitches, ceiling heights and forms that match neighbouring buildings;
 - c) minimise the width and area of driveways visible from public frontages;
 - d) conceal garages from public frontages (corner sites excepted).
- 2) In areas with significant vegetation:
 - a) aim to preserve established trees as blocks or corridors;
 - b) ensure that the location of buildings and pavements does not affect long term survival of established trees;
 - c) incorporate new plantings that reinforce the visual and habitat values;
 - d) in general, new plantings should be species indigenous to the local soil type, reinforcing visual and habitat values.
- 3) New development should not aim to provide a direct copy of traditional buildings:
 - a) simple detailing of building forms and openings is preferred to the use of "stuck-on" detailing applied to gable ends and verandahs;
 - b) the pitch and form of roofs, and articulation of floor plans are of particular importance;
 - c) frequent use of shadow-casting elements such as verandahs and awnings is important to reduce the scale of long walls;
 - d) traditional proportions for window and door openings should be employed;

- e) use of traditional joinery details for windows, doors and verandahs and fences should be concentrated in elevations that are visible from public places

2.4.11 Corner Sites and Park Frontages

A. Objectives

For allotments facing two streets or adjoining a public park, apply traditional principles of orientation and articulation to both of the public frontages.

B. Controls

- 1) For allotments with a second street frontage, the second frontage should adopt key principles from other parts of this Section including:
 - a) The development site;
 - b) Urban form;
 - c) Landscaped area.
- 2) For corner lots and park frontages:
 - a) the rear and front setbacks may be measured relative to the shortest boundaries;
 - b) living rooms, dwelling entrances and verandahs may face either public frontage;
 - c) building forms should be articulated;
 - d) dormer windows may face either public frontage, and
 - e) the area of driveways visible from public frontages should be minimised.
- 3) For frontages to a second street:
 - a) minimum setback to dwellings and garage entrances should be 5.5m;
 - b) minimum verandah setback should be 3m;
 - c) each building should be no wider than 20m;
 - d) adjacent buildings should be separated by garden corridors at least 2m wide that provide direct access from rear courtyards to the street;
 - e) garden areas facing the street should be landscaped as private courtyards.
- 4) Along park frontages:
 - a) dwellings and private courtyards should face the park;
 - b) minimum dwelling or verandah setback should be 2m, for not more than 50% of the total building elevation;
 - c) each building should be no longer than 20m;
 - d) adjacent buildings should be separated by "open space corridors" at least 5m wide;
 - e) screen plantings are not necessary.

2.4.12 Building Design

A. Objectives

New developments should appear as a collection of single or semi-detached dwellings separated by gardens and ancillary structures, with facades designed to incorporate a variety of materials and shading structures.

A variety of overhanging roofs and projections at ground floor level; a range of materials and finishes; windows inserted into every visible wall; garages concealed to the rear of dwellings

Articulated forms, projecting verandahs and varied finishes facing the side boundary.

B. Controls

- 1) Development should incorporate a variety of architectural features to minimise the apparent scale and bulk of two storey buildings:
 - a) stepped alignment of walls;
 - b) projections in the ground floor plan;
 - c) rooms that extend beyond the upper storey;
 - d) attached verandahs and carports;
 - e) a variety of shadow-casting roofs;
 - f) wide eaves;
 - g) projecting verandahs and awnings;
 - h) pergolas.
- 2) Development should incorporate features that are typical of housing in established areas:
 - a) stepped walls and articulated roof-forms;
 - b) windows and doors inserted into all visible walls;
 - c) a variety of materials including lightweight cladding and brickwork both face and painted.
- 3) Variety in architectural features should be apparent in all visible facades:
 - a) facing the street;
 - b) facing side driveways; and
 - c) facing neighbouring residential properties.

2.4.13 Energy Efficiency

A. Objectives

Dwellings shall be configured and constructed to minimise the energy required for space heating, cooling or lighting.

B. Controls

- 1) All new multi dwelling housing development should employ construction techniques that provide appropriate thermal mass such as:
 - a) ground floor: slab-on-ground;

- b) walls: masonry internal walls to ground floor are desirable.
- 2) All new two storey townhouse development should provide effective insulation including:
 - a) roofs and top-floor ceilings: sarking and batts with a minimum total rating of R3;
 - b) walls: sarking and batts with a minimum total rating of R1.5
- 3) All new multi dwelling housing development should adopt an appropriate orientation for rooms and windows including:
 - a) living areas - facing within 30 degrees of solar north is desirable;
 - b) windows - at least 50% of glazing facing solar north is desirable, unprotected glazing facing east, west or south shall be avoided and for every habitable room, windows in two external walls are desirable;
- 4) Where multi dwelling housing development cannot achieve the desired orientation, higher compliance with other energy efficiency standards shall be achieved.
- 5) All new multi dwelling housing development should provide effective shading from summer sun including:
 - a) Overhanging eaves: at least 450mm wide;
 - b) Adjustable exterior shading devices for windows and doors to habitable rooms, and to skylights;
 - c) Pergolas over courtyards.
- 6) All new multi dwelling housing development should employ effective glazing including:
 - a) for any large south-facing window: high performance glass e.g. double glazing in thermal break frames;
 - b) windows and doors facing east, south or west: high performance glass e.g. Double glazing in thermal break frames;
 - c) all windows and external doors: weather-stripping should be used.
- 7) All new multi dwelling housing development should adopt a configuration for dwellings that promotes cross-ventilation including:
 - a) living areas and bedrooms with two external walls for windows;
 - b) particularly important for attic rooms.

2.4.14 Design of Dwellings and Private Courtyards

A. Objectives

Dwellings and their private courtyards should achieve high levels of amenity, and demonstrate traditional practices of suburban design.

B. Controls

- 1) A reasonable area of private open space should be provided for each dwelling:
 - a) a minimum of 25m²;
 - b) including one area measuring at least 5m by 4m, suitable for outdoor dining; and
 - c) located immediately beside, and level with, living or dining rooms; and
 - d) also incorporating an area for outdoor clothes-drying at least 2m wide, exposed to sunlight and breeze, screened from view by a fence or wall at least 1.8m tall; and

- e) with access direct to the street or common driveway;
 - f) through a courtyard at least 2m wide; or
 - g) via a carport with an open design.
- 2) Landscaped areas should maximise the area available for private courtyards and gardens:
- a) the front and rear boundary setbacks should be used for private gardens,
 - b) common open space should be restricted to driveway verges.
- 3) Rooms within a villa development should have dimensions and an area that:
- a) can accommodate the range of furniture typically associated with their function; and
 - b) recognise that furnishing options may be restricted by the location of windows and doors;
 - c) acknowledge that access and furnishing options may be restricted by raked attic ceilings;
 - d) provide flexibility to meet the needs of future occupants: for example home business activities and aged residents.

2.4.15 Garage Design

A. Objectives

Garages should be designed to serve a variety of purposes, and their appearance should contribute to the overall diversity of building form and design.

B. Controls

- 1) Garage and parking areas should be planned to:
- a) minimise disruption to traditional or established streetscapes by concealing from the street;
 - b) provide flexible accommodation for vehicles, domestic pets, storage, and covered areas for outdoor recreation;
 - c) minimise transmission of noise to adjoining dwellings;
 - d) provide secure parking;
 - e) allow for maintenance access to rear garden courtyards; and
 - f) provide for effective and healthy landscaping along verges and boundaries.
 - g) permit all turning movements, full opening of vehicle doors as defined by AS 2890.1-1993;
- 2) Basements should have:
- a) a low appearance, rising no higher than 1.5m above ground;
 - b) natural ventilation, either screen walls; or terraced embankments, with each step a maximum of 500mm, and landscaped as part of the side boundary court;
 - c) a "capping" of private courtyards or balconies opening from the lowest level of dwellings (if basements extend beyond the main building walls);
 - d) vehicle entrances designed to complement the architecture and landscaping of each building;

- e) individual up and down ramps;
 - f) a central median;
 - g) overhung by balcony structures; and
 - h) undercover storage:
 - i) garbage and recycling bins in a secured area located close to the street entrance and detailed according to Council codes; and
 - ii) household items: in secured enclosures for each dwelling, or associated with secured private parking spaces.
- 3) For dwellings that require two spaces:
- a) provide at least one covered space;
 - b) for dwellings located one behind the other: the second space may be an open court facing the side driveway; or
 - c) for paired dwellings facing the street: the second space may be stacked on the driveway in front of the covered space;
 - d) stacked parking is permitted where the second space is supplied between a driveway and another space, stacked spaces are not permitted behind garages.
- 4) Garages and parking spaces are not permissible within the front setback.

Design of covered garages to consider the following:

- a) low, open appearance similar to a wide verandah;
- b) if exposed at the end of a building, enclosed by semi-transparent screens that provide for natural ventilation and effective security (rather than surrounded by masonry walls);
- c) with shutters that have windows, or are semi-transparent screens providing natural ventilation and effective security.

2.4.16 Garden Design

A. Objectives

Gardens should be landscaped according to the function of each area, and should provide a backdrop that is appropriate to each adjacent room.

B. Controls

- 1) The rear boundary setback should provide:
- a) private garden courtyards;
 - b) a corridor of habitat, and a green backdrop that is visible from the street;
 - c) conservation for any existing corridor of mature trees; or
 - d) an interlocking canopy of low to medium-height trees and shrubs;
 - e) predominantly species indigenous to the soils of Penrith City.
- 2) Alongside boundaries, provide:
- a) small-to medium height canopy trees for sun-shading and privacy separation between dwellings;
 - b) within the verges to any common driveway: hedges fronting windows to any dwelling;

- 3) Alongside boundaries within private courtyards provide:
- a) feature plantings of ground covers and shrubs growing to fence height at maturity;
 - b) a level area of well-drained turf, or an alternative water-permeable material such as river pebbles;
 - c) street frontage plantings should provide:
 - d) private gardens for street-front dwellings;
 - e) a civic garden frontage appropriate to the established neighbourhood character; and
 - f) mixed species of trees, shrubs, and accent plantings including flowers and ground covers;
 - g) level areas of well-drained turf; and
 - h) along noisy thoroughfares:
 - i) noise attenuation with an interlocking canopy formed by at least two rows of trees under planted with dense hedges.

2.4.17 Paving Design

A. Objectives

Design driveways and paved areas as attractive and functional components of development, complementing the designs of garden areas and buildings, and providing effective management for stormwater run-off.

B. Controls

- 1) Hard paved surfaces should:
- a) maximise the area available for landscaping and gardens;
 - b) impose no adverse long term effect on any vegetation that Council requires preserved.
- 2) Driveways and associated parking courts should:
- a) provide an attractive "address" for any dwellings without a direct frontage to the street;
 - b) minimise the area and width of driveways along the street-frontage;
 - c) be overlooked by continuously-occupied rooms such as kitchens and living rooms;
 - d) be divided into panels by bands of contrasting materials or pavers;
 - e) provide barrier-free access continuous from the street to the entrance of each dwelling;
 - f) provide for landscaping as continuous verges along both sides, or as a verge beside dwellings with plantings in pavement cut-outs along a boundary fence;
 - g) incorporate materials and a profile that maximise the potential for direct infiltration of rainfall (other than in areas of recognised high soil salinity);
 - h) collect and channel run off into grated sumps located strategically and integrated with the design of surface pavement.
- 3) Courtyard paving should be provided:
- a) at the threshold to each doorway leading from a dwelling: at least 1m wide;
 - b) beneath clothes lines;
 - c) where outdoor storage of garbage bins is proposed;

- d) in the form of widely spaced pavers, or porous unit paving, maximising direct infiltration of rainfall.

2.4.18 Fences and Retaining Walls

A. Objectives

Fences, courtyard walls and boundary retaining walls should be compatible with neighbourhood character, and should be integrated with the design of buildings and garden areas, and provide casual surveillance of public and common areas.

B. Controls

- 1) Fences should be no taller than:
 - a) 1.8m generally; and
 - b) 2.4m on sloping sites, including the height of any retaining wall.
- 2) Fences along boundaries forward of the front building alignment:
 - a) should not be taller than 1.2m, or if taller, of see-through construction;
 - b) should not be constructed of metal panels;
 - c) walls of solid construction and taller than 1.2m (such as courtyard walls) should be set back at least 2m from the front boundary (to allow for landscaping) and should not occupy more than 50% of the allotment width.
 - d) Be sympathetic to the natural setting and character in form, materials and colour
 - e) Maximise natural surveillance from the street to the building and from the building to the street.
 - f) Be structurally adequate, in accordance with the Building Code of Australia, and meets the Dividing Fences 1991.
- 3) Fences along driveways and separating existing multi-unit housing, or fronting a public park should be 1m tall, or if taller, of see-through construction;
- 4) Fences along boundaries around private courtyards should minimise cross-viewing and the transmission of noise;
- 5) Fences along boundaries in any location that can be seen from the street or a public park frontage should not be constructed of metal panels;
- 6) Fences along boundaries fronting noisy thoroughfares:
 - a) solid masonry walls are acceptable to a maximum of 1.8m; and
 - b) incorporating corners and planting beds every 5m;
- 7) Where fencing affects easements or stormwater flow paths:
consult with Council and the relevant authority.
- 8) Fencing of a "see-through" construction includes:
 - a) panels set into a timber frame or between brick piers; where
 - b) any solid base is not taller than 1m; and
 - c) panels are spaced pickets or palings, or lattice.
- 9) Retaining walls:

- a) generally should be no taller than 500mm;
- b) should not cut through roots of any tree required by Council to be preserved;
- c) should be separated from any associated fence by a planter-bed at least 500mm wide, minimising the apparent overall height of fencing;
- d) should provide drainage for any associated planter-bed;
- e) should be separated from any driveway by a landscaped verge at least 500mm wide, to prevent impact damage from vehicles.

2.4.19 Visual and Acoustic Privacy and Outlook

A. Objectives

- a. Provide an outlook from dwellings and their private open space, and achieve levels of acoustic and visual privacy that are reasonable for a residential neighbourhood.
- b. To provide a high level of visual and acoustic privacy for residents and neighbours in dwellings and private open space.
- c. To ensure that building design minimises overlooking problems.

B. Controls

- 1) Demonstrate a package of measures that achieves reasonable privacy:
 - a) for adjacent dwellings: at least 3m between any facing windows, screened by landscaping or other means including courtyard walls, or pergolas to prevent cross viewing from first storey windows;
 - b) dormer windows generally to be oriented to face the street or the rear boundary;
 - c) private courtyards should be screened by pergolas and masonry walls to prevent direct cross-viewing and excessive transmission of noise;
 - i) screening measures, including:
 - ii) offsetting of windows; or
 - iii) oblique orientation for windows; or
 - iv) external screens to windows; or
 - v) courtyard walls and pergolas;
 - vi) note that landscaping (other than established trees and shrubs that are proposed to be retained) should not provide the principal means of screening;
 - vii) rooms other than bedrooms should have any windows facing a driveway screened by landscaped verges at least 2m wide,
 - viii) bedroom windows facing a driveway should be screened by masonry walls at least 1.5m tall located at least 1m from the face of the window;
 - d) for windows of habitable rooms with a direct outlook onto windows of habitable rooms of adjacent dwellings:
 - i. are offset by a distance sufficient to limit views between windows; or
 - ii. have sill heights of 1.7 m above floor level; or
 - iii. have fixed obscure glazing in any part of the window below 1.7 m.

- e) All balconies and decks higher than 800mm above existing ground level shall incorporate privacy measures such as screening or landscape planting.
- 2) Demonstrate measures that protect dwellings from external noise sources:
 - a) windows to ground-level living rooms screened by landscaped verges at least 2m wide,
 - b) within any dwelling, bedrooms should not adjoin the garage or living rooms of a neighbouring dwelling; internally, bedrooms should be segregated and separated from living areas by hallways, stairs or service rooms;
 - c) sound resisting construction of separating walls, floors and windows, in accordance with BCA;
 - d) zoning of dwellings into active living areas and passive sleeping areas, separated by corridors and/or service zones;
 - e) plant and equipment should be effectively screened and located away from sleeping areas;
 - f) along frontages to noisy arterial roads or the rail corridor:
 - g) locate habitable rooms and private open spaces away from noise sources and if required protect with appropriate noise shielding devices.

2.4.20 Safety and Security

A. Objectives

Achieve a high level of passive security within and surrounding dwellings.

B. Controls

- 1) Encourage a sense of community:
 - a) dwelling entrances, the window to at least one continuously-occupied room and private courtyards should face the street and/or a common driveway;
 - b) fences should be designed to facilitate glimpses or filtered views from dwellings and private courts to the street and to driveways.
- 2) Ensure that at least one continuously-occupied room in each dwelling (a kitchen or living room) overlooks:
 - a) the front street;
 - b) driveways and garage forecourts.
- 3) Prevent concealment of intruders by:
 - c) uniform lighting levels across common areas such as driveways;
 - d) planning which does not provide hidden recesses;
 - e) along common pathways: selection of appropriate plant species according to height and density.

2.4.21 Accessibility and Adaptability

A. Objectives

Ensure that dwellings are accessible to persons with impaired sight or partial mobility.

B. Controls

- 1) Demonstrate that planning and design measures do not prevent access by people with disabilities:
 - a) Access pathways should slope gently and evenly, with a non-slip finish and no steps between the street frontage and principal building entrances.
 - b) Stair nosings should have a distinctive colour and texture.
 - c) Dwellings should have:
 - i. Dimensions consistent with AS1428.1-1998 Design for access and mobility and AS4299-1995 Australian Adaptable Housing
 - ii. Hallways at least 1m wide
 - iii. Circulation in bathrooms at least 1m wide.
 - d) The development application must be accompanied by certification from an accredited Access Consultant confirming that the adaptable dwellings are capable of being modified, when required by the occupant, to comply with the Australian Housing Standards AS1428-1998 and AS4299-1995.
 - e) Car parking and garages allocated to adaptable dwellings must comply with the requirements of the relevant Australian Standard regarding parking for people with a disability.
- 2) Demonstrate that dwellings have been designed to meet the needs of an ageing population:
 - a) incorporate design measures which are appropriate to people with disabilities; and
 - b) employ lever-type door handles and traditional cruciform tap-handles; and
 - c) provide for future low-cost modifications to bathrooms:
 - d) future removal of hobs from shower recesses;
 - e) provision for future attachment of grab-rails to walls.
 - f) provide for future low-cost modifications to kitchens including replacement of underbench shelves with drawers & attachment of grab-rails.
 - g) provide appropriate levels and location of lighting.

2.4.22 Storage and Services

A. Objectives

Ensure that each dwelling has reasonable private storage space and waste management areas/facilities, and that meters, service cupboards and aerials are integrated with the design of buildings.

B. Controls

- 1) Provide storage for household items:
 - a) at least 10m³ per dwelling; either
 - b) as cupboard space within the dwelling in addition to wardrobes; or
 - c) within a lockable garage, not encroaching upon the parking space; or
 - d) in weather-proof lockers that are not visible from the street.

- 2) Letter boxes should be provided according to Australia Post specifications:
 - a) adjacent to the front boundary;
 - b) located conveniently for residents entering the site (by car or on foot);
 - c) integrated with the design of landscaped areas, fences and buildings.
- 3) Demonstrate that dwellings have been designed to accommodate home-based telecommunications facilities and information technologies by allowing for:
 - a) additional telephone lines and outlets;
 - b) additional electrical outlets;
 - c) satellite or cable-based reception.

2.5 Residential Flat Buildings

The following developments are covered by this section:

- a) residential flat buildings; and
- b) alterations and additions to existing residential flat buildings.

This section provides specific controls for residential flat buildings in addition to the general controls elsewhere in this DCP.

2.5.1 Residential Character

A. Objective

In established areas new development should be planned and designed to reflect the character of traditional neighbourhoods established prior to 1970.

B. Background

The residential character of any neighbourhood is determined by:



1) Location, and density of development:

- a) proximity to busy centres or major roads;
- b) residential density and mix of housing types;
- c) proximity to heritage precincts;
- d) frontage to public parks.



2) The local landscape and its configuration:

- a) flat or sloping;
- b) well-vegetated or cleared;
- c) frontages to streams or the Nepean River.



- 3) Predominant patterns of planning and design
 - a) displayed by local buildings and their gardens;
 - b) setbacks and building separation;
 - c) height, scale and bulk;
 - d) garaging;
 - e) articulated forms and varied plantings.

2.5.2 Preferred Configuration for Residential Flat Buildings

A. Objective

- 1) New residential flat building development should adopt key features of established suburban design.
- 2) Dwellings, their entrances and private courtyards look towards the street, or to the rear boundary.

B. Controls

- 1) New residential flat building development should incorporate the traditional configuration of the cottages and cottage gardens that define the character of Penrith's established neighbourhoods, because:
 - a) Traditional development demonstrates social and urban design benefits, particularly the orientation of dwellings and their private open spaces towards the street rather than overlooking neighbouring dwellings and gardens;
 - b) Patterns of buildings and private gardens in established neighbourhoods have visual and symbolic richness that are valued by their community;
 - c) the use of traditional features softens the popular perception that redevelopment is changing the traditional character of Penrith City.
- 2) Within the relevant zones, established development is detached buildings or semi-detached pairs which are:
 - a) separated from one another by landscaped courtyards;
 - b) stepped floor plans and projecting verandahs;
 - c) capped by a variety of pitched roofs.
- 3) Within the relevant zones, established development provides a "green corridor" of trees and shrubs along the rear boundary:
 - a) conserving remnant vegetation; and

- b) providing new shelter and habitat; and
 - c) contributing to streetscape.
- 4) Within the relevant zones, established development provides a front garden setback which may be filled by verandahs and private garden-courts:
- a) encourages active use by residents;
 - b) provides for attractive front gardens.
- 5) Within the relevant zones, established development provides parking areas which are concealed from the street and consequently avoids the appearance of "garage architecture".

How much floor space is appropriate to your site?

2.5.3 The Development Site

A. Objective

Identify planning and design options that are appropriate to the shape and size of each development lot, and to the location of neighbouring buildings.

B. Controls

- 1) Determine a minimum lot width for residential flat buildings:
 - a) adopt a minimum lot width of 20m in the R4 High Density Residential zone.
- 2) For the purposes of calculating lot size and lot width, the lot does not include the area of any access corridor or right-of-carriageway.

2.5.4. Urban Form

A. Objective

New buildings should show characteristics of traditional suburban development: dwellings oriented to face the street, building forms stepped or articulated, and integrated with the shape of surrounding garden areas.

B. Controls

- 1) For dwellings fronting the street, adopt a traditional orientation:
 - a) living rooms, verandahs and the paths to entrances face the street rather than neighbouring properties; and
 - b) private gardens fill the front setback area; and
 - c) garages are concealed behind dwellings.
- 2) Dwellings behind the street frontage should adopt similar principles:
 - a) living rooms and entrances face the street, and / or the landscaped rear boundary setback; and
 - b) private gardens fill the rear setback area.
- 3) Avoid "gun-barrel" style developments with long rows of attached dwellings, long straight driveways and rows of uniform width side setback:
 - a) step the alignment of all facades – generally one corner and a substantial indentation for every 10m run of wall;

- b) divide buildings into separate wings – a deep indentation located centrally in the longest walls; or a central garden courtyard;
- c) vary the width of side setbacks – a combination of garden courtyards and access ways; and
- d) lined by an “avenue” of shady overhanging trees;
- e) cap the stepped floor plan with a variety of pitched roof forms;
- f) windows should be inserted into every elevation.

2.5.5 Landscaped Area

A. Objective

Retain a reasonable proportion of each site for landscaped garden areas, conserve significant existing vegetation, and provide reasonable separation between neighbouring dwellings.

B. Controls

1) Landscaped areas should provide:

- a) effective separation between neighbouring dwellings;
 - i) healthy growth of new trees and shrubs;
 - ii) long-term survival of existing vegetation required by Council to be preserved;
 - iii) private courtyards for all dwellings and a green outlook;
 - iv) front gardens that contribute to an attractive streetscape; and
 - v) where more than 10 dwellings are proposed, a centrally located communal open space area that is accessible and available to all residents of the development, comprising 10% of the minimum landscaped area requirement.

3) Landscaped area must meet the following requirements:

a) Landscaped areas should be:

Zone	Minimum landscaped area % of the site
R1 Residential General	40
R4 High Density Residential	35

- b) have a minimum width of 2m – with no basement encroachment; and containing unexcavated soil to promote landscaping that is effective and healthy;
- c) may include terraces and patios located not higher than 0.5m above ground and pedestrian pathways to building and dwelling entrances;
- d) do not include substantially-paved areas such as buildings, driveways and covered garages;
- e) should include verges that surround car parking areas and open driveways;
- f) should provide a reasonable area of private open space in accordance with the part within this section on design;

- g) where more than one building is proposed, that part of any easement exceeding 10% of the site area shall not be included in the landscaped area calculation.

2.5.6 Front and Rear Setbacks

A. Objective

Setbacks are to reflect the character of established garden suburbs, and provide for development of flora and fauna corridors.

B. Controls

- 1) Determine the maximum development footprint for your site:
 - a) The minimum rear setback for a single storey building (or any single storey component of a building) is 4m
 - b) The minimum rear setback for a two storey building (or any two storey component of a building) is 6m.
- 2) Within the rear boundary setback:
 - a) there shall be no building encroachments either above or below ground (eaves excepted);
 - b) maximise the amount of undisturbed soil, encouraging rapid growth of healthy trees and shrubs;
 - c) where there are physical encumbrances such as open drains, increase the setback accordingly.
- 3) Determine an appropriate front setback:
 - a) either average the setbacks of the immediate neighbours; or
 - b) 5.5m minimum whichever is the greater dimension.
- 4) Permissible encroachments within the front setback are:
 - a) verandahs and pergolas only which are a 4.5m minimum setback to the face of the verandah or pergola; and maximum 50% of elevation.
- 5) Garages and parking spaces are not permissible within the front setback.

2.5.7 Side Setbacks

A. Objective

Minimise disturbance to existing topography and natural soil-profiles, and provide for reasonable landscaped separation between neighbouring buildings.

B. Controls

- 1) Cut and fill and maximum ground floor heights:
 - a) on sloping sites provide stepping building platforms in line with existing topography with floors no higher than 1m above natural ground level;
 - b) restrict cut-and-fill to a maximum of 500mm; and
 - c) provide effective sub-soil drainage.
- 2) Pitches for main roofs are not to be in excess of 25 degrees in order to reduce the visual scale.

- 3) Zero setbacks from the side boundary are not permissible, other than awnings to main building entrances.

2.5.8 Visual and Acoustic Privacy and Outlook

A. Objective

- a. Provide an outlook from dwellings and their private open space, and achieve levels of acoustic and visual privacy that are reasonable for a medium-density residential neighbourhood.
- b. To provide a high level of visual and acoustic privacy for residents and neighbours in dwellings and private open space.
- c. To ensure that building design minimises overlooking problems.

B. Controls

- 1) Demonstrate a package of measures that achieves reasonable visual privacy between adjacent dwellings:

- a) windows oriented towards their own private garden courtyard; and / or
- b) at least 9m between any windows that face each other; and / or
- c) screening measures, including:
 - i) offsetting of windows; or
 - ii) oblique orientation for windows; or
 - iii) external screens to windows; or
 - iv) courtyard walls and pergolas;

note that landscaping (other than established trees and shrubs that are proposed to be retained) should not provide the principal means of screening;

- d) for windows of habitable rooms with a direct outlook onto windows of habitable rooms of adjacent dwellings:
 - i) are offset by a distance sufficient to limit views between windows; or
 - ii) have sill heights of 1.7m above floor level; or
 - iii) have fixed obscure glazing in any part of the window below 1.7m.

2.5.9 Solar Planning

A. Objective

- a. Improve the energy efficiency of dwellings and achieve a high standard of residential amenity.
- b. To ensure adequate residential amenity through the provision of sunlight access and good solar amenity to the living spaces and private open space areas of dwellings.
- c. To recognise the reasonable expectation for a dwelling to have the ability to access sunlight.

B. Controls

- 1) The applicant must demonstrate that dwellings meet acceptable solar standards and that existing neighbouring and proposed private open spaces receive adequate solar access by:
- a) Providing shadow diagrams prepared by a qualified technician;

- b) Illustrating the impacts of proposed development upon existing neighbouring dwellings and their open space areas;
- c) Demonstrating shadows cast by neighbouring buildings;
- d) Maximising potential for solar gain by placing windows in all exterior walls that are exposed to northern sun;
- e) Ensuring that the proposed development provides a minimum of 4 hours sunlight between 9am and 3pm on 21 June, to living zones (i.e. areas other than bedrooms, bathrooms, kitchen and laundry) of each dwelling, and the living zones of any adjoining dwellings;
- f) Ensuring that the proposed development provides a minimum of 3 hours sunlight between 9am and 3pm on 21 June, to 40% of the main private open spaces of the dwelling and main private open spaces of any adjoining dwellings;
- g) In situations where the existing overshadowing by buildings and fences reduces sunlight to less than the minimums noted above, the development is to not further reduced sunlight to the specified areas by more than 20%.

Urban design

2.5.10 Significant Townscapes & Landscapes

A. Objective

In areas of particular significance to urban conservation, environmental character, new development should demonstrate detailed design measures that protect and complement heritage significance or character.

B. Controls

- 1) In neighbourhoods with townscape significance, new development should:
 - a) conserve vegetation that has visual or historical significance;
 - b) adopt the prevailing configuration of garden areas, particularly the street's predominant front boundary set-back;
 - c) adopt the predominant width, height, and scale of existing buildings;
 - d) ensure that floor plans are stepped or articulated similar to the shape or form of surrounding buildings;
 - e) adopt roof pitches, ceiling heights and forms that match neighbouring buildings;
 - f) minimise the width and area of driveways visible from public frontages;
 - g) conceal garages from public frontages (corner sites excepted).
- 2) In areas with significant vegetation:
 - a) aim to preserve established trees as blocks or corridors;
 - b) ensure that the location of buildings and pavements does not affect long term survival of established trees;
 - c) incorporate new plantings that reinforce the visual and habitat values;
 - d) in general, new plantings should be species indigenous to the local soil type, reinforcing visual and habitat values.
- 3) New development should not aim to provide a direct copy of traditional buildings:

- a) simple detailing of building forms and openings is preferred to the use of "stuck-on" detailing applied to gable ends and verandahs;
- b) the pitch and form of roofs, and articulation of floor plans are of particular importance;
- c) frequent use of shadow-casting elements such as verandahs and awnings is important to reduce the scale of long walls;
- d) traditional proportions for window and door openings should be employed;
- e) use of traditional joinery details for windows, doors and verandahs and fences should be concentrated in elevations that are visible from public places

2.5.11 Corner Sites and Park Frontages

A. Objective

For allotments facing two streets or adjoining a public park, apply traditional principles of orientation and articulation to both of the public frontages.

B. Controls

- 1) For allotments with a second street frontage, the second frontage should adopt key principles from other parts of this section including:
 - a) The development site;
 - b) Urban form;
 - c) Landscaped area;
 - d) Side setbacks.
- 2) For corner lots and park frontages:
 - a) the rear and front setbacks may be measured relative to the shortest boundaries;
 - b) living rooms, dwelling entrances and verandahs may face either public frontage;
 - c) building forms should be articulated for both frontages;
 - d) all fences along public frontages should be designed in accordance with the parts in this section on fences and retaining walls;
 - e) driveway access should be from the shortest street frontage, with garages concealed from both public frontages; and
- 3) For frontages to a second street:
 - a) minimum setback to dwellings and garage entrances should be 5.5m;
 - b) minimum verandah setback should be 3m;
 - c) garden areas facing the street should be landscaped as private courtyards.
 - d) Facing the street corner, the profile of the buildings should be varied with:
 - a) A distinctive roof element; and/or
 - b) Limited encroachments: external walls to corner rooms that measure up to 5 m in width may extend 2m beyond both street front setbacks
- 4) Along park frontages:
 - a) dwellings and private courtyards should face the park;
 - b) minimum dwelling or verandah setback should be 2m, for not more than 50% of the total building elevation;

- c) screen plantings should be employed to conceal driveways and basement parking.

2.5.12 Building Design

A. Objective

New developments should appear as a collection of single or semi-detached dwellings separated by gardens and ancillary structures, with facades designed to incorporate a variety of materials and shading structures.

A variety of overhanging roofs and projections at ground floor level; a range of materials and finishes; windows inserted into every visible wall; garages concealed in basements.

Basement parking enables access from dwellings to private open space, located both at ground level, and/or set upon a podium not higher than 1.5m above ground.

B. Controls

- 1) Development should incorporate a variety of architectural features to minimise the apparent scale and bulk of buildings and to reflect typical features of established cottage developments:
 - a) walls with alignments that step in both plan and section;
 - b) windows and doors inserted into all visible walls;
 - c) a variety of pitched roofs, predominantly hipped.
 - d) lower storeys that project beyond the line of the top storey, and are capped by roofs; or terraces to the upper storey apartments;
 - e) the top storey designed as a "penthouse" with extensive glazing in the form of windows and large doors surrounded by terraces and pergolas;
 - f) a variety of overhangs that cast shadows including:
 - i) roofs with wide eaves;
 - ii) awnings and pergolas;
 - iii) balconies enclosed by corner columns and a variety of balustrades;
 - iv) wide terraces at ground level;
 - g) variation in building materials, for example:
 - i) a "solid" masonry base;
 - ii) intermediate levels that appear lighter: coloured or painted brickwork, with projecting "screens" of balconies that are located in particular at corners of buildings;
 - iii) a lightweight "penthouse" upper storey, capped by overhanging roofs and open pergolas, with terraces and balconies surrounded by open-style balustrades.
- 2) Variety in architectural features should be apparent in all visible facades including:
 - a) facing the street;
 - b) facing side driveways; and
 - c) facing neighbouring residential properties.
- 3) Basements for car parks should rise no higher than 1.5m above ground provide a minimum 2.2m vertical clearance for vehicles.

2.5.13 Energy Efficiency

A. Objective

Dwellings shall be configured and constructed to minimize the energy required for space heating, cooling or lighting.

B. Controls

- 1) Adopt a configuration for dwellings that promotes cross-ventilation:
 - a) corner apartments with two external walls;
 - b) apartments that sit between two opposite external walls.
- 2) Adopt an appropriate orientation for rooms and windows:
 - a) living areas - facing within 30 degrees of solar north is desirable;
 - b) windows - at least 50% of glazing facing solar north is desirable; unprotected glazing facing east, west or south shall be avoided; for every room, windows in two external walls are desirable;
 - c) where the desired orientation cannot be achieved, higher compliance with other energy efficiency standards shall be achieved.
- 3) Provide effective shading from summer sun and employ effective glazing:
 - a) overhanging eaves: at least 450mm wide;
 - b) external, adjustable screening for windows, doors and skylights to habitable rooms;
 - c) pergolas over courtyards;
 - d) for any large south-facing window:
high performance glass eg. double glazing in thermal break frames;
 - e) windows and doors facing east, south or west: high performance glass eg. double glazing in thermal break frames;
 - f) all windows and external doors: weather-stripping should be used.

2.5.14 Design of Dwellings and Private Courtyards

A. Objective

Dwellings and their private courtyards should achieve high levels of amenity, and demonstrate traditional practices of suburban design.

B. Controls

- 1) Common circulation areas should facilitate access by people carrying parcels and removal of furniture:
 - a) corridors at least 1.2m wide;
 - b) stairs with landings at least 1.2m deep.
- 2) A reasonable area of private open space should be provided for each dwelling:
 - a) for dwellings at ground level:
 - i) a minimum of 20m²;
 - ii) as courtyards at ground level; and / or
 - iii) terraces located not higher than 1.5m above ground level; and

- iv) for street-front dwellings: individual entrances to terraces or courtyards from the street;
- b) for dwellings above ground - balconies that are a minimum of 10m²;
- c) all required open space should include one area:
 - v) measuring at least 2.5m by 2.5m;
 - vi) suitable for outdoor dining; and
 - vii) located immediately next to, and level with, a living or dining room; and
 - viii) incorporating an area for outdoor clothes drying that is visually-screened to a height of at least 1.5m above floor level;
 - ix) Landscaped areas should maximise the area available for private courtyards and gardens.
- 3) Dwellings should have rooms that are planned and oriented:
 - a) to maximise privacy,
 - b) to provide a "green" outlook across open space;
 - c) to facilitate natural ventilation and day lighting.
- 4) Rooms should have dimensions and an area that:
 - a) can accommodate the range of furniture typically associated with their function; and
 - b) recognise that furnishing options may be restricted by the location of windows and doors.

2.5.15 Garages

A. Objective

Garages should be designed to serve a variety of purposes, and their appearance should contribute to the overall diversity of building form and design.

B. Controls

- 5) Garage and parking areas should be planned to:
 - a) minimise disruption to traditional or established streetscapes by concealing from the street;
 - b) provide flexible accommodation for vehicles, domestic pets, storage, and covered areas for outdoor recreation;
 - c) minimise transmission of noise to adjoining dwellings;
 - d) provide secure parking;
 - e) allow for maintenance access to rear garden courtyards; and
 - f) provide for effective and healthy landscaping along verges and boundaries.
 - g) permit all turning movements, full opening of vehicle doors as defined by AS 2890.1-1993;
- 6) Basements should have:
 - i) a low appearance, rising no higher than 1.5m above ground;
 - j) natural ventilation, either screen walls; or terraced embankments, with each step a maximum of 500mm, and landscaped as part of the side boundary court;

- k) a "capping" of private courtyards or balconies opening from the lowest level of dwellings (if basements extend beyond the main building walls);
 - l) vehicle entrances designed to complement the architecture and landscaping of each building;
 - m) individual up and down ramps;
 - n) a central median;
 - o) overhung by balcony structures; and
 - p) undercover storage:
 - iii) garbage and recycling bins in a secured area located close to the street entrance and detailed according to Council codes; and
 - iv) household items: in secured enclosures for each dwelling, or associated with secured private parking spaces.
- 7) For dwellings that require two spaces:
- a) parking may be arranged in a stacked configuration
- 8) Garages and parking spaces are not permissible within the front setback.

2.5.16 Garden Design

A. Objective

Gardens should be landscaped according to the function of each area, and should provide a backdrop that is appropriate to each adjacent room.

B. Controls

- 1) The rear boundary setback should provide:
 - a) private garden courtyards;
 - b) a corridor of habitat, and a green backdrop that is visible from the street;
 - c) conservation for any existing corridor of mature trees; or
 - d) an interlocking canopy of low to medium-height trees and shrubs;
 - e) predominantly species indigenous to the soils of Penrith City.
 - 2) Alongside boundaries, generally provide:
 - a) small-to medium height canopy trees for sun-shading and privacy separation between dwellings;
 - b) within the verges to any common driveway: hedges fronting windows to any dwelling;
 - 3) Along driveway verges and surrounding parking basements:
 - a) screen plantings of small to medium canopy trees;
 - b) beds of continuous ground cover;
 - c) common pathways to building entrances according to the part below on Paving Design
- Street frontage plantings should provide:
- a) private gardens for street-front dwellings;
 - b) a civic garden frontage appropriate to the established neighbourhood character; and

- c) mixed species of trees, shrubs, and accent plantings including flowers and ground covers;
- d) level areas of well-drained turf; and
- e) along noisy thoroughfares:
 - i) noise attenuation with an interlocking canopy formed by at least two rows of trees under planted with dense hedges.

2.5.17 Paving Design

A. Objective

Design driveways and paved areas as attractive and functional components of development, complementing the designs of garden areas and buildings, and providing effective management for stormwater run-off.

B. Controls

- 1) Hard paved surfaces should:
 - a) maximise the area available for landscaping and gardens;
 - b) impose no adverse long term effect on any vegetation that Council requires preserved.
- 2) Generally paving should:
 - a) provide an attractive "address" for any dwellings without a direct frontage to the street;
 - b) minimise the area and width of driveways along the street-frontage;
 - c) be overlooked by continuously-occupied rooms such as kitchens and living rooms;
 - d) be divided into panels by bands of contrasting materials or pavers;
 - e) provide barrier-free access continuous from the street to the entrance of each dwelling;
 - f) provide for landscaping as continuous verges along both sides,
 - g) collect and channel run off into grated sumps located strategically and integrated with the design of surface pavement.
 - h) Incorporate outdoor storage of garbage bins awaiting collection.

2.5.18 Fences and Retaining Walls

A. Objective

Fences, courtyard walls and boundary retaining walls should be compatible with neighbourhood character, and should be integrated with the design of buildings and garden areas, and provide casual surveillance of public and common areas.

B. Controls

- 1) Fencing must:
 - a) Be structurally adequate, in accordance with the Building Code of Australia, and meets the *Dividing Fences Act 1991*.
 - b) Be sympathetic to the natural setting and character in form, materials and colour;
 - c) Maximise natural surveillance from the street to the building and from the building to the street.
- 2) Fences should be no taller than:

- a) 1.8m generally; and
 - b) 2.4m on sloping sites, including the height of any retaining wall.
- 3) Fences along boundaries forward of the front building alignment:
- a) should not be taller than 1.2m, or if taller, of see-through construction;
 - b) should not be constructed of metal panels;
 - c) walls of solid construction and taller than 1.2m (such as courtyard walls) should be set back at least 2m from the front boundary (to allow for landscaping) and should not occupy more than 50% of the allotment width.
- 4) Fences along driveways and separating existing multi-unit housing, or fronting a public park should be 1m tall, or if taller, of see-through construction;
- 5) Fences along boundaries around private courtyards should minimise cross-viewing and the transmission of noise;
- 6) Fences along boundaries in any location that can be seen from the street or a public park frontage should not be constructed of metal panels;
- 7) Fences along boundaries fronting noisy thoroughfares:
- a) solid masonry walls are acceptable to a maximum of 1.8m; and
 - b) incorporating corners and planting beds every 5m;
- 8) Where fencing affects easements or stormwater flow paths: consult with Council and the relevant authority.
- 9) Fencing of a "see-through" construction includes:
- a) panels set into a timber frame or between brick piers; where
 - b) any solid base is not taller than 1m; and
 - c) panels are spaced pickets or palings, or lattice.
- 10) Retaining walls:
- a) generally should be no taller than 500mm;
 - b) should not cut through roots of any tree required by Council to be preserved;
 - c) should be separated from any associated fence by a planter-bed at least 500mm wide, minimising the apparent overall height of fencing;
 - d) should provide drainage for any associated planter-bed;
 - e) should be separated from any driveway by a landscaped verge at least 500mm wide, to prevent impact damage from vehicles.

2.5.19 Safety and Security

A. Objective

Achieve a high level of passive security within and surrounding dwellings.

B. Controls

- 1) Encourage a sense of community:
 - a) Each common stairwell should serve no more than 10 dwellings.
 - b) The public street and /or common pathways should be overlooked by:
 - i) Entrances to dwellings or to ground level; terraces;

- ii) Windows to living rooms, dining rooms and/or kitchens; and
 - iii) Private terraces and balconies
- c) fences should be designed to facilitate glimpses or filtered views from dwellings and private courts to the street and to driveways.
- 2) Ensure that at least one continuously-occupied room in each dwelling (a kitchen or living room) overlooks:
 - a) the front street;
 - b) driveways and garage forecourts.
- 3) Prevent concealment of intruders by:
 - a) uniform lighting levels across common areas such as driveways;
 - b) planning which does not provide hidden recesses;
 - c) along common pathways: selection of appropriate plant species according to height and density.

2.5.20 Accessibility and Adaptability

A. Objective

To provide safe and easy access to buildings to enable better use and enjoyment by people regardless of age and physical condition, while also contribution to the vitality and vibrancy of the public domain.

B. Controls

- 1) Demonstrate that planning and design measures do not prevent access by people with disabilities:
 - a) access pathways should slope gently and evenly, with a non-slip finish and no steps between the street frontage and principal building entrances;
 - b) stair nosings should have a distinctive colour and texture;
 - c) dwellings should have:
 - d) dimensions consistent with AS 1428.1-1998-Design for access and mobility.
 - e) hallways at least 1m wide.
 - f) circulation areas in bathrooms at least 1 m wide.
- 2) Demonstrate that dwellings have been designed to meet the needs of an ageing population:
 - a) incorporate design measures which are appropriate to people with disabilities; and
 - b) employ lever-type door handles and traditional cruciform tap-handles; and
 - c) provide for future low cost modifications to bathrooms:
 - i) future removal of hobs from shower recesses;
 - ii) provision for future attachment of grab-rails to walls.
 - d) provide for future low-cost modifications to kitchens including replacement of under bench shelves with drawers & attachment of grab-rails.
 - e) provide appropriate levels and location of lighting.

- 3) 10% of all dwellings or a minimum one dwelling, whichever is greater, must be designed in accordance with the Australian Adaptable Housing Standard (AS4299-1995), to be capable of adaptation for people with a disability or elderly residents.
- 4) Where possible, the mandatory adaptable dwellings shall be located on the ground floor.
- 5) The development application must be accompanied by certification from an accredited Access Consultant confirming that the adaptable dwellings are capable of being modified, when required by the occupant, to comply with the Australian Housing Standard (AS4299-1995).
- 6) Car parking and garages allocated to adaptable dwellings must comply with the requirements of the relevant Australian Standard regarding parking for people with a disability.

2.5.21 Storage and Services

A. Objective

Ensure that each dwelling has reasonable private storage space and waste management areas/facilities, and that meters, service cupboards and aerials are integrated with the design of buildings.

B. Controls

- 1) Provide storage for household items:
 - a) at least 10m³ per dwelling; either
 - b) as cupboard space within the dwelling in addition to wardrobes; or
 - c) within a lockable garage, not encroaching upon the parking space; or
 - d) in weather-proof lockers that are not visible from the street.
- 2) Letter boxes should be provided according to Australia Post specifications:
 - a) adjacent to the front boundary;
 - b) located conveniently for residents entering the site (by car or on foot);
 - c) integrated with the design of landscaped areas, fences and buildings.
- 3) Demonstrate that dwellings have been designed to accommodate home-based telecommunications facilities and information technologies by allowing for:
 - a) additional telephone lines and outlets;
 - b) additional electrical outlets;
 - c) satellite or cable-based reception.

2.6 Non Residential Developments

The following developments are covered by this section:

- a) Any proposed non residential development proposed in a residential zone.

This section provides specific controls for non residential development in residential zones in addition to the general controls elsewhere in this DCP.

A. Objectives

Non-residential development should be planned and designed according to principles of traditional suburban design, and to preserve the amenity of residential neighbourhoods.

B. Controls

- 1) Principles of urban form and urban design that apply to permissible residential development should be adopted for non-residential development.

- 2) Particular attention should be paid to:

The development site including front setbacks, rear setbacks dual frontage situations.

- a) Urban form including:

- i) traditional building design features;
- ii) traditional garden frontages;
- iii) orientation of building entrances;
- iv) continuously occupied rooms facing the street;
- v) detailed consideration of significant townscapes or landscapes;
- vi) signs.

- vii) driveways and parking including:

- provision of on-site parking appropriate to the proposed use, and in accordance with the parking requirements of this DCP;
- minimise site coverage by paved areas;
- conceal garages from views available from public parks and streets;
- locate driveways and parking areas away from any neighbouring residential development;

- b) landscaped area- provision and design of the required minimum area with detailed design of gardens and paving;

- c) side setbacks to provide for effective landscaped separation from adjacent developments;

- d) solar planning and energy efficiency - minimised overshadowing of adjacent properties and minimise requirements for mechanical heating and cooling of interiors;

- e) privacy - protect the amenity of adjacent properties;

- f) storage and building services - sufficient to meet requirements generated by the proposed development and located to protect the amenity of adjacent developments.

- g) privacy – protect the amenity of adjacent properties;

- h) storage and building services – sufficient to meet requirements generated by the proposed development and located to protect the amenity of adjacent residents.

2.7 Proposed Road Pattern Designs

The following developments are covered by this section:

- 1) Development patterns shall be consistent with the road patterns as shown in Figures D2.15 to D2.18:

Figure D2.15: Proposed road pattern for Kohlenberg Close in the vicinity of Brougham Street, Emu Plains

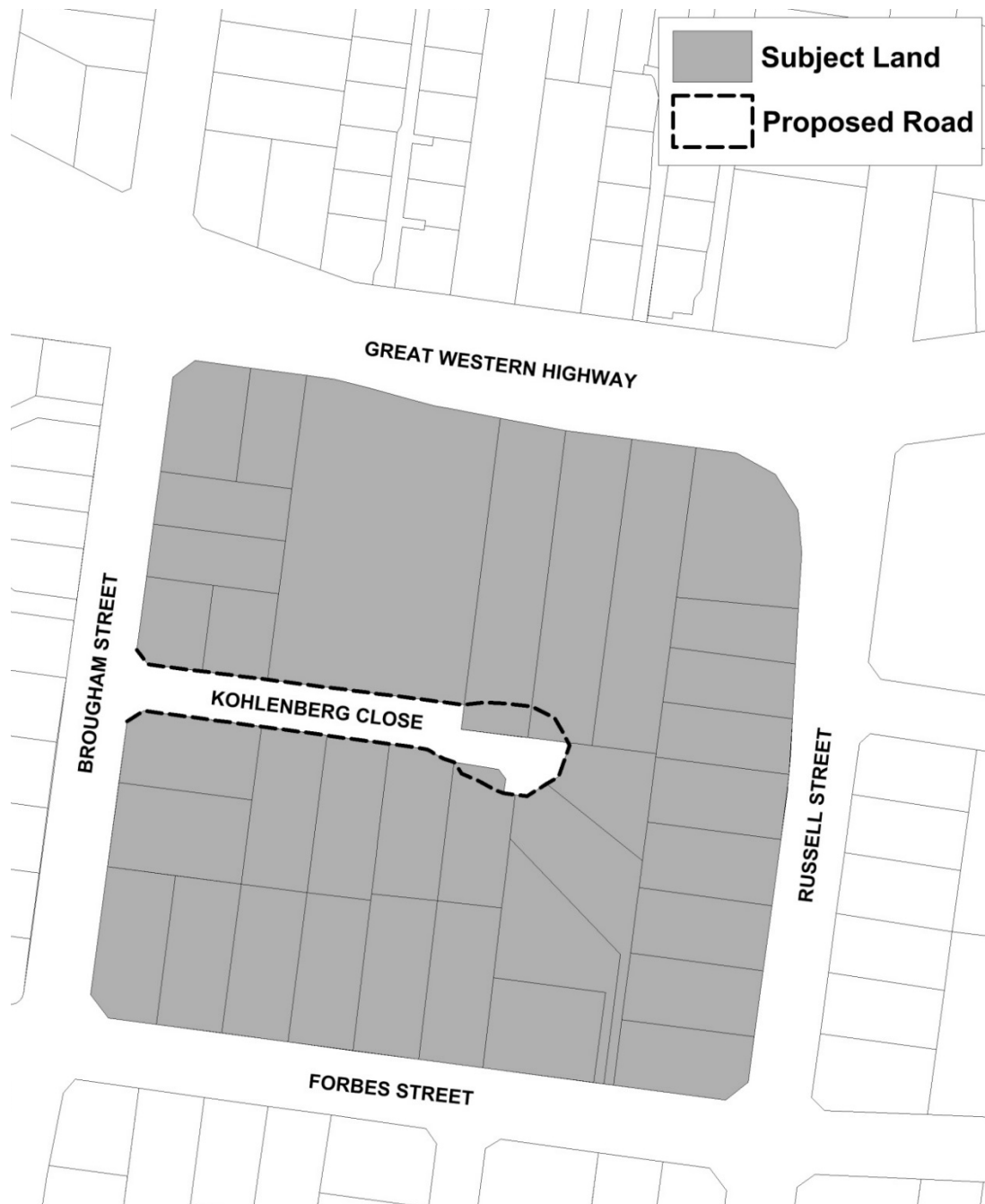


Figure D2.16: Proposed road pattern for Acorn Street in the vicinity of Grey Street, Emu Plains

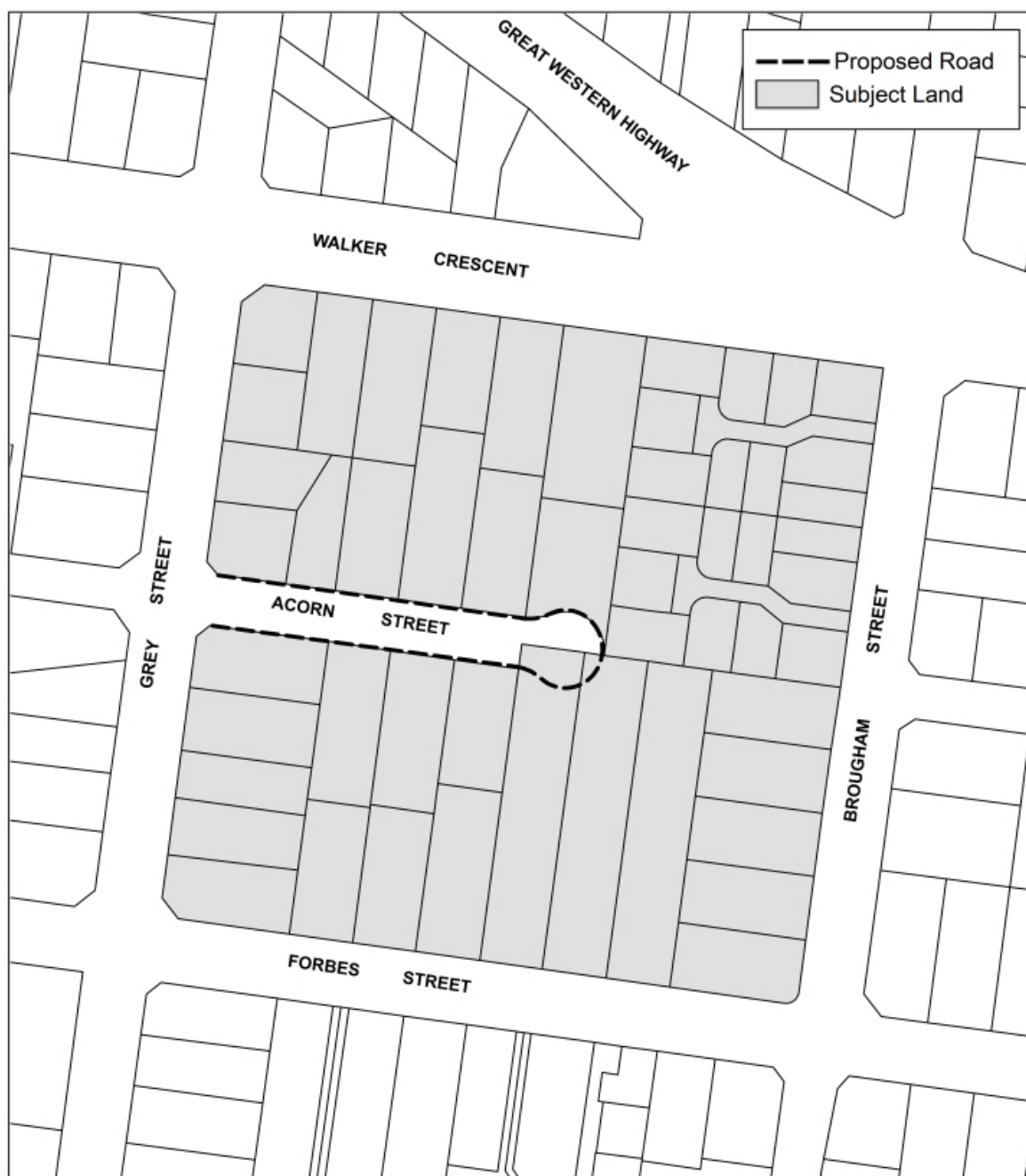


Figure D2.17: Proposed road pattern in the vicinity of Towle Close, Emu Plains

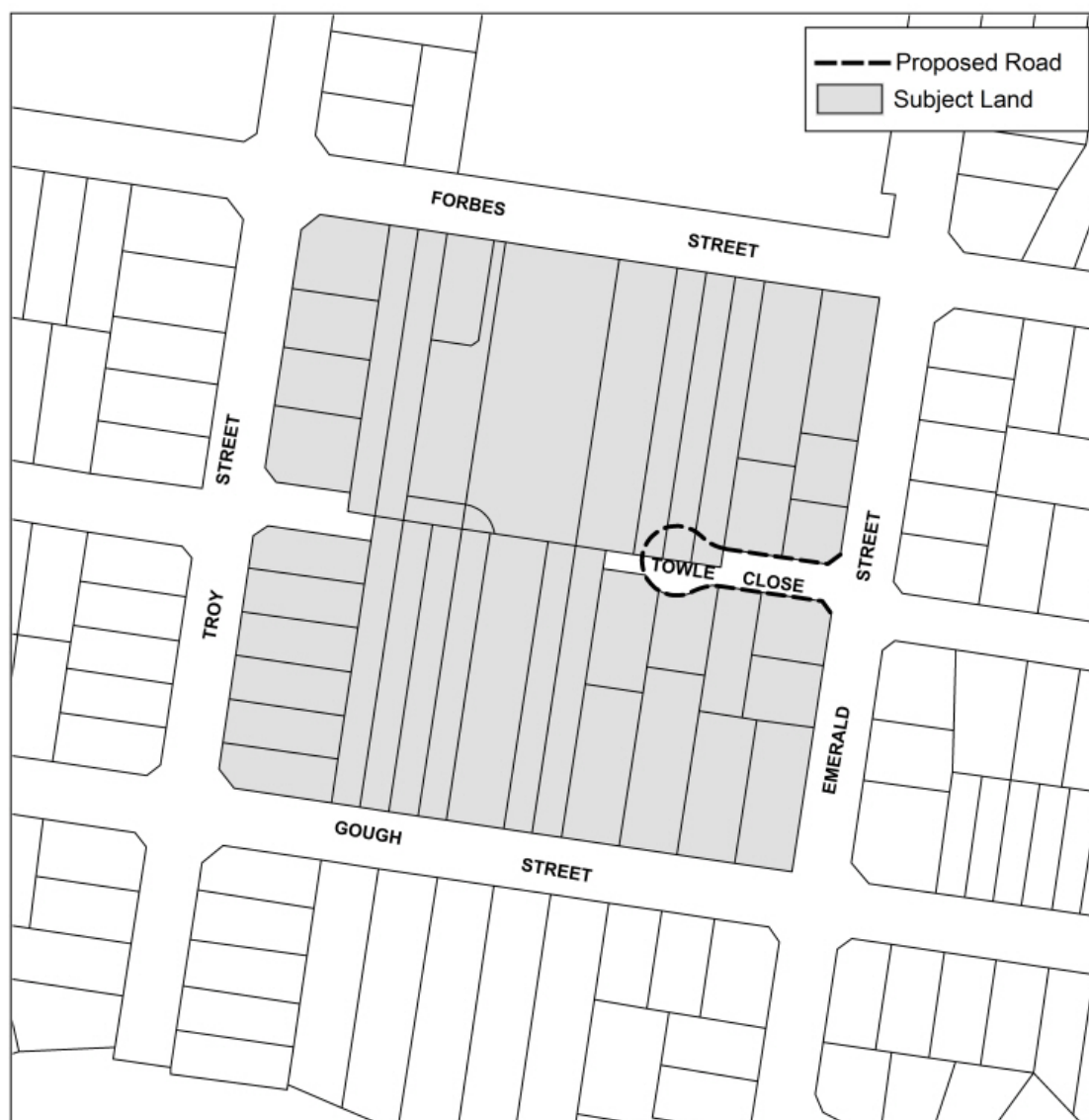


Figure D2.18: Proposed road pattern in the vicinity of Stock Avenue, Kingswood



This section provides specific controls for development where specific road patterns have been identified. In the event of any inconsistency between this section and the rest of this DCP, the requirements of this section prevail.

A. Objectives

- 1) To facilitate the creation and construction of public roads,
- 2) To create a strong nexus between public roads and future development,
- 3) To maintain and enhance the amenity, safety and access of these public roads.

B. Controls

1) Street Frontage

Development on land that abuts a proposed road (as shown in Figure D2.15 to D2.18) shall be oriented to the proposed road and provide pedestrian and vehicular access to the proposed road.

2) Fencing

Any fencing along the frontage to the proposed road must be “see-through” construction and should not be taller than 1.2m.

Fencing of a “see-through” construction includes:

- a) Panels set into a timber frame or between brick piers; where
- b) Any solid base is not taller than 1m; and
- c) Panels are spaced pickets or palings, or lattice.

3) Landscaping

Despite the landscaped area controls contained elsewhere within Section D2 of this Development Control Plan:

A maximum of 10% reduction in the minimum landscaped area requirement may apply to development of the specified sites where an application proposes construction of the proposed road and subsequent dedication of the land.

Table of Contents

D3 COMMERCIAL AND RETAIL DEVELOPMENT	2
3.1 BULKY GOODS RETAILING	2
3.2 SEX SERVICES PREMISES	4
3.3 RESTRICTED PREMISES	10

D3 Commercial and Retail Development

3.1. Bulky Goods Retailing

A. Controls

1) General

- a) The built form is to provide consistent landscaped front setbacks and an active street address.
- b) Where bulky goods developments also comprise ancillary café or service uses, locate these uses within the primary street frontage to generate activity and interest at street level.
- c) Provide pedestrian footpaths on all streets.
- d) Entrances to bulky goods premises must be on the primary street frontage.
- e) Awnings are to be provided at entry points.
- f) Bulky goods developments are to be located on or close to the main street alignment.
- g) Provide consistent street planting and footpaths are to be provided along Blaikie Road to establish the public domain.
- h) Setback areas are to be landscaped, but may incorporate an off-street parking area if it can be demonstrated that the location of the car parking area as illustrated in Figures D3.1-D3.3:
 - i) Is within a setback which is at least 13m wide and set behind a landscaped area which is at least 4m wide;
 - ii) Promotes the function and operation of the development.

2) Vegetation and landscape

- a) The siting and layout of a development should preserve all on-site trees, significant strands of vegetation, and remnant or native bushland in accordance with the requirements of the Vegetation Management and Landscape Design section of this DCP. Where this is not practical, the development application must justify the loss of vegetation and outline what measures are to be taken to replace it.
- b) Applicants should refer to the Landscape Design section of this DCP regarding the implementation and maintenance of landscaping for the site.
- c) Smaller scale and less visually prominent planting should be provided to add variety and interest in the appearance of the site.
- d) Landscape materials should cause minimal detrimental visual impact, and the use of subtle coloured materials and block or brick paving is encouraged.
- e) Paving and structures shall complement the architectural style of existing buildings.
- f) Outdoor staff break areas should be provided and integrated into landscape areas. These areas should be provided with shade and reasonable amenity.
- g) Shade trees should be provided in outdoor staff break areas and along pedestrian paths and walkways.

- h) Plant species should be carefully selected to meet service authority requirements in easement locations.

Figure D3.1: Illustration of Building Setbacks – Smaller Site (Plan View)

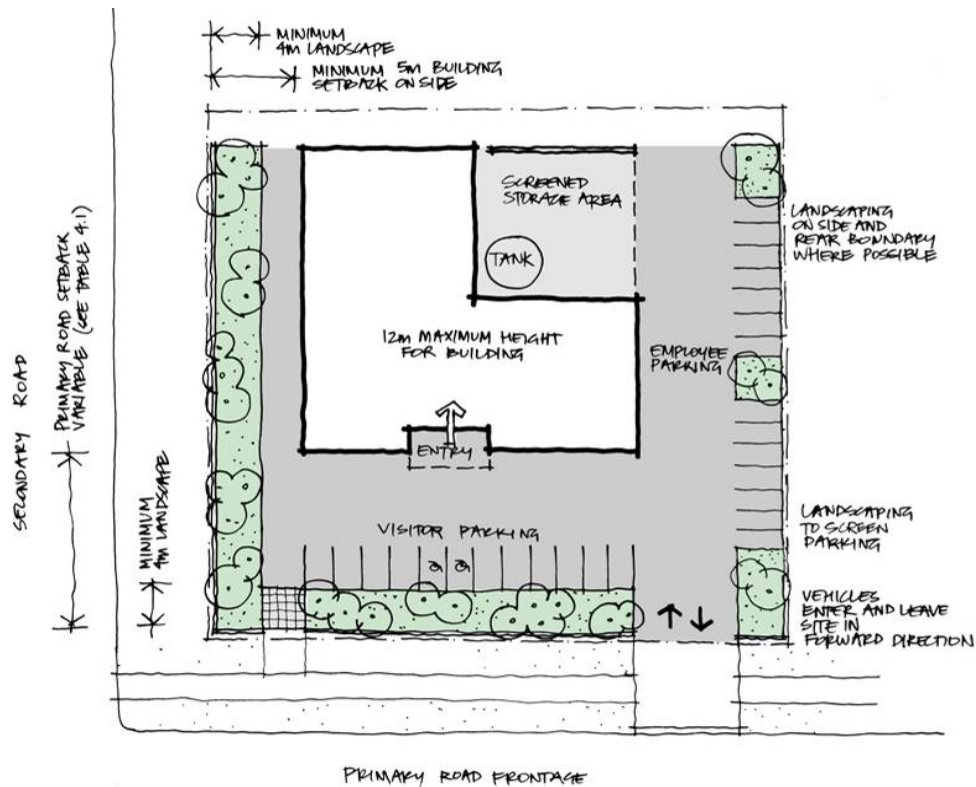


Figure D3.2: Illustration of Building Setbacks – Smaller Site (Cross Section)

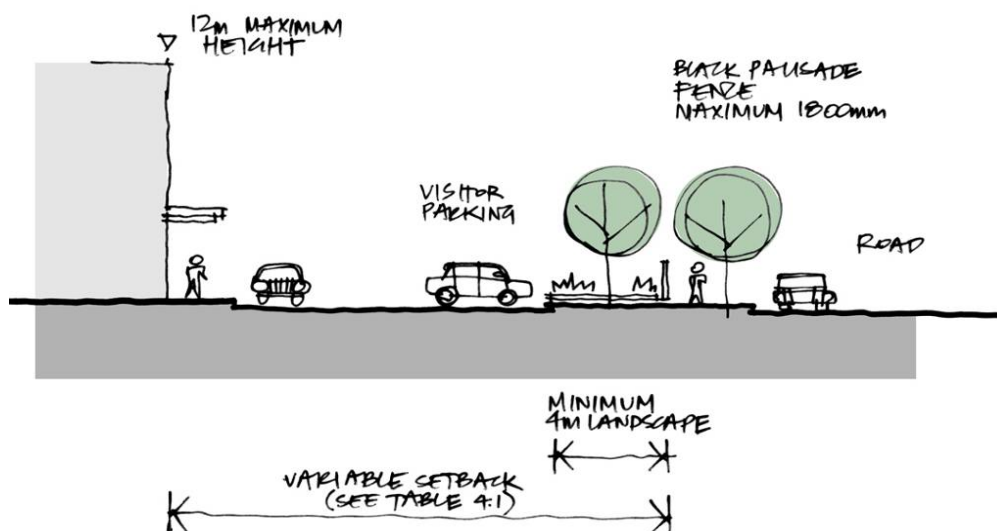
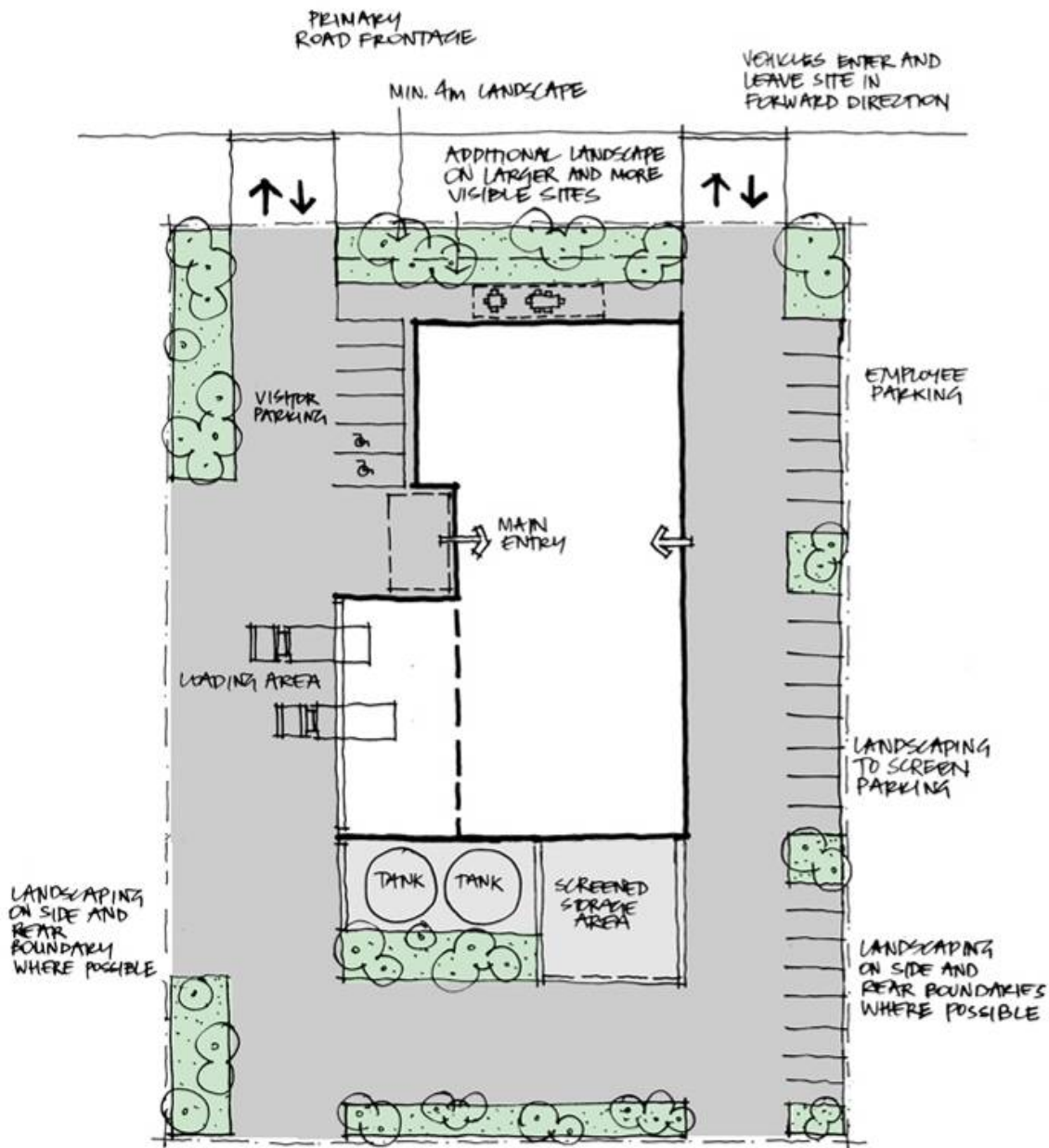


Figure D3.3: Illustration of Building Setbacks – Larger Site (Plan View)



3.2. Sex Services Premises

A. Background

The impact of individual sex services premises can vary in relation to their nature and scale. The concentration of this type of use can also exacerbate negative impacts. The nature of these uses means that specific controls are required to minimise potential impacts on the community and ensure separation from sensitive land uses, such as residences, schools, parks and playgrounds, churches and other places that children may attend for recreational, educational or cultural activities.

The controls in this section seek to reduce negative impacts, while at the same time allow premises to operate in suitable locations and at a suitable scale.

B. Objectives

- a) To ensure that the design and location of sex services premises do not adversely impact on the amenity of the area or neighbouring properties, in particular, land uses that are frequented by children;
- b) To increase the safety of staff and visitors of the sex services premises through the consideration of safety and security aspects in the design and location of premises, and through the provision of appropriate safety measures;
- c) To ensure that the safety of all staff and visitors is maintained when approaching, entering and leaving the premises, including the use of appropriate lighting.
- d) To ensure that sex services premises are accessible to all adult members of the community;
- e) To ensure that the design (including colour, signage and lighting) and external treatment of the sex services premises do not detract from the character and appearance of the streetscape;
- f) To ensure that the interior of the sex services premises, sex workers or sex related products associated with the premises are not visible from outside of the premises;
- g) To ensure that the nuisance to neighbouring properties is minimised through the clear numbering of sex services premises;
- h) To ensure that adequate facilities are provided inside the premises in accordance with relevant occupational health and safety legislation, and provide for the comfort and safety of visitors and staff;
- i) To ensure that the internal layout of the premises maximises the safety and security of staff and visitors;
- j) To ensure that the safety and security of staff and visitors is maintained through the use of security systems and implementation of procedures identified in the Plan of Management;
- k) To ensure that the premises operate in accordance with health standards and any recommended guidelines; and
- l) To ensure compliance with the provisions of the NSW Liquor Act 1982 as it prohibits solicitation or the provision of commercial sexual services on premises having liquor licences.

C. Controls

1) Locational and Access Controls

- a) Sex services premises must not be located:

- i) adjacent to or directly opposite to (including elevation) a sensitive land use unless separated by at least another non-sensitive land use, including a road at least 30 metres wide; or
 - ii) on the same floor or level that contains a dwelling; or
 - iii) in a mixed use development where the primary access to the premises is the same access to the residential floor(s)/ level(s) in that development.
- b) Sex services premises and adult entertainment premises must not be located within a radius of 75m from an existing, approved sex services premises or restricted premises (e.g. adult book store). The radius must be measured from the centre of the primary access to the proposed sex services premises or adult entertainment premises.

Adult entertainment premises is a form of restricted premises that provides entertainment such as strip club premises or premises which sells or displays restricted material but does not include hotel accommodation, a pub, home occupation (sex services) or sex services premises.

- c) Access to and within the sex services premises is to be provided in accordance with the Building Code of Australia and the Commonwealth's Disability Discrimination Act 1992 to ensure that the premises is accessible to all adult members of the community. In this regard, access arrangements must demonstrate:
- i) Major entrances to the premises, to which the public are entitled to enter, must be designed and constructed to provide equitable treatment of staff and visitors; and
 - ii) Compliance with the minimum standards of grade, doorway, width and connectivity in accordance with the *Disability Discrimination Act 1992*.

2) External Design of Premises

- a) The external appearance of the sex services premises should respect the architectural character of the streetscape so that the sex service premises does not become a prominent feature of the street.
- b) The premises must be clearly numbered, with the number clearly visible from the street and/or foyer or hallway.
- c) All entrances and exits to the sex services premises should be designed to facilitate the privacy of staff and visitors without compromising personal safety (through avoiding the use of isolated and poorly lit back lanes).
- d) The sex services premises, including the signage, must not display sex-related products, images considered by Council to be sexually explicit, lewd or offensive, sex workers or nude or semi-dressed staff from windows, doors or outside of the premises. Details of any proposed signage associated with the sex services premises, including its location and design/wording, are to accompany the development application.
- e) The interior of the sex services premises must not be visible from outside of the premises, including from the footpath.
- f) Where the interior of the sex services premises may be visible from neighbouring buildings, adequate measures should be taken to screen the interior of the premises (e.g. window screens and blinds).

3) Internal Design of Premises

- a) Adequate design measures ensuring the safety and security of staff and visitors to the sex services premises must be provided and, where appropriate, should include:
 - i) Reception and visitor assessment areas that incorporate design measures and management procedures to ensure the safety and security of staff and visitors;
 - ii) Minimisation of alcoves and entrapment spaces in its floor layout; and
 - iii) Adequate safety and surveillance systems.

NOTE: Operators must comply with the requirements of the *Workplace Surveillance Act 2005*, which prohibits surveillance of staff in staff facilities and where located elsewhere in the premises, requires notification of staff and provision of adequate signage. Where camera surveillance is used, it must not be focused on or record staff providing sex services on a client. The *NSW Summary Offences Act 1988* makes it an offence to film people for the purposes of sexual arousal when in a state of undress or involved in a sexual act without their consent.

- b) Specialist activities involving restraints (such as bondage, suspension) or equipment (ropes, pulleys, slings, poles, etc) must ensure the safety of participants and compliance with the Building Code of Australia and any relevant Australian Standards.
- c) For rooms where bondage and discipline activities are to be administered, the room(s) is to be fitted out with the following elements:
 - i) Provision of a hand wash basin;
 - ii) Provision and storage of first aid kits; and
 - iii) Flooring, walls, shelves and any other equipment that is smooth, impervious and easy to clean.
- d) Each working room should contain water-proof bins fitted with removable plastic liners or mesh bins, and its own sanitary facilities for use by sex workers or their clients. If design or building constraints prevent the provision of adequate sanitary facilities in, or adjacent to, the working rooms, then these facilities must be provided elsewhere in the premises and should aim to maximise access to these facilities from working rooms.
- e) As a minimum, the following staff facilities must be located within the premises, adjacent to and accessible from cubicles or work areas, and in a secure area inaccessible to visitors:
 - i) Sanitary facilities (toilet, hand basin and shower);
 - ii) Rest area with seating;
 - iii) Dining area with food preparation and storage areas;
 - iv) Sink with running water, water boiling facilities and fridge; and
 - v) Lockers to store personal belongings.
- f) If spa pools, saunas or steam rooms are proposed, details are to be shown on the plans accompanying the development application. Additional shower facilities will be required. Any working rooms that contain a spa pool must also provide a shower in the working room.

- g) Safety and security systems, including secure entry and controlled internal and external access, preferably with remote door release mechanisms, are to be provided.
- h) Where there are three or more working rooms in the sex services premises, intercoms and duress alarm systems are to be installed in all working rooms and staff areas, which are linked to a central base and monitored at all times.
- i) Storage space(s) must be provided for both soiled and clean linen, and safe sex equipment.
- j) If food handling and sales is proposed, details of the food handling and preparation area(s) must be shown on the plans accompanying the development application. These areas must comply with the Food Act 2003 and Food Regulation 2004, and AS4674-2004 Design, Construction and Fit-out of Food Premises.

NOTE: It is an offence under the *NSW Liquor Act 1982* to allow sex services to take place in liquor licensed premises.

- k) The use of the premises must not give rise to 'offensive noise' or transmission of vibration to any place of a different occupancy. Offensive noise is defined under the Protection of the Environment Operations Act 1997.

4) Operational Matters

- a) Current, written information must be provided to staff and visitors regarding sexually transmitted infections. The information must be available in the reception/visitor assessment areas.

If the sex services premises are staffed by sex workers of a predominantly non-English speaking background, then the premises operator must provide current written information on sexually transmitted infections in the language spoken by the sex workers.

- b) A Plan of Management must be submitted with the development application, with particular regard to procedures that ensure sex workers can perform their work in a safe manner with minimum risk to their health. The Plan of Management should include (but not be limited to):
 - i) Demonstration of compliance with NSW WorkCover's *Health and Safety Guidelines for Brothels* (2001);
 - ii) Security and safety provisions, including procedures for staff duress events, particularly for premises where intercom and alarm systems are not required, and ensuring that loitering around and adjacent to the entrance of the premises does not occur;
 - iii) Any security staff, or other staff or contractor who may, as part of their responsibilities, enter the footpath or public domain;
 - iv) Risk management protocols to assist sex workers and staff to manage risk exposures, such as blood and body fluid splashes, needle stick injuries and the like;
 - v) Provision of adequate training of sex workers to carry out visual examination of potential clients to detect whether there is any visible evidence of sexually transmitted infections;

- vi) Provision and management of clean linen and clean towels for use for each client, including an adequate number of receptacles for the separate storage of clean linen and soiled linen;
 - vii) Provision and management of safe sex practices, including products, the storing and cleaning of sex service toys/equipment (including condoms, dental dams, gloves and any other safe sex products); and
 - viii) Details to ensure that sex workers and their clients are educated in the practice of safe sex to minimise risk to health.
- c) It is recommended that private contractors be used to launder towels, sheets and linen used in the premises. As a minimum, it is recommended that linen be washed in a hot water wash that is at water temperature of 70°C using laundry detergent and that all items of linen are thoroughly dried before reuse.
- d) Spruikers are not permitted in association with the operation of the sex services premises.

Spruiker means a person or persons located in a public place, including a footpath, who seek to entice people to enter the premises.

- e) The operator and management of the sex services premises must ensure compliance with the approved Plan of Management.
 - f) It is recommended that the following steps be followed to ensure the continuing good health of sex workers:
 - i) Sex workers are to be immunised against Hepatitis A and B;
 - ii) Sex workers are to attend a sexual health centre or private doctor for sexual health assessment, counselling and education appropriate to individual needs. The frequency of assessment is a matter for determination by the individual sex worker in consultation with his/her clinician;
 - iii) Evidence of attendance for sexual health tests are not to be used as an alternative to safe sex practices;
 - iv) Sexual health certificates of attendance do not imply freedom from sexually transmitted infections; and
 - v) Each client is to be examined by the sex worker to detect any visible evidence of sexually transmitted infections.
- 5) Expansion or Intensification of Existing Premises
- a) In the event that an existing premises seeks to expand its operations or intensify its use, the provisions of this section, including the locational and access controls, will be applied.

3.3. Restricted Premises

A. Background

Restricted premises are premises that, due to their nature, restrict access to customers over 18 years of age, and include sex shops and similar premises.

The impact of restricted premises can vary in relation to their nature and scale. The nature of these uses means that specific controls are required to minimise potential impacts on the community and ensure separation from sensitive land uses such as residences, schools, parks and playgrounds, churches and other places that children may attend for recreational, educational or cultural activities.

The controls in this section seek to reduce negative impacts while at the same time allow premises to operate in suitable locations and at a suitable scale.

B. Objectives

- a) To ensure that the design and location of restricted premises does not adversely impact on the amenity of the area or neighbouring properties, in particular, land uses that are frequented by children;
- b) To ensure that the interior of restricted premises or any restricted material / sex-related products associated with the premises are not visible from the public domain;
- c) To ensure that restricted premises are accessible to all adult members of the community;
- d) To ensure that consideration is given to all aspects of the development, including its operation, and in particular those aspects associated with preserving the amenity of neighbouring premises, and ensuring the safety and security of staff and visitors.
- e) To ensure that underage persons are unable to enter restricted premises.

C. Controls

1) Locational and Access Controls

- a) The primary entrance of restricted premises must not be located:
 - i) Adjacent to or directly opposite to (including elevation) a sensitive land use unless separated by at least another non-sensitive land use, including a road at least 30 metres wide; or
 - ii) On the same floor or level of a building that contains a dwelling; or
 - iii) In a mixed use development where the primary access to the premises is the same access to the residential floor(s)/ level(s) in that development.
- b) Restricted premises must not be located within a radius of 75 metres from an existing, approved sex services premises or restricted premises, including adult entertainment premises. The radius must be measured from the centre of the primary access to the proposed adult entertainment premises or sex services premises.

Adult entertainment premises: is a form of restricted premises that provides entertainment such as strip club premises or premises which sells or displays restricted material but

does not include hotel accommodation, a pub, home occupation (sex services) or sex services premises.

- c) Access to and within restricted premises is to be provided in accordance with the Building Code of Australia and the Commonwealth's *Disability Discrimination Act 1992* to ensure that the premises is accessible to all adult members of the community. In this regard, access arrangements must demonstrate:
 - i) Major entrances to the premises, to which the public are entitled to enter, must be designed and constructed to provide equitable treatment of staff and visitors; and
 - ii) Compliance with the minimum standards of grade, doorway, width and connectivity in accordance with the *Disability Discrimination Act 1992*.

2) External and Internal Design of Premises

- a) The external appearance of restricted premises should respect the architectural character of the streetscape so that the premises does not become a prominent feature of the street.
- b) The premises must be clearly numbered, with the number clearly visible from the street/foyer.
- c) Restricted premises, including the signage, must not display any restricted material including sex-related products or toys, images considered by Council to be sexually explicit, lewd or offensive, from windows, doors or outside of the premises. Details of any proposed signage associated with the restricted premises, including location and design/wording, are to accompany the development application for the use/activity.

Restricted material means publications classified Category 1 restricted, Category 2 restricted or RC (Refused Classification) under the Commonwealth's Classification (Publications, Films and Computer Games) Act 1995.

- d) Adequate design measures ensuring the safety and security of staff and visitors to the restricted premises must be provided and, where appropriate, should include:
 - i) Reception/counter area that incorporates design measures and management procedures to ensure the safety and security of staff and visitors;
 - ii) Minimisation of alcoves and entrapment spaces in its floor layout; and
 - iii) Adequate safety and surveillance systems.
- e) The interior of restricted premises must not be visible from outside of the premises, including the footpath.
- f) Where the interior of the restricted premises may be visible from neighbouring buildings, adequate measures should be taken to screen the interior of the premises (e.g. window screens and blinds).
- g) If food handling and sales is proposed (including drinks), details of the bar and food handling and preparation area(s) must be shown on the plans accompanying the development application. These areas must comply with the Food Act 2003 and Food Regulation 2004, and AS4674-2004 Design, Construction and Fitout of Food Premises.
- h) If private viewing areas/booths or cinema rooms are proposed, there are potential health risks in the transfer of body fluids between customers utilising this facility. As a minimum:
 - i) A hand wash basin is to be provided adjacent to private viewing areas/booths or cinema rooms, and is available for customers to use at all times;

- ii) A safety and surveillance system is to be located at the entrance of these areas as an additional safety and security measure;
- iii) These areas must be cleaned on a daily basis with spot cleaning to occur as necessary; and
- iv) Waste receptacles are to be provided in all areas/booths or cinema rooms.
- i) The use of the premises must not give rise to 'offensive noise' or transmission of vibration to any place of a different occupancy. Offensive noise is defined under the *Protection of the Environment Operations Act 1997*.

3) Operational Matters

- a) A Plan of Management must be submitted with the development application. The Plan of Management should include (but not limited to):
 - i) Security and safety provisions, including ensuring that loitering around and adjacent to the entrance of the premises does not occur;
 - ii) Any security staff, or other staff or contractor who may, as part of their responsibilities, enter the footpath or public domain;
 - iii) Hours of operation, including noise;
 - iv) Risk management and cleaning protocols in relation to private viewing areas/booths or cinema rooms; and
 - v) Where appropriate, the management of the food / bar handling and preparation areas in accordance with relevant health guidelines and the *NSW Liquor Act 1982*.
- b) Spruikers are not permitted in association with the operation of restricted premises.
- c) The operator and management of the restricted premises must ensure compliance with the approved Plan of Management.

4) Expansion or Intensification of Existing Premises

- a) In the event that an existing premises seeks to expand its operations or intensify its use, the provisions of this section, including the locational and access controls, will be applied.

Table of Contents

D4 INDUSTRIAL DEVELOPMENT	2
4.1. KEY PRECINCTS	2
4.2. BUILDING HEIGHT	10
4.3. BUILDING SETBACKS AND LANDSCAPE	10
4.4. BUILDING DESIGN	18
4.5. STORAGE OF MATERIALS AND CHEMICALS	21
4.6. ACCESSING AND SERVICING THE SITE	22
4.7. FENCING	24
4.8. LIGHTING	26

D4 Industrial Development

A. Background

This section provides controls and objectives for all industrial land in the City of Penrith.

This section provides specific controls for industrial development in addition to the general controls elsewhere in this DCP

B. General Objectives

- a) To promote industrial development which can operate in a functional, safe and environmentally friendly manner;
- b) To minimise conflict between industrial land uses and adjacent sensitive land uses;
- c) To ensure that development of land to which this section applies will not significantly affect the function, efficiency and safety of all classified roads and other major roads;
- d) To promote development of a visually attractive form, design and scale, where urban elements, streetscape and built forms are integrated with the existing environment;
- e) To retain existing vegetation and promote the integration of significant landscaped areas into the site design to minimise the impacts of built form and hardstand areas;
- f) To manage traffic impacts and access issues for larger vehicles and loading facilities;
- g) To address visual impacts and safety requirements of large external storage areas; and
- h) To promote employment generation that has considered access to public transport and supporting services for improved amenity.

C. Other Relevant Sections of this DCP

Penrith DCP 2014 is a multi-layered document that recognises the relationship of a number of issues to achieving sustainable outcomes. Therefore, to address issues associated with industrial development, it is important to read all relevant parts of this DCP.

Council will consider each development application on its merit, having regard to this section and other relevant sections of the DCP, and other relevant environmental planning instruments, contributions plans or Council policies. Compliance with this Section alone does not guarantee that consent will be granted to an application.

4.1. Key Precincts

The main industrial areas in Penrith can be broken down into ten precincts, each with different characters (see Figure D4.1). This Section provides different controls for each of the precincts. The industrial precincts are:

- Precinct 1: Dunheved/St Marys (north of Christie Street) shown in Figure D4.2.
- Precinct 2: Dunheved/St Marys (south of Christie Street) shown in Figure D4.2.
- Precinct 3: St Marys (east of Forrester Road) shown in Figure D4.2.
- Precinct 4: North Penrith (west of Castlereagh Road) shown in Figure D4.3.
- Precinct 5: North Penrith (east of Castlereagh Road) shown in Figure D4.3.
- Precinct 6: South Penrith (east of Mulgoa Road) shown in Figure D4.4.
- Precinct 7: Emu Plains (north of Old Bathurst Road) shown in Figure D4.5.

Precinct 8: Emu Plains (south of Old Bathurst Road) shown in Figure D4.5.

Precinct 9: Kingswood shown in Figure D4.6.

In addition, the area known as Waterside Corporate is zoned for industrial uses, but most of the controls for this area are contained in the Waterside Corporate Section of this Plan. However, where there are no specific controls included in Section E4, the controls of this Section apply.

This section also applies to land known as the Erskine Park Employment Area which is currently zoned for industrial uses under State Environmental Planning Policy (Western Sydney Employment Area) 2009.

Figure D4.1: Key Precincts

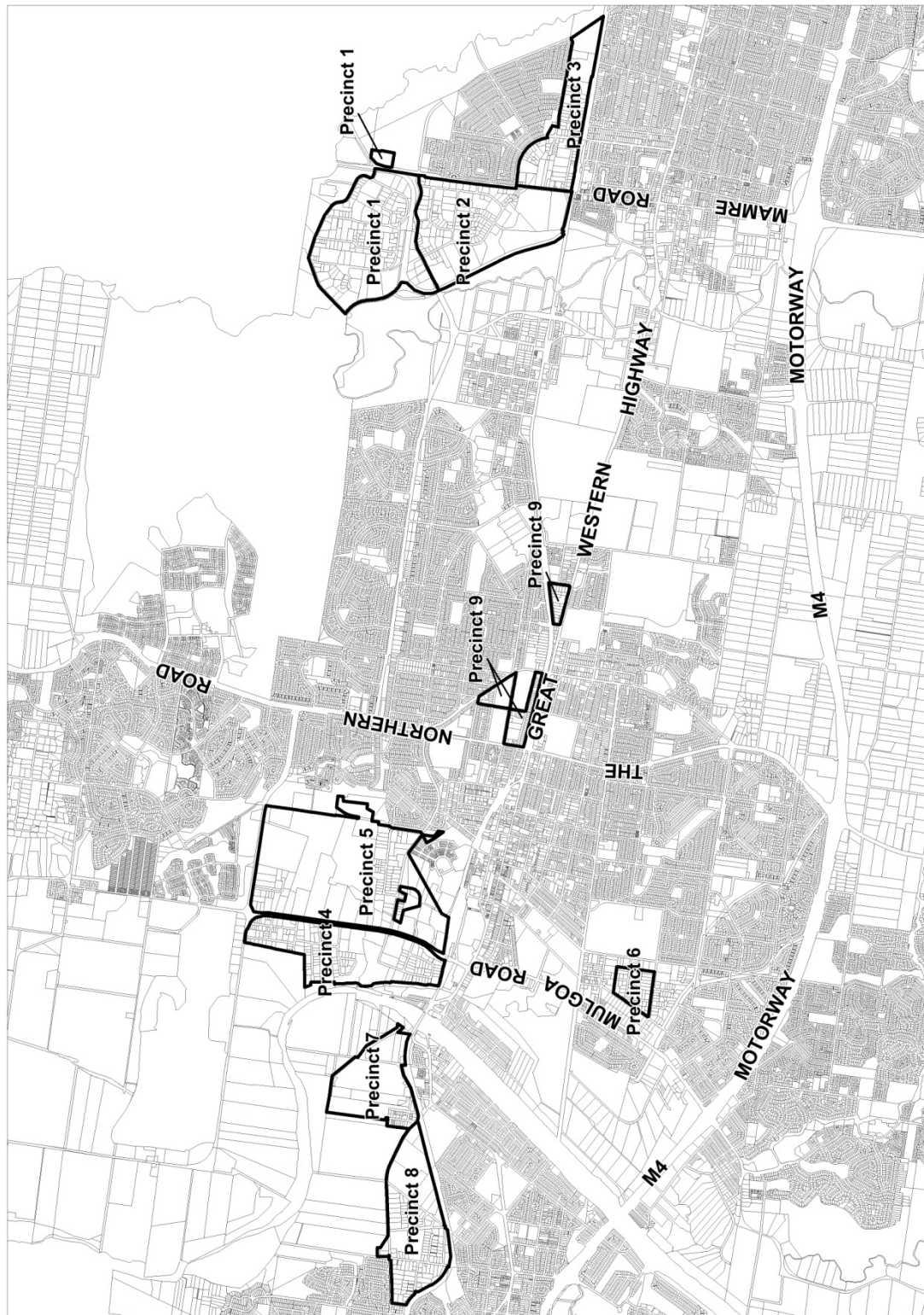


Figure D4.2: Precincts 1, 2 and 3 – Dunheved / St Marys

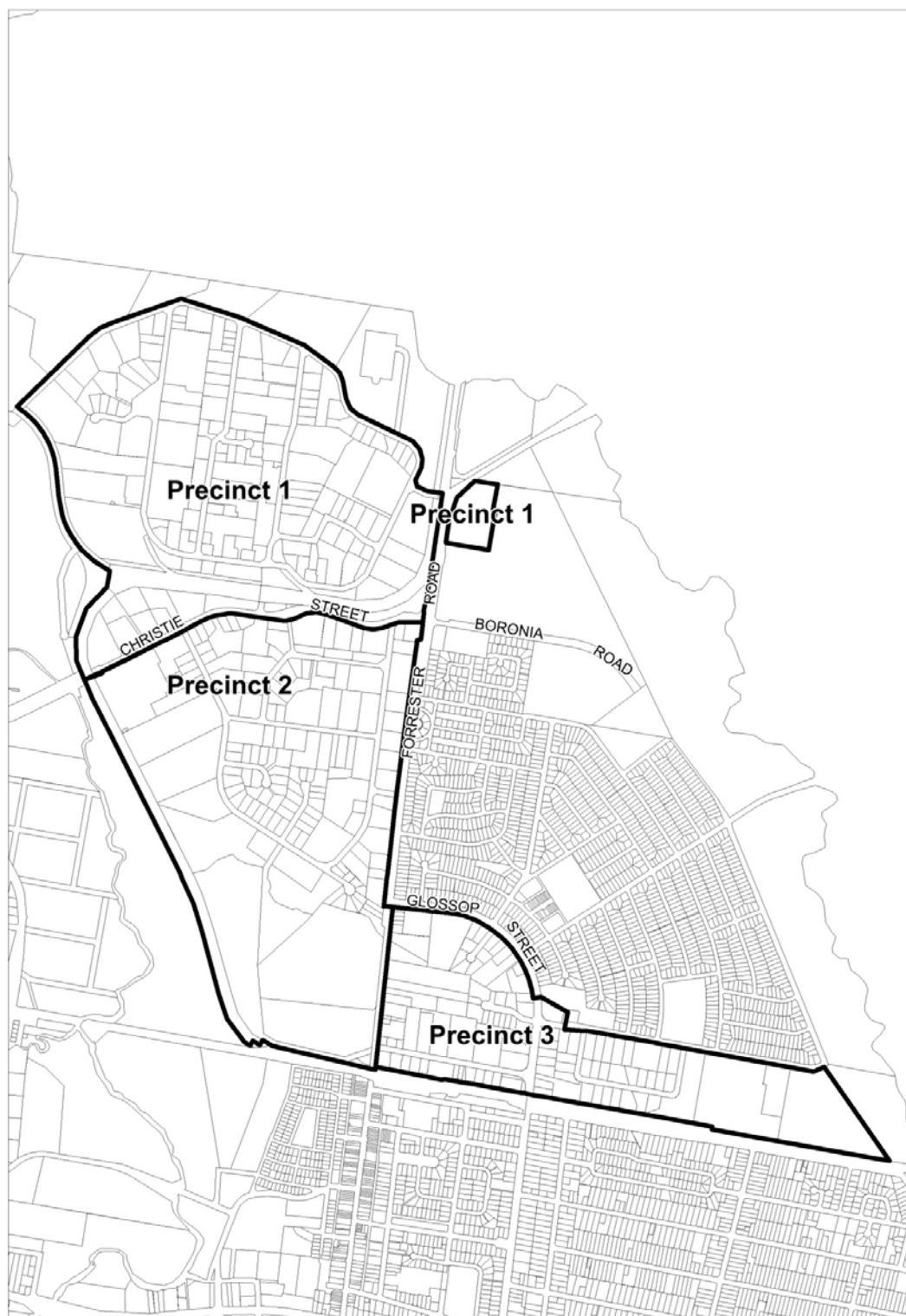


Figure D4.3: Precinct 4 and 5 – North Penrith

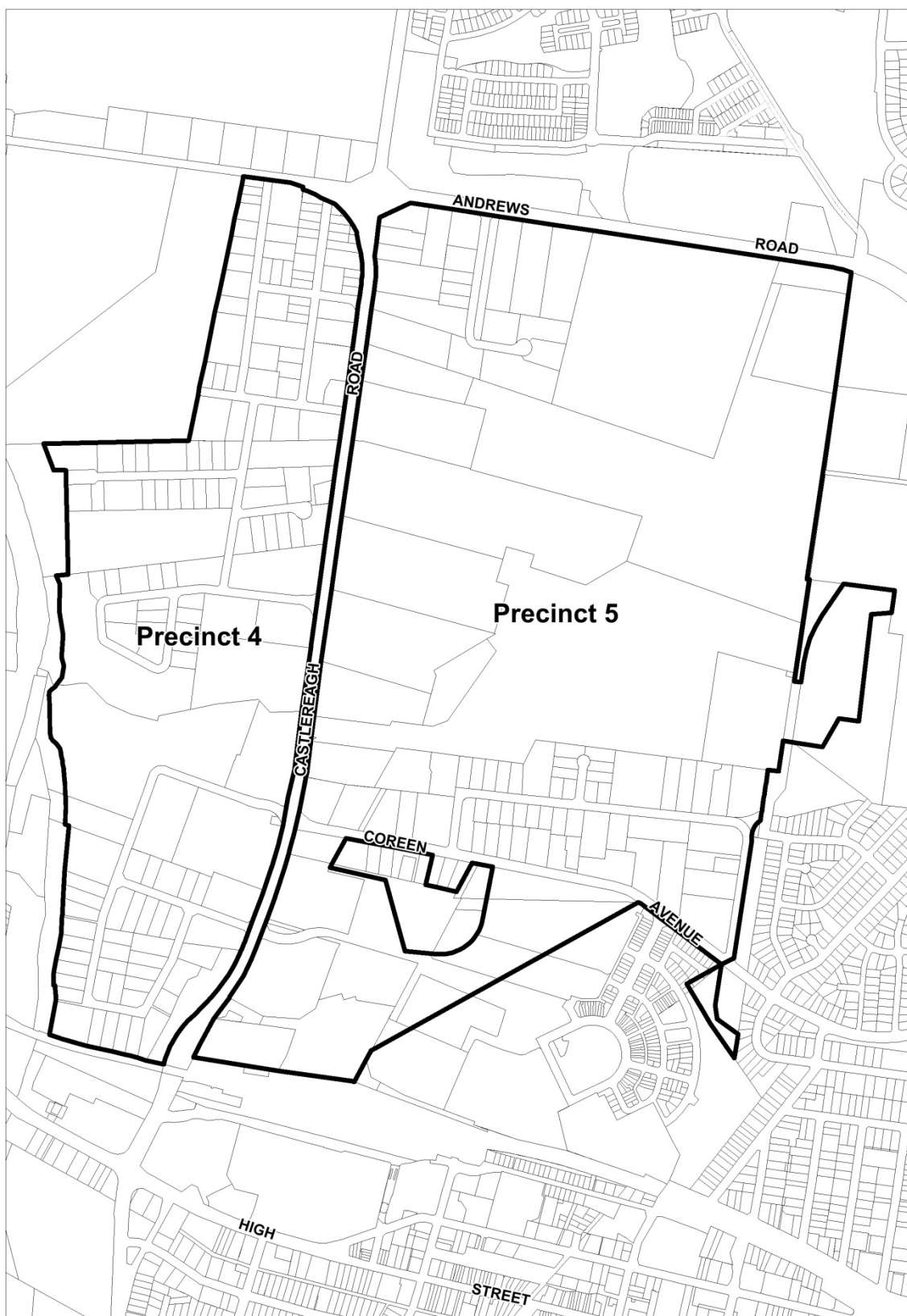


Figure D4.4: Precinct 6 – South Penrith

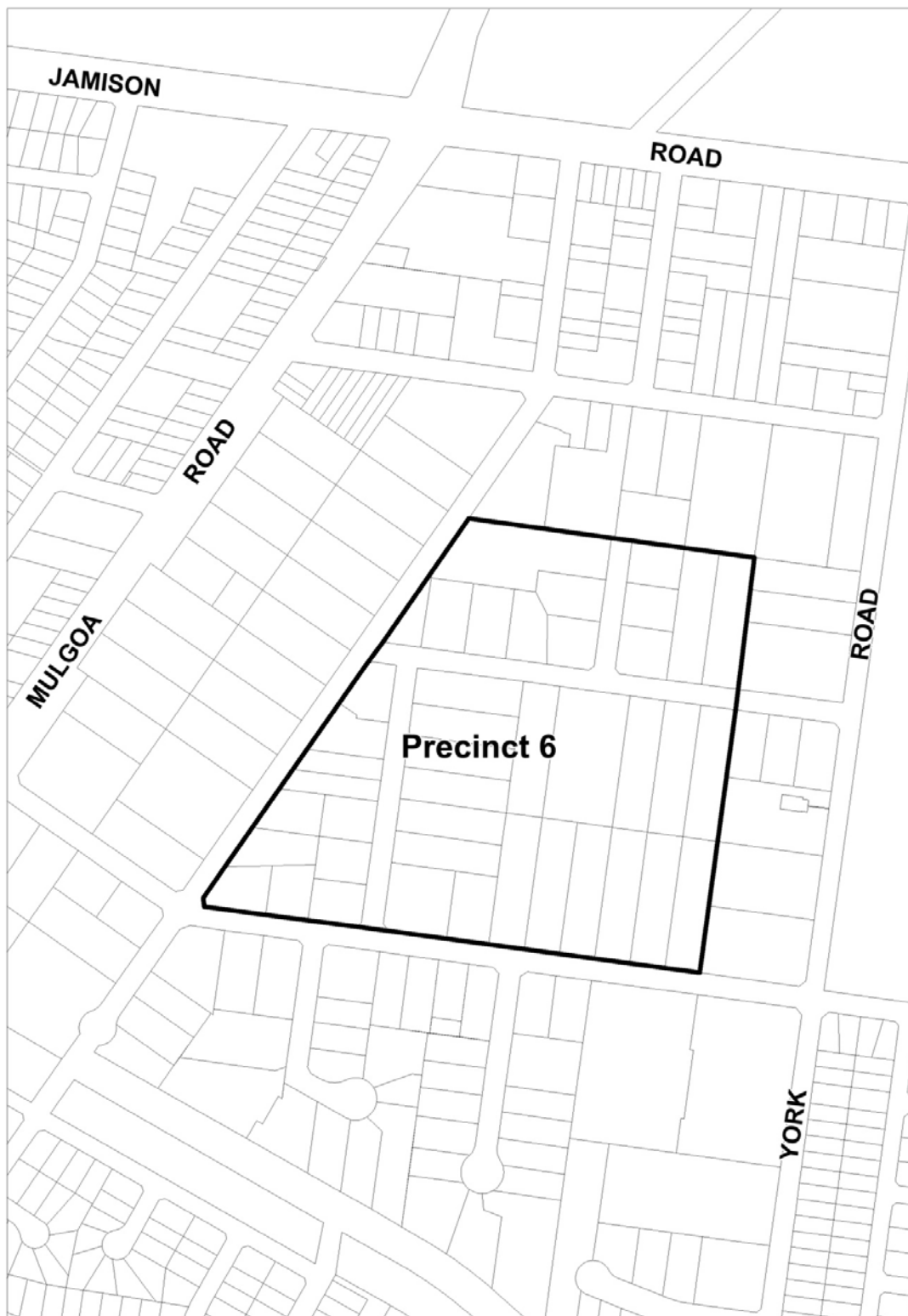


Figure D4.5: Precincts 7 and 8 – Emu Plains

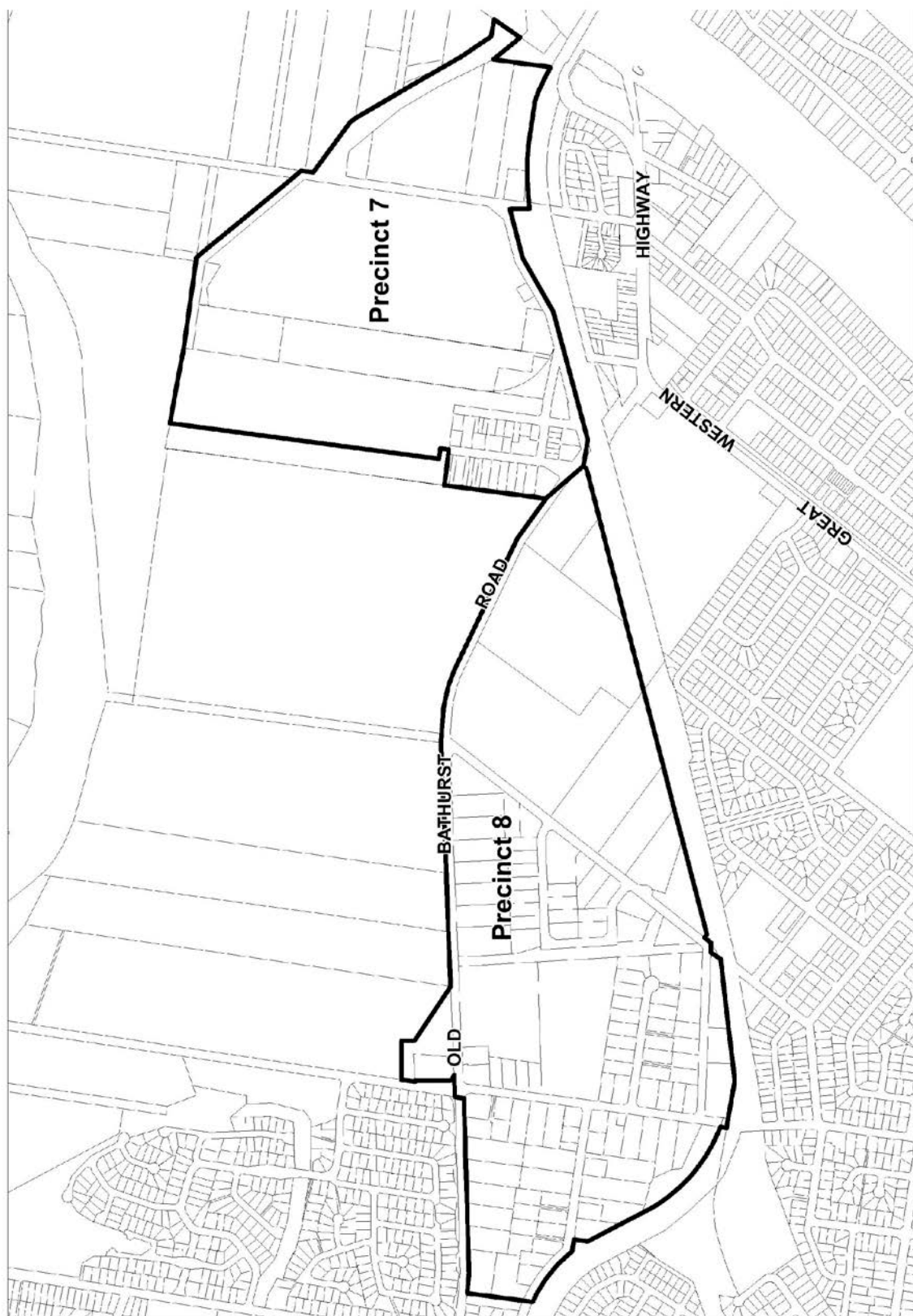
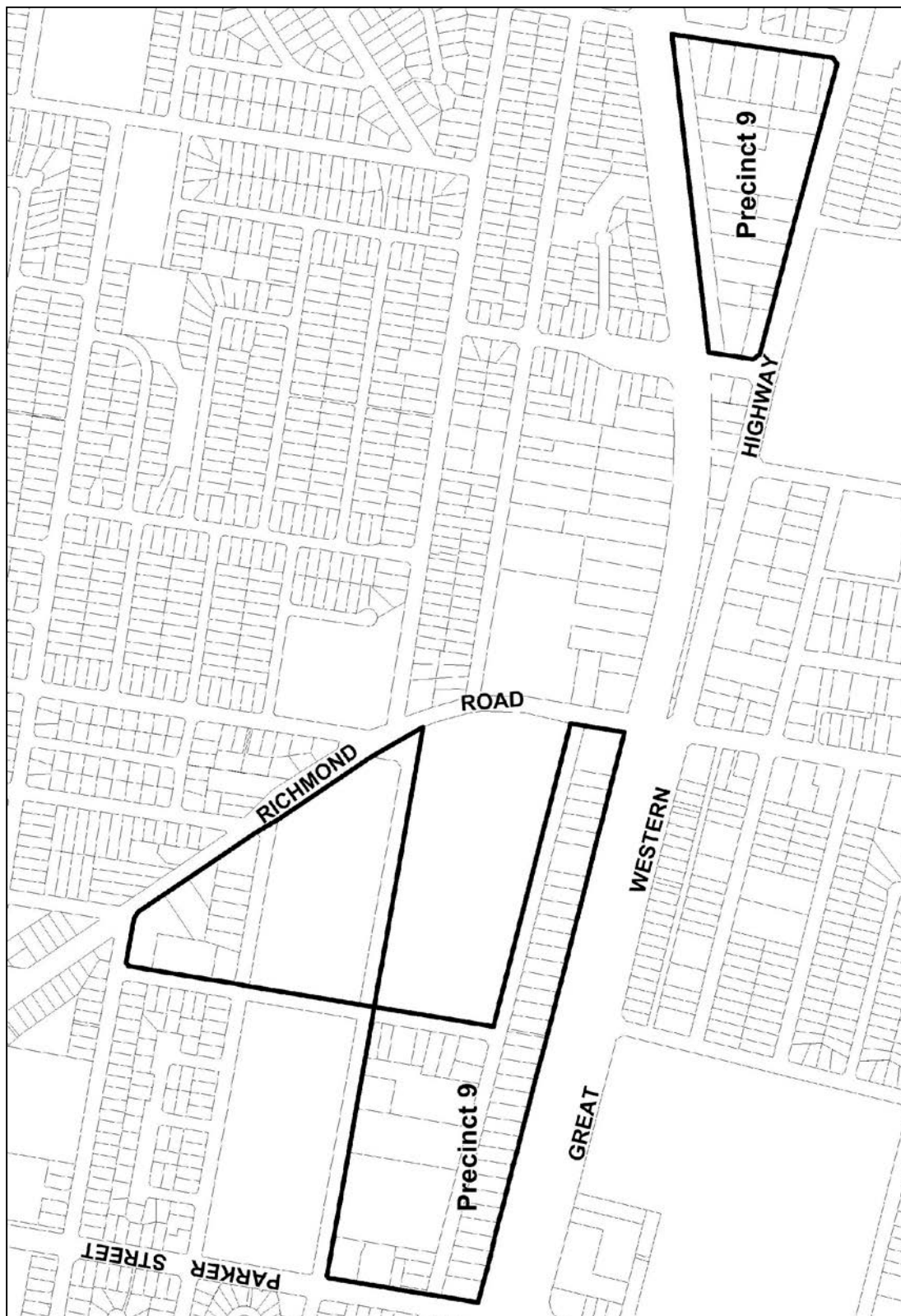


Figure D4.6: Precincts 9 – Kingswood



4.2. Building Height

A. Background

Industrial development should achieve a scale and height in keeping with the existing and desired future character of the area.

Development may not be permitted up to the maximum height specified on the Height of Buildings Map, if it will have an adverse impact on views to or from areas of visual importance or on heritage significance. This section provides guidance to applicants regarding building heights for industrial development.

B. Objectives

- a) To encourage building forms that respond to the topography of the site and the relative position of the site to other allotments within, and to, the street; and
- b) To ensure a scale of building which complements the existing environment in which the site is located addressing visibility from key public spaces and the scale and context of the existing and desired streetscape.

C. Controls

In addition to height controls in the LEP, buildings on land in Precincts 4, 7 and 8 will need to satisfy the following additional controls:

- 1) For Precincts 4 and 7 (areas adjacent to the Nepean River), the development must not be visually obtrusive when viewed from the Nepean River and must not adversely affect the scenic quality of the river.
- 2) For Precincts 7 (north of Old Bathurst Road) and 8 (south of Old Bathurst Road), the application must demonstrate that the development will not adversely affect the scenic quality of the precinct, particularly when viewed from elevated locations.

4.3. Building Setbacks and Landscape

A. Objectives

- a) To enhance the visual quality of industrial development through appropriate setbacks, building and landscape design, particularly when viewed from public areas;
- b) To ensure new development retains existing trees or significant stands of vegetation in the overall site layout;
- c) To provide functional areas of planting that enhance the presentation of a building;
- d) To screen undesirable views and minimise the visual impact of hard surface areas; and
- e) To create industrial precincts with their own intrinsic and unique landscape characteristics, which enhance the existing and/or natural landscape and character of an area.

B. Controls

1) Setbacks

- a) Setbacks for industrial development are to be in accordance with the standards specified in Table D4.1. These setback areas are to be landscaped, but may incorporate an off-street parking area if it can be demonstrated that the location of the car parking area:

- i) Is within a setback which is at least 13m wide and set behind a landscaped area which is at least 4m wide;
- ii) Promotes the function and operation of the development;
- iii) Enhances the overall design of the development by implementing design elements, including landscaping, that will screen the parking area and is complementary to the development; and
- iv) Does not detract from the streetscape values of the locality.

Figures D4.7 - D4.8 illustrate appropriate building setbacks.

- b) In Precincts 1 and 2 (Dunheved/St Marys), 7 (Emu Plains adjacent to the rail station) and 9 (Kingswood) variations to the required setbacks will be considered on merit, taking account of site areas and street frontage widths, access to the site, availability of on-site parking and access areas, landscaping provision and the setbacks of adjoining Table D4.1: Building Setbacks for Industrial Development.

Table D4.1: Building Setbacks for Industrial Development

Location	Minimum Building Setback
Lots fronting: <ul style="list-style-type: none"> • Castlereagh Road • Mulgoa Road 	20 metres
Lots fronting: <ul style="list-style-type: none"> • Andrews Road • Old Bathurst Road 	15 metres
Lots adjacent to: <ul style="list-style-type: none"> • Nepean River (Precinct 7 - Emu Plains) • Western Railway (Precincts 7 and 8 – Emu Plains) 	10 metres
Lots within the vicinity of “Craithes” (within Precinct 4 - North Penrith, west of Castlereagh Road)	See Figures D4.10 and D4.11
Lots adjoining “Combewood” (within Precinct 5 – North Penrith, east of Castlereagh Road)	See Figure D4.12
All other locations	9 metres
Secondary road frontages	5 metres

Figure D4.7: Illustration of Building Setbacks - Smaller Site (Plan View)

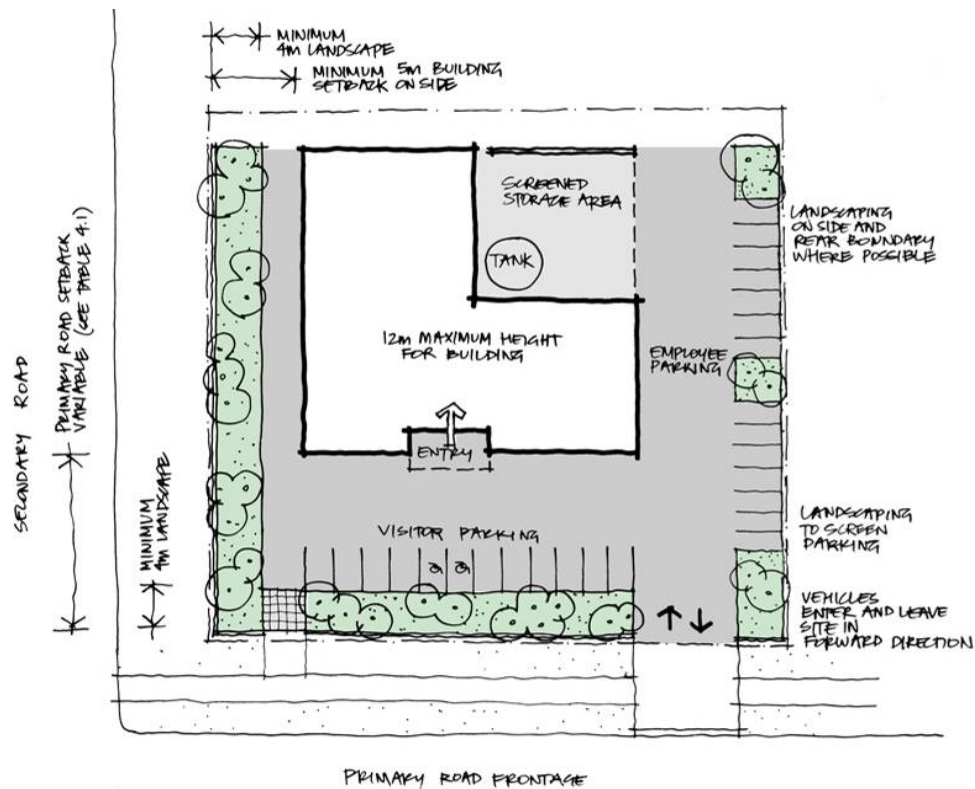
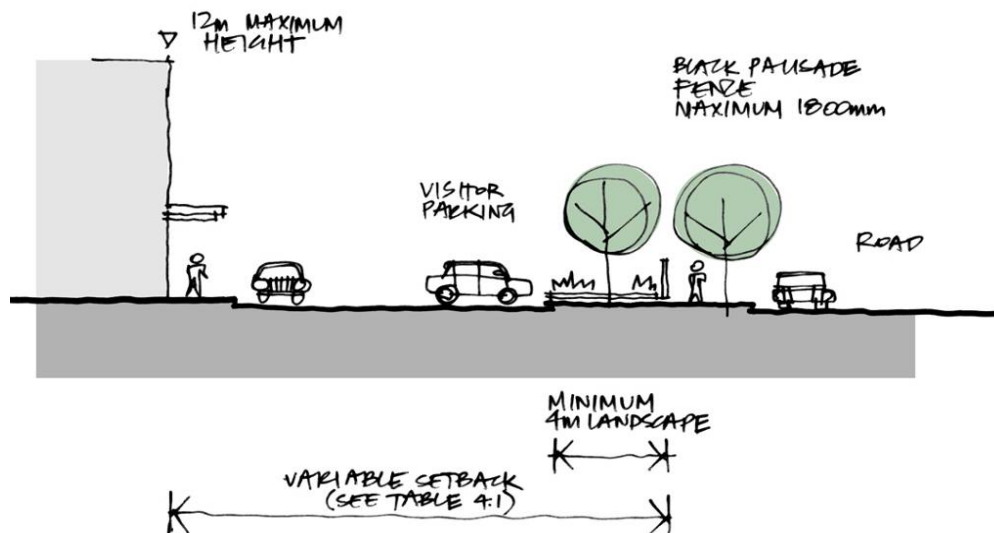


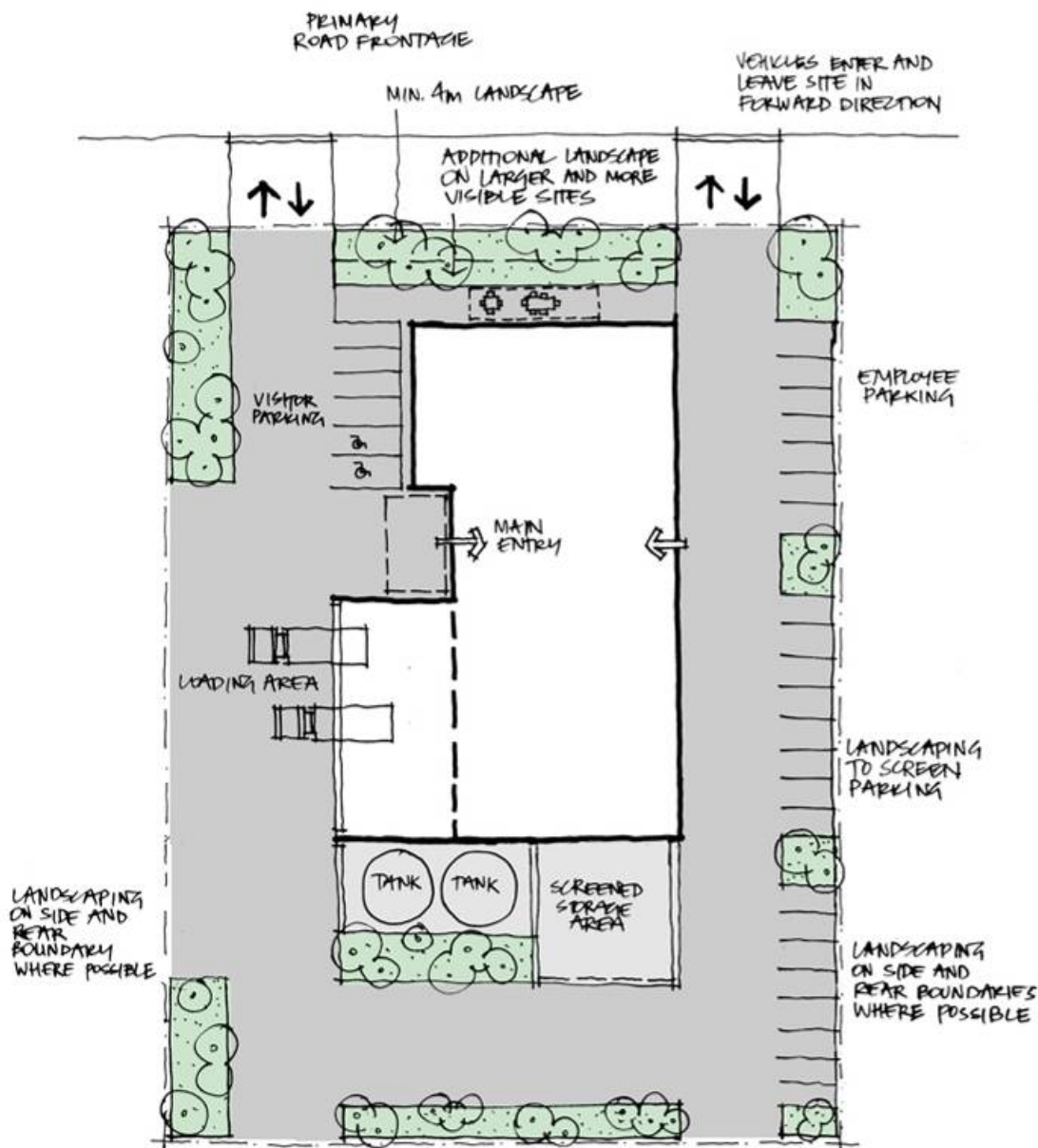
Figure D4.8: Illustration of Building Setbacks - Smaller Site (Cross Section)



2) Visual Impact of Buildings and Hardstand Areas

- a) The landscape design within setbacks should consider the scale of the building and where appropriate, select and locate plants to help reduce the bulk and scale of the building.
- b) The visual impact of large expanses of wall should be reduced in scale by architectural treatment as well as by dense grove planting or other landscape design solutions.
- c) Where an industrial development contains large expanses of hardstand or paved areas, the applicant must demonstrate how the development application reduces the 'heat effect' and visual impact of these large expanses.

Figure D4.9: Illustration of Building Setbacks - Larger Site (Plan View)

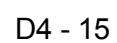


3) Vegetation and Landscape

- a) The siting and layout of a development should preserve all on-site trees, significant strands of vegetation, and remnant or native bushland in accordance with the requirements of the Vegetation Management and Landscape Design sections of this DCP. Where this is not practical, the development application must justify the loss of vegetation and outline what measures are to be taken to replace it.
- b) Development of land on the site of a heritage item or within the vicinity of a heritage item should occur in a manner that will not result in damage or destruction of vegetation associated with that item.
- c) Applicants should refer to the Landscape Design section of this DCP regarding the implementation and maintenance of landscaping for the site.
- d) Smaller scale and less visually prominent planting should be provided to add variety and interest in the appearance of the site.
- e) Landscape materials should cause minimal detrimental visual impact, and the use of subtle coloured materials and block or brick paving is encouraged.
- f) Paving and structures shall complement the architectural style of existing buildings.
- g) Outdoor staff break areas should be provided and integrated into landscape areas. These areas should be provided with shade and reasonable amenity.
- h) Shade trees should be provided in outdoor staff break areas and along pedestrian paths and walkways.
- i) Plant species should be carefully selected to meet service authority requirements in easement locations.

Penrith Development Control Plan 2014

D4 Industrial Development



Penrith Development Control Plan 2014

D4 Industrial Development

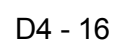
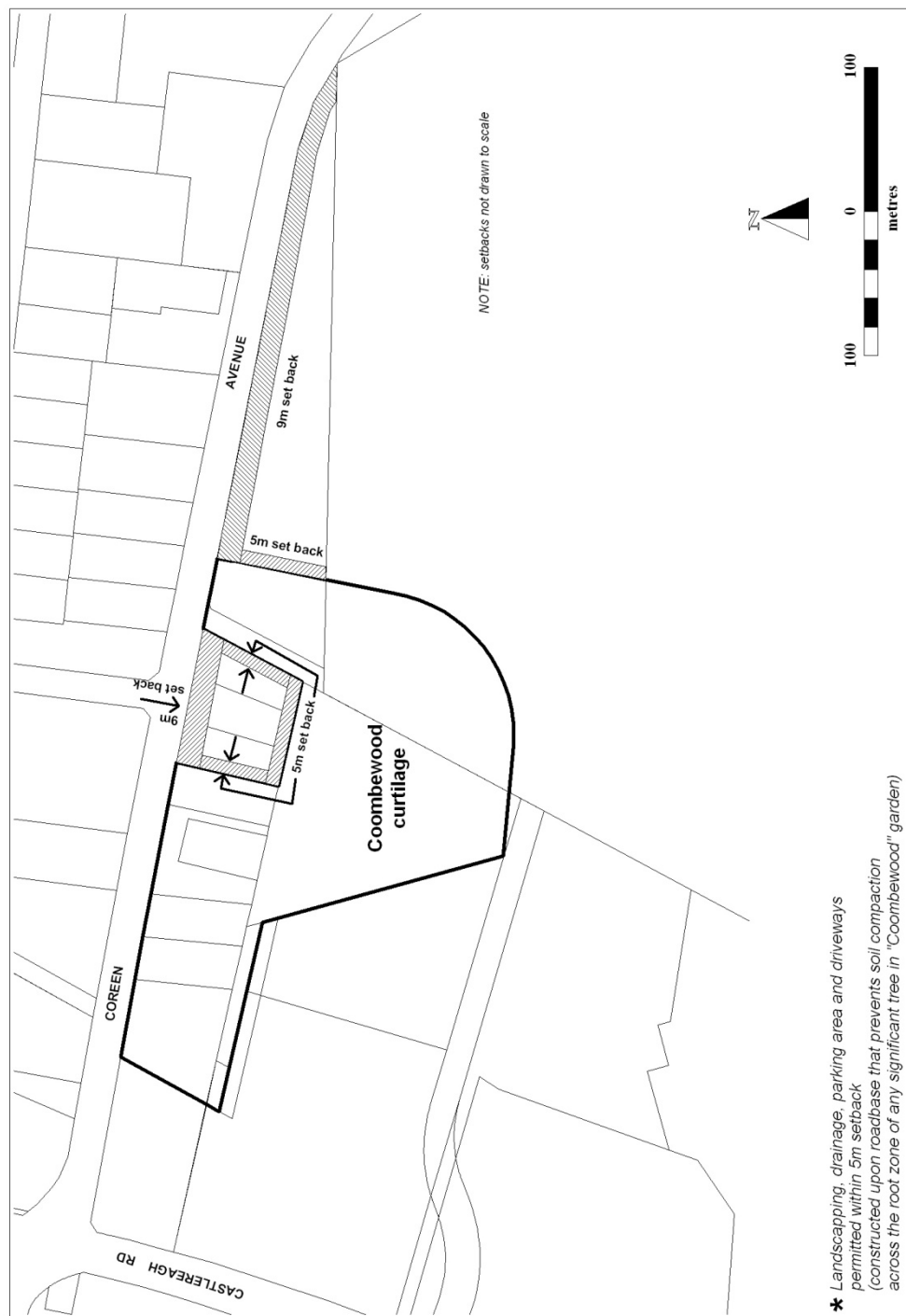


Figure D4.12: Precinct 5 - Landscape Setbacks to Combewood



4.4. Building Design

A. Objectives

- a) To encourage a high standard of architectural design, utilising quality materials and finishes appropriate for the locality;
- b) To ensure that development is undertaken in a sustainable manner, demonstrating this through the application of the Building Sustainability Index (BASIX), Green Star and/or Australian Buildings Greenhouse Ratings (now part of the National Australian Built Environment Rating System (NABERS) certification systems, where appropriate;
- c) To ensure that new development can integrate into the existing urban fabric to contribute to the creation of a visually cohesive urban environment;
- d) To encourage innovation in building design and the use of materials; and
- e) To encourage articulated and varied frontages to minimise perceived bulk and scale.

B. Controls

- 1) Non-residential developments including mixed use developments, with a construction cost of \$1 million or more are to demonstrate a commitment to achieving no less than 4 stars under Green Star or 4.5 stars under the Australian Building Greenhouse Rating system (now part of the National Australian Built Environment Rating System (NABERS)).
 - a) NABERS can be used to rate commercial offices, shopping centres and hotels.
 - b) Green Star can be used for projects from apartment buildings to schools, university buildings, hospitals, offices, shopping centres and industrial facilities.
- 2) All developments shall be designed to present a high standard of urban form incorporating innovative and attractive architectural design of all elevations and roof form; and appropriately reflect the important gateway entry roles of these precincts and the visually important access routes to the City.
- 3) Prominent elevations, such as those with a frontage to the street or public reserves or those that are visible from public areas, must present a building form of significant architectural and design merit. The construction of large, blank wall surfaces is not permitted.
- 4) Large elevations should be articulated by structural variations and/or a blend of external finishes including brick, masonry, pre-coloured metal cladding, appropriately finished 'tilt-slab' concrete or a combination of these materials (see Figure D4.13).
- 5) Large unrelieved expanses of wall or building mass will not be supported by Council. They should be broken up by the use of suitable building articulation, fenestration or alternative architectural enhancements.
- 6) Particular care should be taken in regard to:
 - a) Designing roof elements; and
 - b) Locating plant and mechanical equipment including exhausts, so as screen them from a public place.
- 7) Architectural features, consistent with the overall design of the building, may be used to:
 - a) Highlight entrances to buildings; and

- b) Accentuate pedestrian areas and provide improved climatic amenity, particularly for buildings that will experience high volumes of pedestrian movements, using techniques such as verandahs and awnings (see Figure D4.13).
- 8) The development must incorporate a variety of external finishes in terms of both colour and type of material used. The external finishes (walls, roof, awnings etc.) of the development are to be:
 - a) Made from durable high quality, low maintenance, non reflective materials;
 - b) Compatible with the overall design and form of the development;
 - c) Selected for all built forms to ensure the entire development presents a homogeneous form;
 - d) Considered in association with proposed plantings and landscape treatment;
 - e) Considered for their ability to provide visual relief in large wall surfaces and elevations; and
 - f) Selected to ensure the development complements the surrounding environment while reducing the temptation to vandalism and graffiti.
 - 9) Courtyard and screen walls should be in the same material as the building facades.
 - 10) Development within Precincts 4, 7, 8 and 9 identified as having high scenic or visual quality (see Section 4.2 of this Section under 'Controls') shall use primarily natural and earthy tones for external finishes.
 - 11) Development applications for new buildings or additions to existing buildings are to be accompanied by a Schedule of External Finishes and Colours, demonstrating compliance with the above requirements.
 - 12) Any office and administration component is to be located to the main frontage of the building and be designed as an integral part of the overall building, rather than a 'tack on' addition.
 - 13) The main office administration component is to have a designated entry point that is highly visible and directly accessible from visitor parking and the main street frontage.
 - 14) The entry, design and layout of the main office or administration component is to consider the principles of Universal Design and incorporate, if possible:
 - a) A level or graded path from the car park area to the entrance;
 - b) A level entry (no steps);
 - c) An accessible toilet;
 - d) Easy access doors and corridors; and
 - e) Accessible placement of switches, power points and window controls.
 - 15) Where the nature of the industrial development will attract clients/visitors to the site, consideration should be given to incorporating the above accessibility features into that part of the building likely to be used by clients/visitors.
 - 16) All loading areas should be located towards the rear of allotments. Where possible, loading areas should be screened from the view of main road frontages through physical and/or vegetation screening (see Figures D4.7 and D4.9).

Figure D4.13 (a): Illustration of Possible Techniques to Articulate Large Buildings (Elevation)

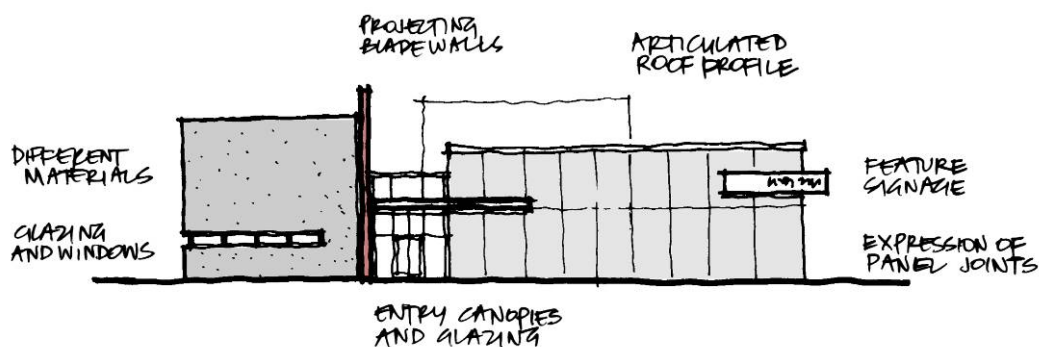


Figure D4.13 (b): Illustration of Possible Techniques to Articulate Large Buildings (Plan View)

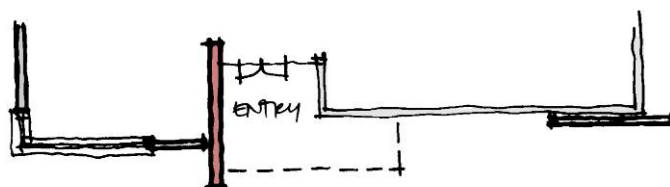
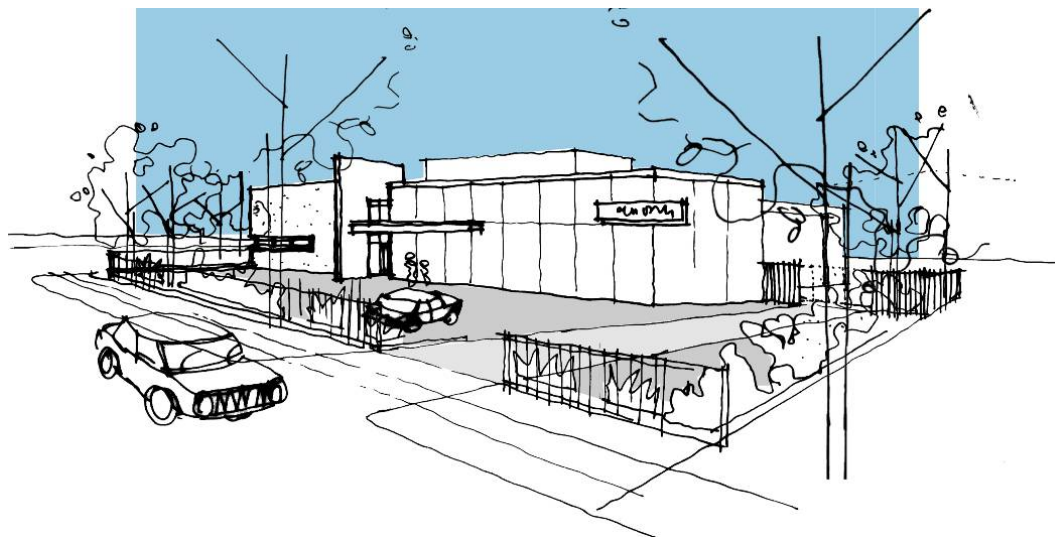


Figure D4.13 (c): Illustration of Possible Techniques to Articulate Large Buildings (Sketch Perspective)



4.5. Storage of Materials and Chemicals

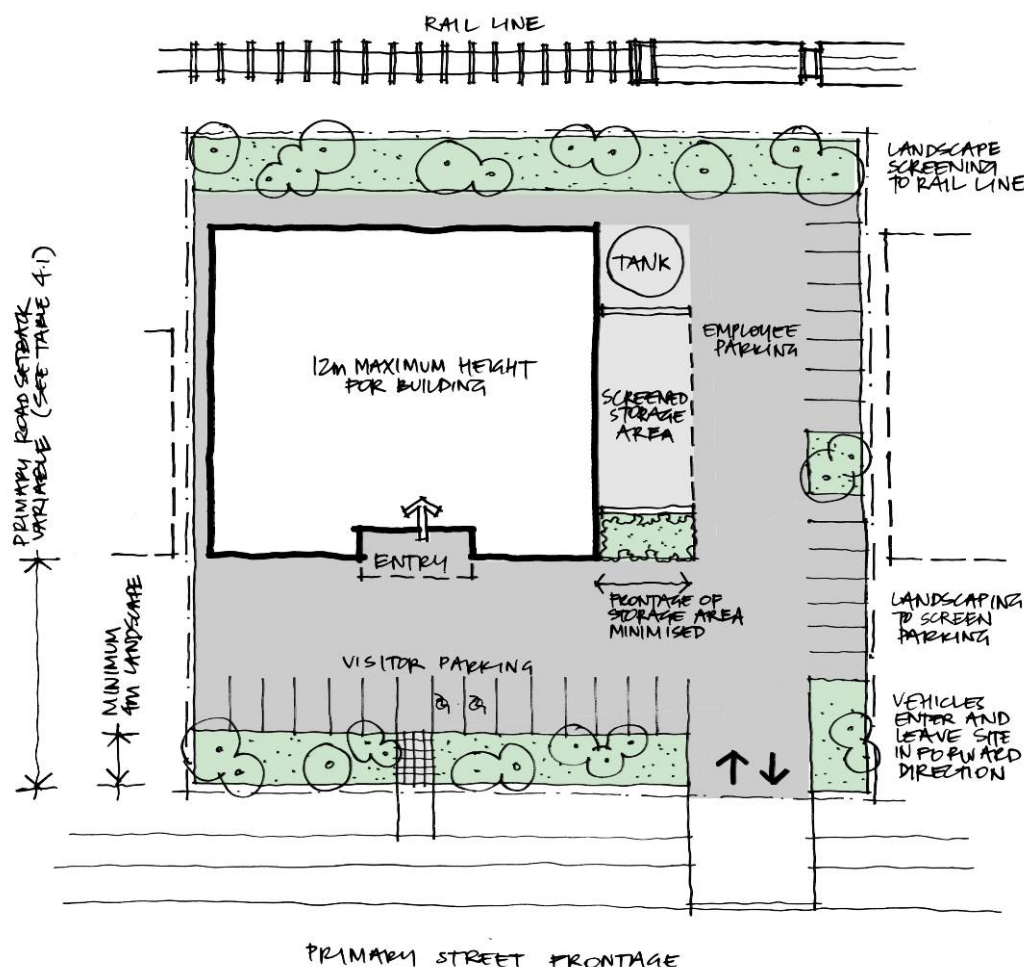
A. Objectives

- a) To ensure that external storage of goods does not detract from the visual amenity of industrial areas, streetscapes or adjoining residential areas;
- b) To ensure that the storage and use of chemicals that are potentially hazardous to humans occurs in a safe and responsible manner and minimises the risk of accidental injury or loss of life; and
- c) To ensure that the storage and use of potentially polluting substances occurs in an environmentally responsible manner, and will not have any detrimental impact on the environmental quality of the surrounding area.

B. Controls

- 1) External storage of goods must be avoided, wherever possible. Where the nature of the activity or the materials means that internal storage is impractical, all external storage areas must be located behind the front building setback. In addition, when assessing development applications involving external storage of goods, Council will take into consideration:
 - a) The proposed height and on-site arrangement of stored goods;
 - b) The visual impact of the storage area and how this is proposed to be minimized (orientation, screening with landscaping and/or solid fencing, etc.);
 - c) Access arrangements; and
 - d) Safety issues.
- 2) For sites with multiple frontages, either to roads or to the main western railway line, the location and orientation of external storage areas shall minimise visual impact from all potential view points (see Figures D4.9 and D4.14).
- 3) Rain water tanks are not to be visually intrusive from the main street frontage or other public areas (see Figures D4.9 and D4.14).
- 4) If the development involves the storage of chemicals on the site, a Chemical Use and Storage Report may be required (see Appendix F3 'Submission Requirements' for further details). A chemical use and storage report will not be required when:
 - a) The use of chemicals is for routine cleaning and the chemicals to be used are of household or hospital grade;
 - b) The total quantity of chemicals to be routinely used or stored on the site does not exceed 100 litres;
 - c) The chemicals to be used or stored are not of sufficient acidity, alkalinity or strength to cause significant harm on skin contact, or to the environment if a spill were to occur; and
 - d) The application outlines the methods proposed to be used to minimise the potential for spills.

Figure D4.14: Illustration of Screening of Storage Areas (Front and Rear Visibility) (Plan View)



4.6. Accessing and Servicing the Site

A. Objectives

- To ensure the safe and efficient movement into and out of an industrial development without adversely affecting the existing and future service and safety levels of the road;
- To ensure industrial development provides sufficient parking on-site to accommodate all parking demands generated by the development while ensuring safe and efficient movement of vehicles within the site;
- To encourage the development of a parking layout that enhances the function and appearance of the industrial development; and
- To ensure that cyclist and pedestrian needs are adequately and safely accommodated in all industrial areas.

B. Controls

- 1) New industrial developments with direct access onto Castlereagh Road, the Great Western Highway or Parker Street will need to provide a deceleration lane in accordance with the Roads and Traffic Authority Guidelines.

- 2) Development on newly created allotments that front Castlereagh Road, the Great Western Highway, Parker Street or a classified road shall ensure that:
 - a) The allotment of land was created in accordance with a subdivision approved pursuant to this DCP; and
 - b) Access to the allotment is in accordance with the access arrangements approved with the subdivision.
- 3) Industrial development shall, where appropriate, be designed to:
 - a) Allow all vehicles to enter and leave the site in a forward direction;
 - b) Accommodate heavy vehicle parking and manoeuvring areas;
 - c) Avoid conflict with staff, customer and visitor vehicular and cycle movements; and
 - d) Ensure satisfactory and safe operation with the adjacent road system.
- 4) In determining access and servicing requirements, Council will take the following into consideration:
 - a) The location, type and scale of the proposed development;
 - b) The compatibility of the location and design of the car park with adjoining properties;
 - c) Traffic Authority Guidelines and comments of the Local or Regional Traffic Committee(s); and
 - d) The potential for the development to generate heavy vehicle movements.
- 5) Full details of the volume, frequency and type of vehicle movements shall be submitted with the development application.
- 6) In general, turning circles will be required to be provided to accommodate the largest type of truck which could reasonably be expected to service the site. All developments must be designed and operated so that a standard truck may complete a 3-point or semi-circular turn on the site without interfering with parked vehicles, buildings, landscaping or outdoor storage and work areas. Large scale developments shall be designed to accommodate semi-trailers. In the case of the conversion of an existing development, should it appear that a truck turning circle may prove difficult, a practical demonstration may be required.
- 7) Council will assess the suitability of manoeuvring areas provided for large vehicles by reference to the Standard Vehicle Turning Templates which appear in Figures A.5a (small rigid truck), A.7a (large rigid truck) and A.9a (large articulated truck) of the Roads and Maritime Services publication "Policies Guidelines and Procedures for Traffic Generating Developments".
- 8) Adequate space is to be provided within the site for the loading, unloading and fuelling (if applicable) of vehicles. These areas shall be screened from the road.
- 9) Car parks, aisles and manoeuvring areas shall be designed with function and safety in mind, and have minimum dimensions conforming with the Australian Standards 2890 Parking Facilities. The relevant parts of this standard are AS2890. 1 Off-street parking, AS2890.2 Commercial vehicle facilities and AS2890.3 Bicycle parking facilities. In addition, the following elements should also be considered:

Where the nature of the industrial development will attract clients/visitors to the site, the following elements shall be included in the car park design:

- a) The internal (vehicular) circulation network is to be free of disruption to circulating traffic and ensure pedestrian safety;

- b) The car park should, where possible, be designed with wheel stop kerbs only, rather than a barrier kerb between parking areas and pedestrian pathways;
- c) The movement of pedestrians throughout the car park is clearly delineated by all users of the car park and minimises conflict with vehicles;
- d) Where parking spaces are to be provided for people with disabilities, these spaces are to be:
 - i) Suitably located near entrances to the building, lifts and access ramps (if required);
 - ii) Provided in accordance with AS1428.1 Design for Access and Mobility; and
 - iii) Supplemented by the installation of appropriate tactile pavement treatments where required;

Major developments such as multi unit industrial developments and other significant industrial developments shall make adequate provision for bicycle parking.

4.7. Fencing

A. Objectives

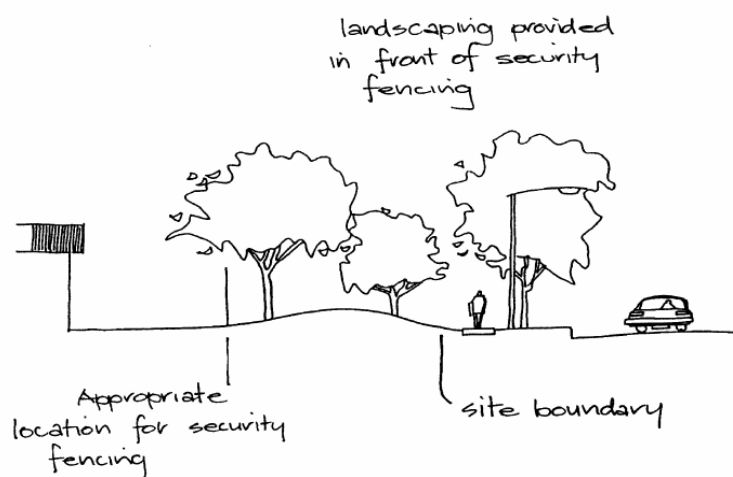
The objective for this section is to ensure that the design and location of fencing is integrated within the development, and is suitable for its purpose and setting.

B. Controls

General

- 1) The location and design of fences, including the materials used to construct the fencing, should:
 - a) Be sympathetic to the natural setting and character in form, materials and colour;
 - b) Maximise natural surveillance from the street to the building and from the building to the street;
 - c) Minimise the opportunities for intruders to hide;
 - d) Not impede the natural flow of stormwater drainage;
 - e) Be located wholly on the property and not encroach on another property without the consent of the adjoining property owner(s). This includes land that may be owned by Penrith City Council or another public authority;
 - f) Be constructed of non-combustible materials if located in an asset protection zone or in an area identified in a bushfire risk management plan; and
 - g) Be structurally adequate, in accordance with the Building Code of Australia, and meets the Dividing Fences Act 1991.
- 2) Fencing proposals that require development consent shall be:
 - a) positioned behind the landscaping and not along the front property boundary (as illustrated in Figure D4.16);
 - b) in circumstances where on-site detention is required within the front setback then consideration can be given to locating fencing along the property boundary however, consideration must be given to the existing streetscape character; and
 - c) a maximum height of 2.1m and of an "open" nature, e.g. decorative metal and coloured dark grey or black, or complement the adjacent fencing type.

Figure D4.16



- 3) Fencing may be positioned along the front property boundary only if:
 - a) the site is not located on, facing or fronting:
 - i) Andrews Road, Castlereagh Road, Christie Street, Forrester Road, Great Western Highway, Mulgoa Road, Old Bathurst Road, Parker Street or any other classified road or major road; or
 - ii) The main road or collector road of the industrial precinct; and
 - iii) it is decorative fencing that has an open style appearance (metal, pool type fencing); and
 - iv) the fencing is complementary to the landscaping.
- 4) Fencing shall be integrated with the overall design of the development and associated security structures, where possible.
- 5) Where site security is required, fencing shall be constructed of black plastic coated 'Chain-link' fence or an approved alternative such as a metal palisade type fence. The overall height of fencing shall be no more than 2.4m. 'Chain-link' or similar fences are not suitable to the site frontage.
- 6) Consideration shall be given to the site's front fence being a reduced height particularly around the visitor or employee parking. Alternatively, the front of the premises shall be open to the street to provide a sense of address and to contribute to the streetscape.
- 7) Gates, security structures, letter boxes and signage must complement the fencing and be considered in the overall design of the development.
- 8) Landscaping adjacent to front fencing shall not form a tall dense screen, except where required to screen outdoor storage areas or plant and equipment.
- 9) For fencing behind the building setback line, Council will consider:
 - a) Solid fencing up to a height of 2m;
 - b) Fencing up to a maximum of 2.5m (measured from natural ground level), provided that any fencing above 2m is of an open style;
 - c) Council may require such fencing to be screened with landscaping if viewed from the street or any public area, such as public open space. Appropriate landscaping can, for example, assist in minimising the occurrence of graffiti.

- 10) Barbed, razor or electric wire can be considered behind the building setback line, but must be mounted on the inside of the fence, so as not to be significantly visible from the street. Electric fencing must display appropriate warning signs and otherwise comply with all relevant legislation and standards.
- 11) On sites abutting non-industrial lots, these variations will not generally be supported because of their impact on the amenity of the adjoining property or non-industrial streetscape.
- 12) Fencing along secondary streets, unless of an open style design, must be setback behind the required landscaping.
- 13) Service yards visible from a street must be adequately screened.

4.8. Lighting

A. Objectives

- a) To encourage the installation of external lighting which does not detract from the appearance of the development or amenity of the locality;
- b) To illuminate parts of the site for security reasons and to provide increased safety in accordance with the principles of Crime Prevention through Environmental Design (CPTED); and
- c) To minimise energy waste by providing the correct lighting orientation and minimising overspill lighting.

B. Controls

- 1) Lighting details shall be provided as part of any relevant development application.
- 2) Lighting design should address the principles of CPTED (see the Site Planning and Design Principles section of this DCP) where there is significant pedestrian activity, late night work shifts or safety and security issues.
- 3) Adequate lighting should be provided to meet security requirements without excessive energy consumption. Lighting powered by solar batteries or other renewable energy sources is encouraged. The use of sensor lighting both internally and externally should also be considered.
- 4) External lighting shall be provided around doorways and windows, and in areas where goods and equipment are stored outside.
- 5) Where premises are used outside daylight hours, car parks and entrances shall be adequately illuminated.
- 6) Lighting is to be designed or directed so as to not cause light spill onto adjoining sites where there could be an impact on the adjoining site's operations, safety or amenity.
- 7) The use of lighting poles and fixtures in adjacent developments should be considered for improved precinct amenity.
- 8) All lighting shall comply with Australian Standard AS4282.

C. Lifting the Bar

The following represent some ways in which applicants can demonstrate additional commitment to the principles expressed in this DCP. Demonstration of this commitment may lead to Council considering variation of development controls. Applications that vary the development controls listed in this section will need to demonstrate that the proposed

development complies with the objectives relevant to the development controls it seeks to vary.

- a) Improved sustainability outcomes including vegetation management and landscape, water management, land management and waste management in accordance with this DCP;
- b) Increased landscape setbacks, landscape areas, street tree planting, green roofs and improved streetscape outcomes;
- c) High quality building design that is visually attractive, innovative, integrated into the landscape design, takes into account the visual catchment, and is articulated to reduce building scale and bulk;
- d) No impacts on sensitive adjacent land uses through careful site planning, building design and landscape treatment; and
- e) Conservation and adaptive reuse of industrial buildings listed as heritage items such as the World War II ammunition factory buildings in Precincts 1 and 2 (Dunheved and St Marys).

Table of Contents

<u>D5 OTHER LAND USES</u>	2
5.1 APPLICATION OF CERTIFICATION SYSTEM	2
5.2. CHILD CARE CENTRES	2
5.3 HEALTH CONSULTING ROOMS	9
5.4 EDUCATIONAL ESTABLISHMENTS	10
5.5 PARENT FRIENDLY AMENITIES	12
5.6. PLACES OF PUBLIC WORSHIP	18
5.7. VEHICLE REPAIR STATIONS	19
5.8 CEMETERIES, CREMATORIA AND FUNERAL HOMES	20
5.9 EXTRACTIVE INDUSTRIES	21
5.10 TELECOMMUNICATION FACILITIES	23
5.11 BOARDING HOUSES	25

D5 Other Land Uses

5.1 Application of Certification System

A. Background

This section of the DCP seeks to encourage applicants to design, construct and operate significant non-residential developments in a sustainable manner by applying an appropriate certification system.

B. Objectives

- a) The objective of this section is to ensure that development is undertaken in a sustainable manner, demonstrating this through the application of the Green Star and/or Australian Buildings Greenhouse Ratings (now part of the National Australian Built Environment Rating System (NABERS)) certification systems, where appropriate.

C. Controls

- 1) Non-residential developments, including mixed use developments, with a construction cost of \$1 million or more are to demonstrate a commitment to achieving no less than 4 stars under Green Star or 4.5 stars under the Australian Building Greenhouse Rating system.

5.2. Child Care Centres

A. Background

Child care centres are an increasingly important service to families with parents who work outside the home. Centres need to be conveniently located close to homes or to centres of employment, and need to be in surroundings which are both safe and enjoyable for the children.

Child care centres are increasingly becoming popular in larger commercial centres as workers can drop off/pick up children on their way to work, especially if their workplace is located in these centres.

Standards for work based child care may be varied from those expressed in this section. In particular, standards for parking and location may be varied provided that the variation does not have an adverse impact on the amenity and safety of the children in care.

Child care centres generally will not be supported if:

- a) the service provided by the centre does not meet a demonstrated need for child care services in the local area;
- b) access is from a major road or in close proximity to a major intersection where there may be safety concerns;
- c) access is from a local street where there may be impacts on amenity due to traffic and parking;
- d) the current use or any permissible use under the zoning of the adjoining premises produces unacceptable levels of noise, fumes or emissions, or poses a potential hazard by reason of activities or materials stored on site;
- e) noise produced by roads, railways and aircraft are likely to have an adverse impact on the site; or

- f) the site may be subject to contamination, within close proximity to high-voltage electricity transmission lines, or subject to external impacts that may be harmful to the staff and children;

unless the applicant can demonstrate satisfactorily that the matters listed will not have a detrimental impact on the child care centre.

B. Objectives

- a) To provide a clear planning framework for the development of child care services in the City of Penrith;
- b) To ensure that child care centres are located and designed to minimise any impact on the amenity of the surrounding area, particularly from noise and traffic;
- c) To ensure a safe and efficient road system, and to prevent direct vehicular access to or from any child care centre from a designated road;
- d) To ensure the provision of safe, convenient and attractive car parking areas;
- e) To ensure child care centres are not adversely affected by safety hazards; and
- f) To encourage the provision of facilities which aim to satisfy identified unmet demands within the City for child care.

C. Controls

1) Work Based Child Care Centres

- a) Child care centres in business or industrial areas require special consideration in respect to environmental quality and land use conflicts. Particular attention must be paid to:
 - i) Provision of an outdoor play area away from driveways or parking areas or any other source of noise or fumes;
 - ii) Protection of children from dust, fumes, noise and vibration, or other potentially dangerous impacts from industrial uses;
 - iii) Adequate safety provisions to prevent children from gaining access to other parts of the building or site; and
 - iv) Depending on the location of the centre and the size of the site, requirements for a drop off area.

2) Location

- a) Any proposed centre which:
 - i) Will cater for in excess of 40 children (including 2 or more centres in very close proximity which together will cater for more than 40 children); and
 - ii) Does not propose to cater for 0 – 2 year olds;must demonstrate that the service to be provided meets an unmet need in the community. Unmet demand in the community can be assessed through waiting lists of centres in surrounding areas, a comparison of the number of children aged 0-5 recorded in the census for the area and the number of child care places available.
- b) Child care centres shall be located in close proximity to other community activities and facilities, such as schools, community facilities, places of public worship, parks that contains child play equipment, larger formal public reserves and local shopping centres.
- c) The site shall not rely on direct access from, nor be located on, a designated road, unless it can be demonstrated that the safe operation of the road and the amenity of the children attending the centre will not be affected.

- d) Access to the site shall not be located in a cul-de-sac, at an intersection, or on a minor residential road unless it can be demonstrated that additional vehicles associated with the child care centre will not create traffic conflict or have an adverse impact on the amenity of the locality.
- e) A child care centre shall not be located on land within an 85m radius of an existing or approved service station, or on land in a specific radius of an existing/approved flammable storage area under State Environmental Planning Policy No 33 Hazardous and Offensive Development.
- f) A child care centre shall not be located on land that is directly opposite to or adjacent to (including behind) an existing and lawful sex services premises and/or restricted premises.
- g) A child care centre shall not be permitted on land on which there is an electricity transmission easement, mobile phone tower or similar, or on land immediately adjacent to those structures. Centres should be located at least 500m from mobile phone towers or electricity transmission easements.
- h) A child care centre should not be located on land below the flood planning level and on land that cannot be safely and effectively evacuated during a 1:100 ARI flood event. (See the Water Management section of this Plan for further details on the flood planning level and 1:100 ARI flood event).

3) Design, Scale and Site Frontage

- a) The scale and character of the development shall be compatible with surrounding development.
- b) The design of the child care centre must take into account nearby traffic generators, street design and the existing environment for pedestrians and cyclists.
- c) Sites must be of sufficient area to accommodate the child care centre, all required associated parking and traffic manoeuvring areas.
- d) To ensure the safe operation of car parking areas and the amenity of neighbouring residents, sites shall have a minimum frontage of 22m.
- e) Safe sight distances must be provided for all points of access to the site.

4) Built Form

- a) Child care centres catering for 15 or more children shall be purpose designed and built, to satisfy the requirements of this section and the requirements of the NSW Department of Community Services. Modifications to existing dwellings will not be supported.
- b) In residential areas, the built form of the child care centre shall be sympathetic to adjoining development in terms of height, bulk and scale.
- c) The external façade of the centre shall incorporate building materials and colours that complement the surrounding development. Council discourages the use of bright or garish colours.
- d) Whilst it is preferable that child care centres are located at ground level, this may not be possible in commercial or industrial areas. Applications for centres above ground level will need to address the following:
 - i) Access for parents and caregivers to drop off/pick up children; and
 - ii) Availability of outdoor play space, or its equivalent.

5) Vehicle Access, Circulation and Parking

- a) Vehicle circulation and car parking areas shall be designed to allow safe drop-off and collection of children as well as the safe movement and parking of staff, parents, visitor and service vehicles.
- b) Access driveways should not be located opposite, or in close proximity to, road intersections.
- c) Parking shall be provided in accordance with the standards in the Transport, Access and Parking section of this Plan.
- d) The parking area is to be designed to ensure:
 - i) The safe drop off and collection of children, including direct, safe pedestrian access between the parking area and the entrance to the centre;
 - ii) Safe movement and parking of staff, parents, visitors and service vehicles; and
 - iii) All vehicles can enter and exit the site in a forward direction.
- e) Layout of the parking area must allow for safe access for service and emergency vehicles, such as ambulances, delivery and maintenance vehicles.
- f) Where the child care centre is located in the same building or development as other land uses, the parking and access arrangements for each separate use will need to be separately calculated and provided on site.
- g) A traffic impact assessment may be required for the development of a child care centre proposing to cater for 40 children or more. The assessment should address:
 - i) Site characteristics and the surrounding area;
 - ii) Expected trip generation;
 - iii) Parking requirements, including the design of parking areas, and any pick-up and drop-off facilities;
 - iv) Existing traffic conditions and any future changes expected to the traffic conditions;
 - v) Current road safety conditions, including an accident history in the locality; and
 - vi) The expected impact of the proposed development on the existing and future traffic conditions.

6) Noise

- a) Outside playing areas shall be designed and located to minimise noise impact on any noise sensitive adjacent properties. Separation between boundary fencing and areas occupied by the children may be required.
- b) Where there may be noise impact on adjacent properties, fencing shall be of a height, design and material (e.g. masonry) suitable to contain noise generated by the children's activities. This ensures the children may play outside without time limitations in accordance with licensing requirements.
- c) Where a site may be affected by traffic, rail or aircraft noise, the child care centre shall be designed to minimise any impact on the children and staff. A report from an acoustic consultant may be required to support the proposal. (Design elements may include double glazing, insulated walls, locating sleeping rooms in protected areas and solid fencing).
- d) A noise impact assessment may be required for the development of a child care centre proposing to cater for 40 children or more, or where surrounding land uses may have an impact on the proposal.

The objectives should be to limit the impact of the child care centre on adjacent properties, and also to limit the impact noise from external sources may have on the child care centre. While noise can be measured, the intent is to also minimise nuisance which is subjective by nature. This may be achieved either by physical separation, design and layout of the centre or by implementing noise mitigation measures, such as acoustic treatments to buildings.

- e) A noise impact assessment report should address the relevant provisions of the Noise and Vibration section of this Plan.

7) Shade

- a) Outdoor play areas and transition areas (between indoor and outdoor areas) are to be provided with appropriate safe shade requirements. Safe shade may be created by vegetation or shade structures.
- b) All active areas containing play equipment or areas where children play for extended periods of time (such as a sand pit) are to be shaded throughout the year.
- c) Movable play equipment used for active play should be placed in the shade. (This should be a combination of built and natural shade).
- d) All shade structures in the play areas should be designed in accordance with AS/NZS 4486.1. If located over play equipment, the shade structure should not have footholds or grip surfaces that will allow for climbing.
- e) Outdoor teaching areas are to be provided with year round protective shade.
- f) Outdoor eating areas are to be provided with year round protective shade.
- g) Other open areas are to be partially shaded.
- h) Any transition zone, between indoor and outdoor areas, such as a verandah, should be permanently shaded and protected in wet weather.
- i) The minimum width of a verandah should be 4m to allow for shaded play space underneath.

8) Landscaping

- a) Landscape planting shall complement the building(s) and the streetscape, and provide screening for car parking and outdoor playing areas.
- b) Landscaping shall be established prior to the use commencing.
- c) Childproof fencing and gates shall be provided around the outdoor play areas, and to the entrance of the child care centre. Details of all fencing shall be included on the landscape plan.
- d) Landscape planting (a minimum width of 2m) shall be provided along the front boundary of the site.
- e) Additional landscape planting may be required along the side boundaries to integrate the development with neighbouring buildings and the streetscape, and to reduce the impact of vehicle lights on adjoining properties.
- f) A landscape plan shall be prepared and submitted with the development application, in accordance with the Landscape and Design section of this Plan.
- g) Plant species shall be chosen to address the characteristics of the site and shall:
 - i) Provide protection from prevailing winds;
 - ii) Provide screening to minimise impacts on privacy and/or the streetscape and adjacent buildings;

- iii) Provide shelter and shade;
- iv) Reduce reflection from bright surfaces;
- v) Emphasise pedestrian and vehicular routes;
- vi) Ensure visibility of outdoor playing areas;
- vii) Not include plants which may be toxic, create allergic reactions, or which are prickly or otherwise unsafe; and
- viii) Provide interest and variety to enhance children's experience.

9) Private Dwelling

- a) A dwelling may be attached to, part of, or associated with, a child care centre.
- b) The dwelling shall be provided with a separate and private open space area (with minimum dimensions of 4m x 6m), which is directly accessible from the internal living areas of the dwelling and orientated to optimise solar access.
- c) The dwelling shall include a kitchen, bathroom, laundry, living area and amenities, which are separate to those for the child care centre, for the use of the residents.
- d) A minimum of one separate parking space shall be provided for the residents of the dwelling.
- e) The species and location of trees and planting provided for a dwelling associated with a child care centre should ensure there is no likelihood of falling branches, and should not be toxic, create allergic reactions, or be prickly or otherwise unsafe.
- f) A swimming pool or spa pool, existing or proposed, associated with a dwelling attached to a child care centre must be securely fenced (in accordance with the requirements of the *Swimming Pool Act 1992*) to prohibit access to the children in care.
- g) The pool shall be suitably screened from view of the children in care.

10) Out-of-School Hours Care (OOSH)

Council's approval is required for the operation of out-of-school hours care (OOSH) – either as part of an existing child care facility or as a separate activity.

- a) Where the operator of an existing child care centre proposes to establish an OOSH service, the centre shall provide permanent separation of the OOSH facilities.
Operational elements which shall be provided separately for each service include:
 - i) Amenities;
 - ii) Playroom(s);
 - iii) Outdoor play area(s), and
 - iv) Staff.
- b) Car parking spaces for the OOSH care shall be provided in accordance with the requirements of the Transport, Access and Parking section of this Plan and, if applicable, shall be in addition to the parking area for the child care centre.

D. Lifting the Bar

The following represent some ways in which applicants can demonstrate additional commitment to the principles expressed in this DCP. Demonstration of this commitment may lead to Council considering variation of development controls. Applications that vary the development controls listed in this section of this Plan will need to demonstrate that the proposed development complies with the objectives relevant to the development controls it seeks to vary.

- a) All child care centres are to demonstrate a commitment to achieving no less than 4 stars under the Australian Building Greenhouse Rating Scheme. An Energy Efficiency report is to be provided to Council as part of the development.
- b) All home-based child care or family day care home services are encouraged to:
 - i) Provide food consistent with the principles outlined in the National Quality Improvement and Accreditation System for Child Care;
 - ii) Participate in available training opportunities concerning food safety and nutrition (e.g. the 'Caring for Children' program) or other programs run by Council, TAFE, the University of Western Sydney or Sydney West Area Health Service; and
 - iii) Seek professional advice, where appropriate, from trained dietitians and/or nutritionists.
- c) All child care centres (including centre based and home based) are encouraged to:
 - i) Minimise waste through the use of recycling programs for paper, cardboard, aluminium, glass and PET products;
 - ii) Provide facilities/services which will satisfy identified unmet demands within the City for child care; and
 - iii) Participate in the NSW Cancer Council's SunSmart Early Childhood program.

E. Other Relevant Information

Consent and Licensing Requirements

- a) All child care centres must be approved by Council and licensed by the NSW Department of Education and Communities under the Children (Education and Care Services) National Law (NSW); Education and Care Services National Regulations and National Quality Framework prior to commencing operation.
- b) Home-based child care may be licensed as a Family Day Care service or within the requirements of the Department of Education and Communities.
- c) Where a child care centre for pre-school aged children and an OOSH service operate together, or from the same building, both services must be approved by Council, and the Department of Education and Communities must be notified.
- d) Development consent is required from Council for an expansion or alteration to an existing, approved child care centre. Changes may include an increase to the approved number of children, an alteration to the hours of operation or the establishment of OOSH care.
- e) Any application for an expansion or alteration to an existing child care centre will be considered on its merits, and include an assessment of the current operation of the centre.

Any subsequent development consent issued by Council may require a new licence from the Department of Education and Communities.

5.3 Health Consulting Rooms

A. Background

Health consulting rooms are different to medical centres in that they tend to operate in residential neighbourhoods, often on the fringe of commercial centres. Although this can provide better access to health care services, it can also lead to a greater potential for negative impacts on the amenity of the surrounding area.

The provisions contained in this section apply to the establishment of new health care consulting rooms and the enlargement or expansion of existing health consulting rooms.

B. Objectives

- a) To clarify those health care services considered appropriate to be incorporated in health consulting rooms;
- b) To provide clear guidelines for the establishment of health consulting rooms within the City; and
- c) To ensure that health consulting rooms are located and designed in a manner which minimises the likely impact on the amenity of the surrounding locality.

C. Controls

1) Location

- a) Health consulting rooms in residential areas shall not include procedures such as X-rays, ultrasounds, cat-scans, radiography, pathology tests or the like. These services are to be separated from residential activities and only located either in or immediately adjacent to commercial centres or precincts established specifically for other non-residential activities.
- b) Health consulting rooms shall not be located on sites where they are likely to have a significant impact on adjoining and surrounding residences, including but not limited to traffic and noise impacts.
- c) Health consulting rooms should not be located in a cul-de-sac or on a no through road, or in a location where additional vehicles may create traffic conflict or an adverse impact on the amenity of the area.
- d) The site is to have a minimum effective lot width of 18m to provide sufficient area for parking and access, as well as achieve an appropriate separation between the development and adjoining properties.

2) Access and Parking

- a) Parking areas shall be easily accessible from the street and suitably screened by landscaping. Vehicular access into the car parking area is to include a landscaped area, which will act as a noise and visual buffer to adjoining properties. Parking areas, where possible, are to be located to the rear of sites where they do not impact on streetscape character.
- b) Parking for a health consulting room shall be provided at the rate specified in the Transport, Access and Parking section of this Plan.
- c) In instances where one practitioner is operating as a home business, the parking arrangements will be assessed on merit.

3) Visual and Noise Impact

- a) Landscaping is to be established and maintained to adequately screen the development from adjoining residential properties. Landscaping shall be established prior to the use commencing.
- b) The development is to be compatible with the existing residential streetscape. Renovations and/or additions, which seek to remove the residential character of the dwelling house, will not be supported.
- c) The scale and character of the development is to be compatible with surrounding residential development.
- d) Fencing shall be of a height, design and material suitable to contain noise generated from cars accessing and parking within the site, while being compatible with the residential environment.
- e) Business identification signs should be appropriately designed and located to ensure that it is visually compatible with the surrounding development.
- f) A standard doctors' 'cube' (having minimum dimensions of 3m by 4m) may be erected in the front boundary setback of the property.

5.4 Educational Establishments

A. Background

Given their scale, form and potential impact, there is a need to ensure educational establishments are located and designed in such a way as to minimise their impacts, particularly on surrounding areas. It is also important to ensure that nearby land uses do not have an adverse impact on children's health and learning.

B. Objectives

- a) To ensure that the design and location of educational establishments does not adversely impact on the amenity of the area or neighbouring properties, including properties used for agriculture;
- b) To ensure that educational establishments are located on sites of sufficient size to accommodate buildings, sports fields, parking areas and other associated facilities;
- c) To ensure that educational establishments are located on sites which have sufficient infrastructure and services to support the use;
- d) To ensure that the road access to educational establishments is sufficient to cater for expected traffic with minimal impact;
- e) To ensure that educational establishments do not locate near uses that will have an adverse effect on children's health or learning; and
- f) To ensure that, where they are located on a major road, the visual impact of educational establishments is consistent with the character of the area.

C. Controls

1) Location and Design

- a) Educational establishments must locate on sites which comply with the minimum areas set out in Table D5.1 below.

Table D5.1: Minimum site requirements

Type of educational establishment	Minimum area
Primary School (Kindergarten to Year 6)	3 hectares
High School (Year 7 to Year 12 OR Kindergarten to Year 12)	6 hectares
Tertiary Institution (University or TAFE College)	6 hectares

b) Educational establishments must be designed with regard to:

- i) Buffer zones to minimise impact on adjoining land uses, including agricultural uses in rural areas;
- ii) Landscaped front setbacks to reduce visual impact;
- iii) Appropriate building heights and setbacks to minimise visual intrusion in rural areas; and
- iv) Separate play areas for primary and secondary students.

2) Servicing

- a) Educational establishments catering to over 50 students must be connected to all services, including power, reticulated water and reticulated sewer.
- b) Educational establishments catering to less than 50 students must demonstrate how servicing needs will be met. Applications should also address the provision of services should growth in student numbers require it.

3) Transport, Access and Parking

- a) Schools catering to over 50 students must have access to public transport. Applications should outline measures to be taken to encourage use of public transport.
- b) Educational establishments must be designed to ensure:
 - i) Separate parking areas for staff and parents/students;
 - ii) Adequate drop off/pick up zones, separate to bus access; and
 - iii) Safe pedestrian access from bus stops and drop off/pick up zones.
- c) A traffic impact assessment may be required for the development of an educational establishment. Applicants should confirm this requirement with Council prior to lodging a development application.

D. Penrith Anglican College

The following controls apply specifically to Penrith Anglican College, Wentworth Road, Orchard Hills.

- 1) The rural viewscape and character of the site is to be protected by locating buildings, recreation areas and ancillary structures in distinct areas as follows:
 - a) School extension area – to be used for substantial structures, car parking and main access roads;
 - b) Active recreation areas – to be used for the purposes of active recreation facilities, including sports fields and minor or ancillary structures;

- c) Transmission easement – to be used primarily for passive recreation and drainage infrastructure, with some encroachment of playing fields acceptable provided that Transgrid or any other relevant authority has given written approval for the encroachment.
- 2) The proposed development is to allow the existing watercourse on the site to be relocated and rehabilitated without the use of pipes or other engineering devices:
 - a) To emulate a naturally functioning stream with a minimum riparian width of 10m along both sides of the watercourse (measured from the top of bank);
 - b) To provide vegetated habitat refuges (both terrestrial and aquatic); and
 - c) To facilitate treatment of stormwater runoff outside the riparian corridor before it enters the watercourse.

5.5 Parent Friendly Amenities

A. Background

Parent friendly amenities provide facilities for the use of carers to attend to the personal needs of babies/toddlers. This includes breastfeeding, feeding fluids and solids, changing nappies, etc. These rooms need to be purpose designed by the builder/designer so that they are in an accessible location and are functional.

Council is committed to ensuring and promoting the health of its residents, with particular focus on the health and safety requirements of babies, young children and their parents.

B. Development Covered by this Section

This section applies to all new development classed as 6 or 9 under the Building Code of Australia (BCA) and may also be required to be provided as a result of substantial alterations and additions or a change of use to one of the above premises. “Class 6 or 9 of the Building Code of Australia” is defined in Appendix F1 – Definitions.

C. Objectives

- a) To ensure that all developments likely to be frequented by parents and children have suitable parenting facilities in public places that support and encourage breastfeeding;
- b) To ensure that safe and accessible toilets are provided in developments that cater for young children and their parent(s);
- c) To ensure that parent friendly amenities are suitable for use by both male and female carers;
- d) To provide parent friendly toilets that are appropriately located to minimise likelihood of embarrassment to all users;
- e) To ensure that all baby care rooms are of an adequate design and size, and are appropriately equipped.
- f) To ensure that all baby care rooms are maintained to appropriate standards.
- g) To ensure that approved baby care rooms continue to be used in accordance with development consent.

D. Controls

1) Provision of Parent Friendly Amenities

- a) Parenting rooms and parent friendly accessible toilets are to be provided for all developments classed as 6 or 9 under the BCA, including substantial alterations and

additions, and where a change of use is proposed resulting in the tenancy being classed as 6 or 9 buildings.

- b) Certain types of class 10a buildings are to be provided with parent friendly accessible toilets.
- c) Table D5.2 outlines the minimum requirements for various types of development.

Table D5.2: Minimum requirements for various types of development

Type of development	What is required
<ul style="list-style-type: none"> Community facilities (such as neighbourhood centres, community halls, other types of publicly owned facilities including temporary buildings), which are less than 300m² Gross Floor Area (GFA). Restaurants with greater than 30 seats (including any outdoor dining area). Amenity building associated with a sporting field/recreation facility less than 1,000m² GFA. All other development (classed 6, 9 and 10a buildings) covered by this section which is less than 1,000m² GFA. 	<ul style="list-style-type: none"> Change table in male, female and disabled toilets. Where public sanitary facilities are required or provided, the facilities should be designed to incorporate parent friendly accessible toilets.
Community facilities (such as neighbourhood centres, community halls, other types of publicly owned facilities including temporary buildings) and places of public worship which are 300m ² – 1,000m ² GFA	<ul style="list-style-type: none"> 10m² Parenting Room (see sections 2 and 3 below for details). Where public sanitary facilities are required or provided, the facilities should be designed to incorporate parent friendly accessible toilets.
All development covered by this section with GFA between 1,001m ² – 2,000m ² .	Parenting rooms and parent friendly accessible toilets should be incorporated, with the baby care room having a minimum 20m ² GFA (see sections 2 and 4 below for details).
All development covered by this section which is greater than 2000m ² GFA	Parenting rooms and parent friendly accessible toilets should be incorporated, with the baby care room having a minimum 30m ² GFA (see sections 2 and 5 below for details).

- d) All parent friendly accessible toilets are to be appropriately sign posted, with the signage to be approved by Council.
- e) Details of the minimum standards, as described in Table D5.2, should be shown on the plans submitted with the development application.
- f) The applicant is also required to submit a cleaning procedure, routine and schedule.

- g) Upon completion of any parenting room, an initial inspection must be made by Council's Environmental Health Officer (EHO) to ensure that the parenting room can be accredited by the Australian Breastfeeding Association. Council will conduct an annual inspection of parenting rooms to ensure the room is appropriately maintained and continues to be used in accordance with the development consent.

2) Common Requirements for All Sizes of Parenting Rooms

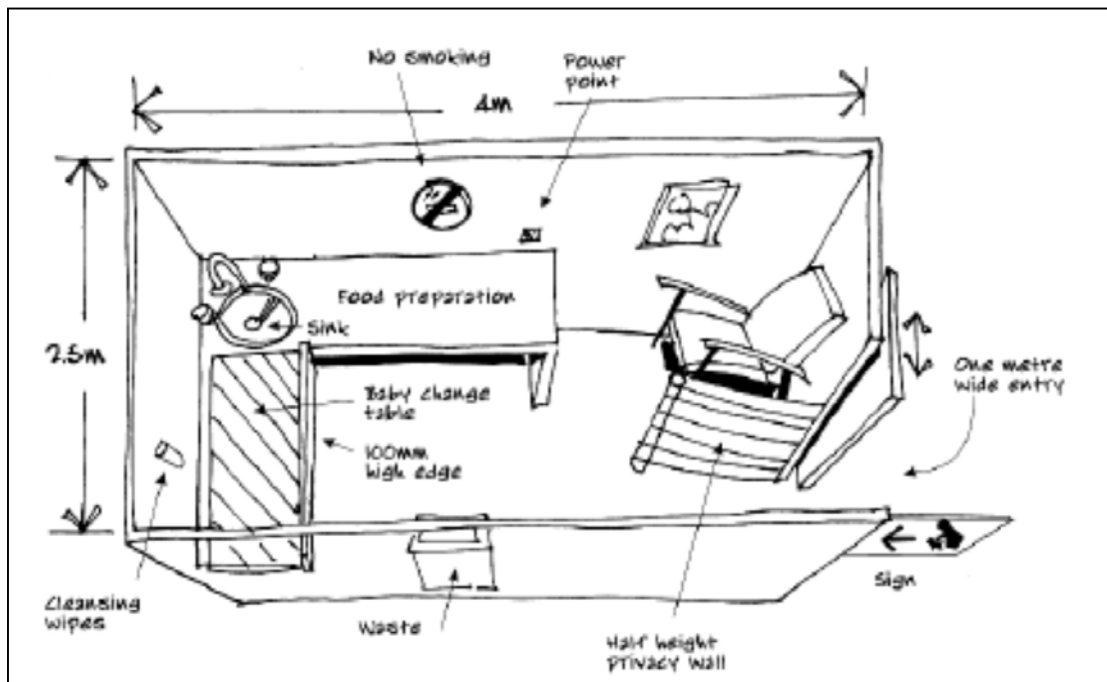
- a) The design and construction of the room must facilitate easy cleaning.
- b) The facility must be kept in a clean and tidy state at all times. A regular maintenance and cleaning program is to be implemented.
- c) A minimum of one sink with hot and cold water must be provided. All hot water is to be thermostat regulated to ensure the water temperature is not above 50 degrees Celsius. Hand drying facilities are to be provided adjacent to the sinks.
- d) Bench space to allow food preparation is to be provided. The bench space is to be a minimum 950mm wide by 1.8m long.
- e) A baby change table is to be provided, which must have either a protective side of 100mm or a belt, to prevent a baby from rolling off.
- f) Cleansing wipes are to be provided to clean the baby change table.
- g) A nappy disposal unit is to be provided.
- h) The parenting room must be a non-smoking facility and signposted as such. Signs can be obtained at <http://www.health.nsw.gov.au>.
- i) Adequate directional signage is to be provided to ensure the room is easily found. Signs should use a symbol that will be easily interpreted by people of culturally and linguistically diverse backgrounds, and will enable male parents/carers to also access and use the room.
- j) Ventilation must be provided in accordance with the AS 1668 Part 2 Acceptable indoor air qualities.
- k) A door entry of a minimum width of 1m is to be provided to allow access for single and double prams. The doors are to be manual, light to push and have the ability to be propped open for pram access.

3) Additional requirements for 10m² parenting rooms

The following controls are in addition to the general requirements listed above.

- a) The parenting room component is to have a minimum GFA 10m².
- b) Parenting rooms with a GFA of 10m² must have a minimum of one comfortable seat, a power point and a waste container with tight fitting lid. The seat should be suitably screened from the remainder of the room to ensure there is less likelihood of embarrassment should a male parent/carer also require use of the parenting room.

Figure D5.1: Example of baby care room within 10m²

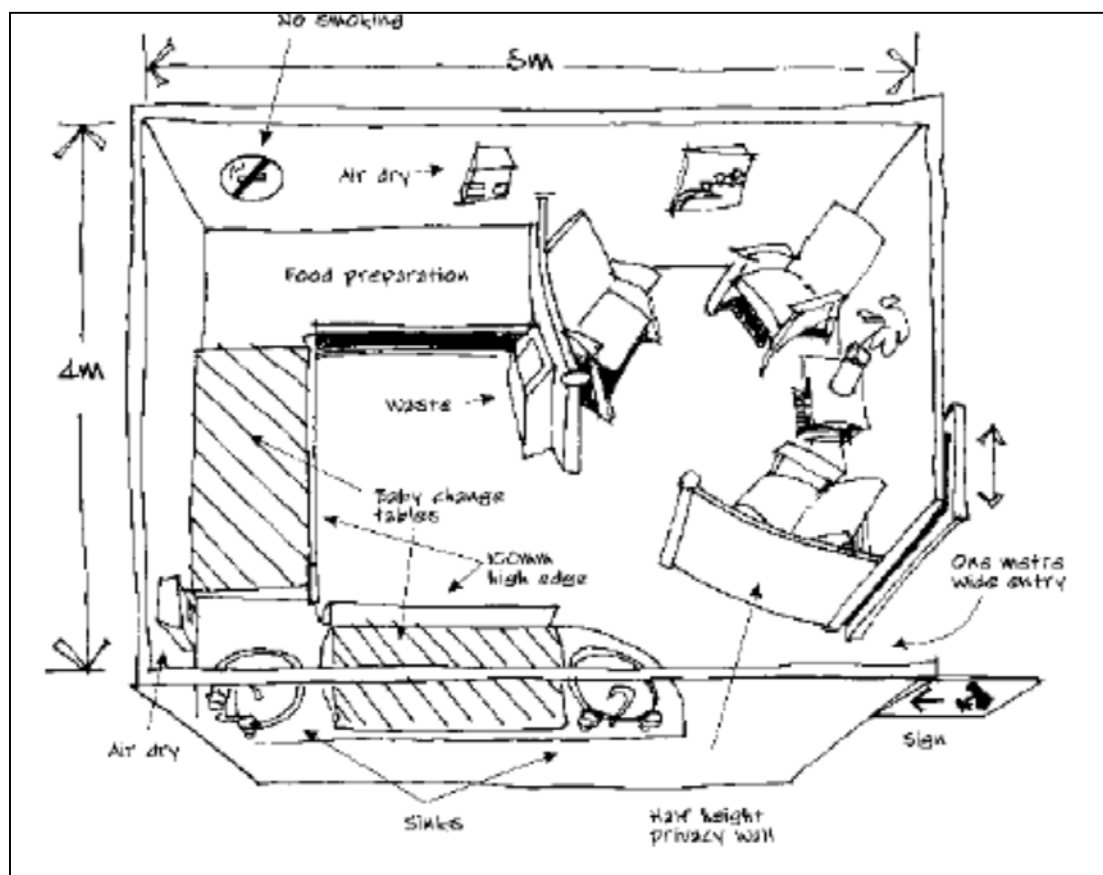


4) Additional requirements for 20m² parenting rooms

The following controls are in addition to the general requirements listed above.

- a) The parenting room component is to have a minimum GFA of 20m².
- b) Parent friendly accessible toilets are to be incorporated in parenting rooms.
- c) The parent friendly accessible toilets should include a toddler toilet and adult toilet. The toddler toilet should have a low wash basin with automatic cut off taps. The door to the toddler toilet should be able to be pushed open from the inside. Appropriate directional signage indicating the parent friendly accessible toilets and parenting rooms is to be installed.
- d) A private area should be provided for mothers breastfeeding, so that male carers can access the room without disturbing them.
- e) There should be two comfortable seats, a power point, and a waste container with tight fitting lid.
- f) The seats should be suitably screened from the remainder of the room/parent friendly accessible toilets to ensure there is less likelihood of embarrassment should a male parent/carers also require use of the parenting room.

Figure D5.2: Example of baby care room within 20m²

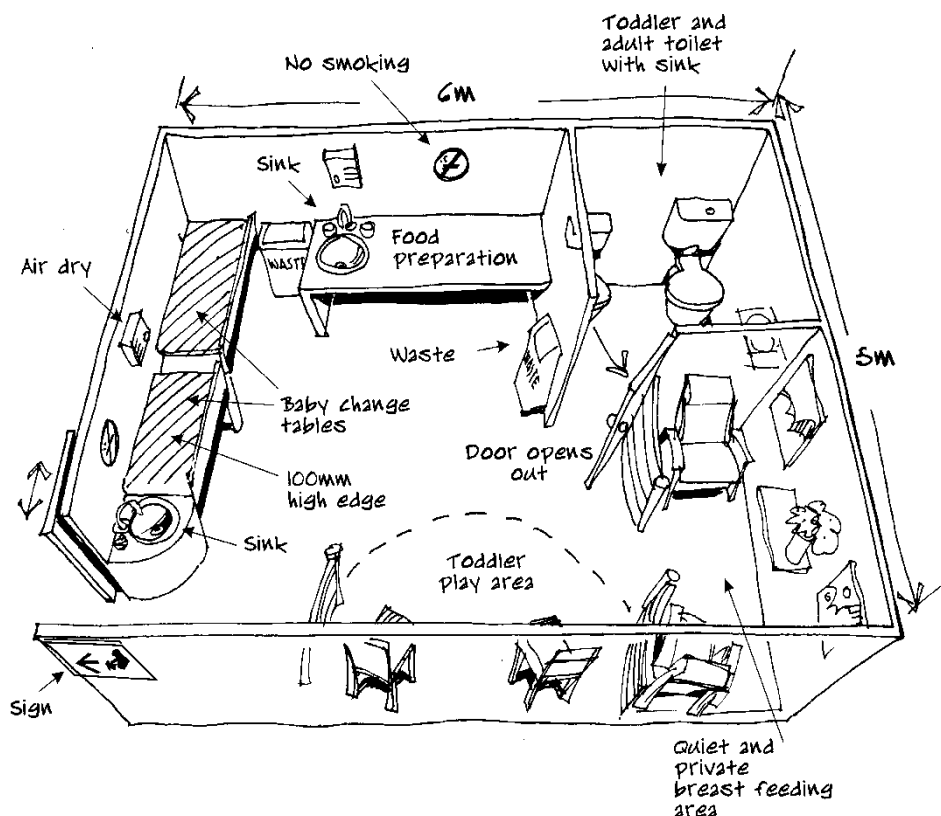


5) Additional requirements for 30m² parenting rooms

In addition to the general requirements for 20m² parenting rooms, the parenting room component with a GFA of 30m² is to provide:

- a) A minimum of 3 comfortable seats and one power point;
- b) A minimum of 2 baby change tables, which must have either a protective side of 100mm or a belt, to prevent a baby from rolling off;
- c) 2 sinks with hot and cold water;
- d) A waste container and nappy disposal units with tight fitting lids;
- e) A private area within the parenting room for breastfeeding mothers so that male carers can access the room without causing discomfort to either party;
- f) A confined and safe play area for toddlers; and
- g) Provision of a toddler toilet and adult toilet. The toddler toilet is to meet the following requirements:
 - i) Low wash basin with automatic cut off taps.
 - ii) A door able to be pushed open from the inside.

Figure D5.3: Example of baby care room within 30m²



D. Lifting the Bar

The following represents some ways in which applicants can demonstrate additional commitment to the principles for parent friendly amenities expressed in this DCP. Demonstration of this commitment may lead to Council considering variation of development controls. Applications that vary the development controls listed in this section of this Plan will need to demonstrate that the proposed development complies with the objectives relevant to the development controls it seeks to vary.

Suggested additional standards for all baby care rooms:

- a) Provision of a paper cup dispenser
- b) Provision of a dispenser machine to buy disposable nappies.
- c) Entry doors, if made of glass, should be safety glass.

Suggested additional features for 10m² parenting rooms

- a) Provision of cleansing wipes for cleaning the baby change table;
- b) Provision of a nappy disposal unit;
- c) Access for fathers and male carers who need to care for an infant without disturbing breastfeeding women;
- d) Provision of bench space (minimum 950mm wide and 1.8m long) to allow for food preparation; and
- e) Incorporation of parent friendly accessible toilets within the parenting room.

Suggested additional features for 20m² parenting rooms

- a) Provision of cleansing wipes for cleaning baby change table;
- b) Provision of a nappy disposal unit;
- c) Provision of a dispenser for disposable nappies; and
- d) Provision of bench space (minimum 950mm wide and 1.8m long) to allow for food preparation.

Suggested additional features for 30m² parenting rooms

- a) Provision of cleansing wipes for cleaning baby change table;
- b) Provision of a dispenser for paper cups;
- c) Provision of a dispenser for disposable nappies; and
- d) Entry doors, if made of glass, should be safety glass.

Other development

- a) Development that may not require provision of parent friendly amenities may still benefit from the provision of such a facility.

5.6. Places of Public Worship

A. Background

Places of public worship can vary remarkably in size and impact, from a high intensity, urban use to a small scale, low impact use.

Although small scale, traditional places of public worship may have minimal impact, it is increasingly common for this type of use to incorporate activities which operate 7 days per week, including for youth groups, community groups, parent groups, etc. This can create an essentially urban use. It is also becoming common for places of public worship to be quite large, so additional restrictions need to be placed on these larger establishments to minimise their impact on surrounding uses.

B. Objectives

- a) To ensure that the design and location of places of public worship do not adversely impact on the amenity of the area or neighbouring properties, including properties used for agriculture;
- b) To ensure that places of public worship are located on sites of sufficient size to accommodate buildings, parking areas and other associated facilities;
- c) To ensure that places of public worship are located on sites which have sufficient infrastructure and services to support the use;
- d) To ensure that the road access to places of public worship is sufficient to cater for expected traffic with minimal impact; and
- e) To ensure that, where they are located on a major road, the visual impact of places of public worship is consistent with the character of the area.

C. Controls

1. Location and Design

- a) A place of public worship with a capacity of more than 100 persons must locate on a road with sufficient capacity to accommodate likely traffic generation.

- b) Where a place of public worship will be visible from a designated road, information must be submitted with the development application to demonstrate how the visual impact of the building will be minimised.
- c) Places of public worship in rural or environmental zones must be designed to complement the character of the surrounding area.
- d) Places of public worship must be located on sites of sufficient size to accommodate all proposed buildings, parking areas, outdoor areas, etc.
- e) Where a place of public worship is to be located immediately adjacent to a property used primarily for residential purposes (including rural living or seniors living), a buffer zone of a minimum 10m in rural or environmental zones or 5m in all other zones must be provided to the side and rear boundaries. This buffer zone shall be landscaped and shall not be used for parking areas or the like.
- f) Buffer zones should also be considered to minimise the impact of places of public worship on agricultural uses in rural areas.

2. Servicing

- a) A place of public worship with a capacity of more than 100 persons must be connected to all services, including power, reticulated sewer and reticulated water.

3. Transport, Access and Parking

- a) A place of public worship with a capacity of more than 100 persons must demonstrate how sustainable modes of transport will be encouraged. This may include location close to public transport, provision of transport for worshipers (mini bus or similar) or some other means to reduce the reliance on transport by private vehicle.
- b) A traffic impact assessment may be required for the development of a place of public worship.
- c) Parking shall be provided in accordance with the standards in the Transport, Access and Parking section of this Plan.

4. Noise

- a) A noise impact assessment may be required for the development of a place of public worship and, if required, should address the provisions of the Noise and Vibration section of this Plan.

5.7. Vehicle Repair Stations

A. Background

Vehicle repair stations have particular impacts relating to the storage of chemicals, storage of vehicles awaiting repair and the parking of vehicles.

B. Objectives

- a) To ensure that satisfactory arrangements are made for landscaping, parking and disposal of wastes;
- b) In rural villages, to allow vehicle repair stations of a scale oriented to providing a local service; and
- c) To discourage developments which have an impact on rural amenity and the rural character of the villages.

C. Controls

1. General

- a) Adequate parking for employees and visitors should be provided (including cars waiting for servicing).
- b) Satisfactory arrangements should be made for the disposal of wastes including installation of a grease trap as determined necessary by Council's Health and Building Unit.

2. Rural areas

- a) Applications for vehicle repair stations which service the local community will be considered. Applicants should demonstrate the area from which customers are likely to be drawn.
- b) A maximum of two work bays will be permitted.
- c) Work bays should be screened from public view by orientation of the building or landscaping and fencing works.
- d) The building should be designed to minimise adverse visual impacts on the villages and integrate with the landscape and character of the locality.
- e) Noise generated by the development shall not adversely affect nearby properties or the rural amenity.

5.8 Cemeteries, Crematoria and Funeral Homes

A. Background

Cemeteries and crematoria can require large sites, and can have an impact on the amenity of the surrounding area, primarily due to traffic generation.

B. Objectives

- a) To ensure the operation of cemeteries, crematoria and funeral homes does not have a significant negative impact on the surrounding area, including properties used for agriculture;
- b) To ensure sufficient buffer zones are provided around the edge of sites to minimise impact on adjoining land uses; and
- c) To ensure that uses locate on roads with sufficient capacity to accommodate likely traffic generation.

C. Controls

- 1) Cemeteries, crematoria and funeral homes may not locate immediately adjacent to properties used primarily for residential development only (including rural residential/rural living or seniors housing) unless a sufficient separation can be obtained between any buildings on the site and any adjacent dwellings. The extent of the separation needed will vary with the scale of the proposed development.
- 2) Sufficient separation should also be provided to minimise potential conflicts between cemeteries and crematoria and properties used for agriculture in rural areas.
- 3) Cemeteries and crematoria must locate on a site with a minimum area of 10 hectares.
- 4) A landscaped buffer zone 15m wide must be provided to the side and rear boundaries of the site.

- 5) Cemeteries, crematoria and funeral homes must locate on a road with sufficient capacity to accommodate likely traffic generation.
- 6) A traffic impact assessment may be required for the development of a cemetery, crematorium or funeral home.
- 7) Cemeteries and crematoria must comply with relevant legislation including the *Public Health Act 1991* and *Protection of the Environment Operations Act 1997* and supporting regulations.

5.9 Extractive Industries

A. Background

Extractive industry includes the winning of sand, soil, gravel, rock or similar materials from the ground, and includes excavating, dredging, tunnelling or quarrying. It also includes the storage, stockpiling and processing of extracted materials.

B. Objectives

- a) To consider the social, economic and environmental issues in the assessment and management of extractive industries;
- b) To implement the objectives of international and nationally recognised environmental standards;
- c) To encourage community participation in all phases of extractive industry development;
- d) To provide sound technical parameters to facilitate the orderly development of extractive resources within environmentally sensitive regions; and
- e) To conserve the biological and cultural diversity and quality of the City of Penrith.

C. Controls

1) Setbacks

- a) Extractive industries including all facilities, buildings and operations should be setback no less than:
 - i) 40m from adjoining property boundaries;
 - ii) 40m from a public road;
 - iii) 40m from any boundary to a National Park or State Forest or Unalienated Crown Land;
 - iv) 40m from any site or relic of heritage, archaeological, geological, cultural significance;
 - v) 40m from the top bank of a watercourse or otherwise to the requirements of the NSW Office of Water;
 - vi) 50m from an agricultural or rural land use;
 - vii) 100m from a public or community facility; and
 - viii) 100m from a residence not associated with extraction.

2) Visual Amenity and Scenic Quality

- a) Applicants must submit a Landscape Site Analysis Plan, which identifies and assesses the scenic qualities, landscape constraints and options for landscape protection of the proposed extraction site; and demonstrates that areas of high visual sensitivity are

protected or enhanced (see Appendix F3 – DA Submission Requirements for more detail).

- b) Machinery and equipment associated with extraction should be stored in buildings and structures which are of a height, bulk and scale which is proportional to the surrounding landscape, and which are constructed of non-reflective materials;
- c) Perimeter screen planting of sufficient height to soften the visual impact of extraction sites when viewed from surrounding places must be provided;
- d) Extraction sites are to be rehabilitated to a final landform compatible with the shape, grade, level, form, land use, landscape quality and biodiversity of the surrounding terrain.

3) Dust and Noise Suppression

- a) Proponents shall submit a Noise Impact Statement which is to demonstrate that noise from the proposal will not have a significant negative impact on the surrounding area (see Appendix F3 - DA Submission Requirements for more detail).
- b) Proponents are encouraged to implement the extraction “cell” technique as a means of facilitating acoustic shielding around worked extraction sites.
- c) Proponents should ensure that road traffic noise is minimised to reduce potential impacts upon the acoustic environment of residents and community facilities within the locality.

In this regard, proponents should indicate the special transport needs of the activity, which are most likely to generate noise outside normal operating hours.

- d) The hours of operation of extraction and the transportation of materials are between 7.00am to 6.00pm Monday to Friday inclusive, and 7.00am to 4.00pm Saturday.

Variations to these hours may be justified having regard to the nature and location of a particular project.

- e) Proponents shall prepare a Dust Suppression Plan which identifies the range of measures to be used to minimise dust generation from both operations and stockpiles (see Appendix F3 – DA Submission Requirements for more detail).

4) Transport and Access

- a) All internal access roads associated with extractive industries should be at least 12m wide.
- b) Designs of internal access and intersection points will be considered by Council having regard to the requirements of the relevant road design guidelines, the specific needs of the operation and the site characteristics. Applicants should contact Council to determine the guidelines applicable to their proposal prior to lodging a development application.
- c) Internal access roads associated with extractive industries should be set back no less than:
 - i) 10m from adjoining property boundaries;
 - ii) 50m from environmentally sensitive areas including creek lines and habitats of threatened species; and
 - iii) 100m from residences not associated with extraction.

5) Other Impacts

- a) A truck wash down area shall be provided at the exit to the site.

- b) All wastewater or runoff exiting the site shall be treated to ensure that there is no detrimental impact on receiving waters through sedimentation or pollution. Means to achieve this shall be submitted with the development application.

5.10 Telecommunication Facilities

A. Background

This section is intended to be considered by the telecommunication carriers when looking for site facilities within the City of Penrith and undertaking the consultation process required under Commonwealth legislation.

B. Objectives

- a) To apply a precautionary approach to the deployment of radio communications infrastructure, by minimising Electro Magnetic Radiation (EMR) exposure to the public and avoiding sensitive locations;
- b) To achieve equity for the various stakeholders by endeavouring to balance their various needs;
- c) To promote good industrial design of infrastructure;
- d) To design and site telecommunications facilities to minimise visual impact;
- e) To provide infrastructure that is visually compatible with the surrounding character and visual context of the locality, with particular regard to heritage items, conservation areas and cultural icons;
- f) To minimise adverse impacts on the natural environment;
- g) To assess whether the proposed infrastructure is consistent with the amenity of the area and with permitted development in adjacent areas;
- h) To restore the site after discontinuation or removal of infrastructure;
- i) To identify the type of land use areas suitable for infrastructure;
- j) To accommodate the planning requirements of new technology;
- k) To provide equitable availability of locations to carriers; and
- l) To provide certainty for stakeholders and a consistent approach to the implementation/assessment of telecommunications infrastructure.

C. Controls

1) Siting

- a) In selecting a site, the proponent should demonstrate that it has adopted a 'precautionary principle' approach in terms of minimising the Electro Magnetic Radiation (EMR) exposure.
- b) Towers, structures and sites for telecommunications services should be co-located with other facilities or towers that supply or are proposed to supply telecommunications services or facilities, wherever possible. In this regard, a carrier should either co-locate antennas on an existing tower that has been established by a previous carrier, or as close as practicable to an existing tower that facilitates telecommunication services.

Where co-location is proposed, the assessment should address the cumulative emissions of all co-located telecommunications facilities.

If facilities are not co-located, details of the process employed in identifying opportunities for co-locating and reasons why this was unsuitable or inappropriate should be included in the assessment.

- c) Where possible, telecommunications facilities should not be located:
 - i) Close to possibly vulnerable populations (including the elderly, children and hospitals or nursing homes);
 - ii) Close to heavily populated sites;
 - iii) Within or at the termination of a significant vista or focal point of a streetscape;
 - iv) Within a visually sensitive area or at a 'gateway' site (see the Site Planning and Design Principles section of this Plan); or
 - v) Within a streetscape or landscape dominated by its heritage significance and identified in Schedule 5 Environmental heritage of Penrith LEP 2010.
- d) Carriers should take into consideration the proximity of a potential site to the following land uses:
 - i) Residential;
 - ii) Seniors housing;
 - iii) Hospitals;
 - iv) Schools;
 - v) Child care centres; and
 - vi) Heritage items.
- e) Wherever possible, facilities should be located outside of residential zones. Preferred locations include industrial areas, low use open space areas and commercial centres.
- f) Consideration of the proposed or future use of land, as well as its existing use, should be included in any assessment.

2) Visual Impact

- a) Towers should be located where possible to minimise visual impact. Assessments should outline screening measures considered, including painting and finishes of towers and ground level structures, and site landscaping. Location of towers at the rear of buildings should also be considered, rather than on street frontages, impacting on the streetscape.

3) Notification and consultation

- a) Carriers must comply with the relevant sections of the ACIF (Australian Communications Industry Forum) code in relation to:
 - i) Installing low RF (radiofrequency) Power Infrastructure and Fixed Radio links;
 - ii) Communicating with Council when no development application is required; and
 - iii) Consulting with the local community when no development application is required.

5.11 Boarding Houses

A. Background

The following developments are covered by this section:

- a) boarding houses; and
- b) alterations and additions to existing boarding houses.

This section provides supplementary directions for Boarding Houses in addition to those contained within State Environmental Planning Policy (Affordable Rental Housing) 2009 (SEPP) and the general controls elsewhere in this DCP.

Where controls specified elsewhere in the DCP are inconsistent with this section and would otherwise apply, this section prevails.

Boarding house developments should be compatible with local character and provide suitable amenity for tenants and the community.

B. Objectives

- a) To ensure that boarding houses fit the local character or desired future local character of the area.
- b) To minimise negative impacts on neighbourhood amenity.
- c) To ensure boarding house premises are designed to be safe and accessible.
- d) To respond to increasing neighbourhood densities resulting from boarding house development.
- e) To ensure that boarding houses operate in a manner which maintains a high level of amenity, health and safety for residents.

C. Controls

1) Local Character

- a) Boarding house development applications shall be accompanied by detailed site analyses to assist with the determination of local character.
- b) A neighbourhood analysis must be completed to identify the desired future character of the neighbourhood. It is recommended that community consultation be undertaken as part of the analysis to determine aspirations for the future character.
- c) Key elements that contribute to consideration of local and neighbourhood character include:
 - Surrounding land uses
 - Social and Historic Context
 - Scale
 - Built Form
 - Natural Environment
 - Density
 - Amenity
 - Safety and Security
 - Social dimensions and housing affordability
 - Aesthetics

2) Built Form, Street Impact and Appearance

- a) The entrance to the boarding house must be in a prominent position addressing the street.

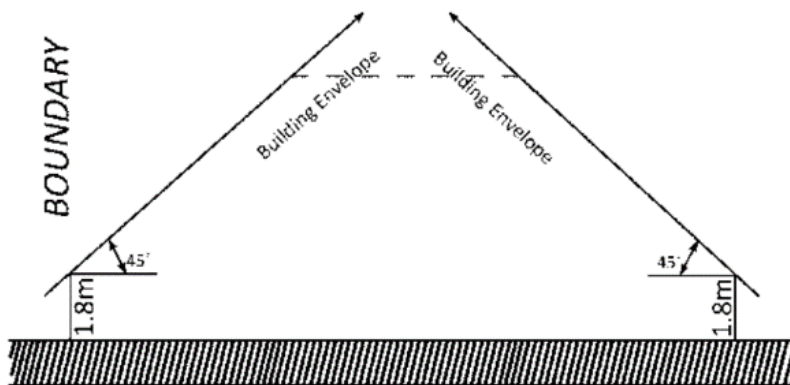
- b) New boarding houses must not impede the achievement of access to a minimum of 3 hours sunlight in the main living area and in at least 50% of private open space between 9am and 3pm on 21 June for adjoining properties.
- c) Boarding houses must be designed to have a sympathetic relationship with adjoining development.
- d) Proposals must demonstrate that neighbourhood amenity will not be adversely impacted by factors such as noise and privacy.
- e) There must be no basement encroachments to setbacks either above or below ground.
- f) Minimum setbacks for boarding houses in R2 and R3 Zones are provided in table D5.3. The intent of this control is to ensure consistency with local character by replicating streetscape patterns of buildings and private gardens in established neighbourhoods, which have visual and symbolic richness that are valued by their community.

Table D5.3: Minimum setback and building envelope requirements for boarding houses in R2, R3 and R4 Zones, and residential flat buildings or high density mixed use development.

Setbacks	Minimums in R2 and R3 Zones	Minimums for Multi dwelling housing scale development in an R4 zone	Minimums for Residential flat building or high density mixed use development
Front	a) average setbacks of the adjoining neighbours; or b) a 5.5m minimum setback, whichever is the greater.	a) average setbacks of the adjoining neighbours; or b) a 5.5m minimum setback, whichever is the greater.	a) average setbacks of the adjoining neighbours; or b) a 5.5m minimum setback, whichever is the greater.
Side	2m along not more than 50% of the building length. The remaining 50% is to achieve a minimum setback of 3m, these areas are to be a minimum of 1.5m wide.	2m along not more than 50% of the building length. The remaining 50% is to achieve a minimum setback of 3m, these areas are to be a minimum of 1.5m wide.	Zero setbacks from the side boundary are not permissible.
Rear	4m for a single storey building (or any single storey component of a building) 6m for a two storey building (or any two storey component of a building)	4m for a single storey building (or any single storey component of a building) 6m for a two storey building (or any two storey component of a building)	4m for a single storey building (or any single storey component of a building) 6m for a two storey building (or any two storey component of a building)

Secondary Street Frontages	3m In an R3 Zone, 5.5m with a 3m minimum setback for single storey verandahs	5.5m 3m minimum setback for single storey verandahs	Zero setbacks from the side boundary are not permissible, other than awnings to main building entrances.
Building Envelope	Refer to Figure D5.4 below.	Comply with controls for <i>Multi Dwelling Housing</i> in this DCP	Comply with controls for <i>Residential Flat Buildings</i> in this DCP
Compatibility of Landscaping with Streetscape in the Front Setback	50% landscaped area In an R3 Zone 40% landscaped area	40% landscaped area	40% landscaped area

Figure D5.4: Building Envelope for Boarding Houses in R2 and R3 Zones, for consistency with desired local character.



- g) In an R2 or R3 Zone, boarding houses should comply with controls for *Single Dwellings* where these controls do not conflict with the requirements of the SEPP.
- h) A boarding house proposal of a scale similar to a multi dwelling housing development should comply with the controls and objectives for *Multi Dwelling Housing* within this DCP, where they are not in conflict with the requirements of the SEPP and the objectives of the zone.
- i) A boarding house proposal of a scale similar to a residential flat building or high density mixed use development should comply with the controls and objectives for *Residential Flat Buildings* within this DCP, where they are not in conflict with the requirements of the SEPP, and the objectives of the zone.

3) Compatibility with Streetscape in the Front Setback

In order to be compatible with the streetscape, boarding houses must supply the following elements within the front setback, in addition to complying with other relevant *Landscape*

Design controls in this DCP and *Built form, streetscape impact and appearance* controls in this section:

- a) A minimum of 18m² deep soil area must be provided to support larger plants and trees used to soften the form of the building and provide shade. Deep soil areas are to be a minimum width and length of 3m;
- b) A watering system that does not rely on lodgers to maintain plantings.

4) Tenant Amenity, Safety and Privacy

Boarding houses are to maintain a high level of resident amenity, safety and privacy by ensuring:

- a) communal spaces including laundry, bathroom, waste facilities, private open space, kitchen and living areas are accessible to all lodgers;
- b) if over 10 boarding rooms are supplied, 10% of the total number of dwellings (rounded up) must be accessible;
- c) cross ventilation should be achieved in common areas including corridors, common kitchen areas, living areas, laundry, waste and kitchen facilities;
- d) all opening windows are to be provided with fly screens; and
- e) secure mailboxes shall be provided on the property allowing resident only access.
- f) Communal kitchen facilities must be provided with a minimum area of:
 - a. 7m² for up to 6 lodgers,
 - b. or 11m² for more than 6, up to 12 lodgers.
 - c. A minimum of 15m² will be provided above 12 lodgers, plus 1m² for each additional lodger over 12; or all bedrooms shall contain kitchenette facilities with a fridge, adequate cupboards and shelves and a microwave. For fire safety reasons no other cooking appliances are permitted.
- g) Common rooms must be provided at a minimum rate of 2m² per lodger, or a minimum of 13m² where there are fewer than 6 lodgers. Common rooms do not include circulation space or laundry, bathroom, waste and kitchen facilities.

5) Visual and Acoustic Amenity Impacts

Boarding houses are to provide:

- a) bedrooms separate from significant noise sources;
- b) sound insulation between bedrooms to provide reasonable amenity;
- c) communal areas and bedroom windows away from the main living area or bedroom windows of any adjacent buildings; and
- d) screen fencing, plantings, and acoustic barriers in appropriate locations.

6) Location

Boarding Houses shall not be located in cul-de-sacs.

7) Plan of Management

An operating 'Plan of Management' is to be submitted with each development application for a boarding house (including new and existing boarding houses). The Plan of Management is to include, but is not limited to:

- a. boarding house staffing arrangements, including the location of 24/7 contact details for any on-site manager or resident caretaker, who has overall responsibility for the operation, administration, cleanliness, maintenance and fire safety of the premises;
- b. house rules and how they will be publicised to residents, including details of:

- i. guest behaviour;
 - ii. activities and noise;
 - iii. visitor policy;
 - iv. the use of alcohol and/or drugs;
 - v. cleaning of communal spaces following use, and
 - vi. location of smoking area.
- c. plans outlining the occupancy rate for each sleeping room, room furnishings, provisions of communal areas and facilities, and access and facilities for people with disabilities;
- d. measures to minimise unreasonable impact to the habitable areas of adjoining properties, including the management of communal open spaces, which, for boarding houses within residential areas or where adjoining sites contain residential activities, should be restricted to 10pm;
- e. waste minimisation, recycling and collection arrangements are to be identified;
- f. maintenance strategy including, but not limited to:
 - i. monthly gardening and pruning of vegetation;
 - ii. pest management plan;
 - iii. cleaning and sanitation program including end of lease arrangements;
 - iv. quarterly external clean and graffiti removal;
 - v. waste management plan; and
 - vi. indicative arrangements for council officer's 12 month inspection, required under the Boarding House Act 2012.
- g. internal signage arrangements, including:
 - i. the name and contact number of the property caretaker or manager;
 - ii. emergency contact numbers for essential services;
 - iii. house rules;
 - iv. a copy of the annual fire safety statement and current fire safety schedule;
 - v. floor plans that will be permanently fixed to the inside of the door of each sleeping room which indicate the available emergency egress routes from the respective sleeping room; and
 - vi. information on local social services.
- h. minimum lease period with conditions including:
 - i. resident agreement to comply with boarding house rules;
 - ii. minimum lease period of 3 months; and
 - iii. 6 and 12 month rental terms available.
- i. a social impact assessment;
- j. a complaint register that is available for inspection by Council;
- k. indicative arrangements for Council monitoring and review of required management actions; and
- l. any further relevant considerations. Council may request further information to be provided.

E Key Precincts

A number of areas within the City of Penrith have unique characteristics or development potential that warrant the development of specific controls. These areas have been identified as key precincts and are included in this section.

This section includes only those controls which respond to specific issues in key precincts. All other relevant controls contained within this Plan still apply. This section must therefore be read in conjunction with all the other sections in this Plan.

In the event of an inconsistency between the controls contained in Section E and other sections of the DCP, the controls contained in Section E will prevail.

Key precincts included in this section are:

- E1 Caddens
- E2 Claremont Meadows Stage 2
- E3 Cranebrook
 - Part A Waterside
 - Waterside Residential
 - Waterside Corporate
 - Part B Cranebrook Neighbourhood Centre
 - Part C Cranebrook Rural Residential Development
- E4 Emu Heights – Blue Mountains Escarpment Siting, Design and Management
- E5 Emu Plains
 - Part A Commercial Area
- E6 Erskine Business Park
- E7 Glenmore Park
 - Part A Glenmore Park Stage 1
 - Part B Glenmore Park Stage 2
- E8 Kingswood
 - Part A Land Fronting Morley avenue and the Great Western Highway, Kingswood
 - Part B The Knoll
- E9 Mulgoa Valley

- E10 Orchard Hills
- E11 Penrith
 - Part A Penrith City Centre
 - Part B Walkways
 - Part C North Penrith Urban Area
- E12 Penrith Health and Education Precinct
 - Part A Hospital Precinct
 - Part B Business Park Precinct
 - Part C South Werrington Urban Village Precinct
 - Part D – Werrington Mixed-Use Area
- E13 Riverlink Precinct
 - Part A Riverlink excluding Panthers
 - Part B Panthers Penrith Precinct
- E14 St Clair
- E15 St Marys / St Marys North
 - Part A St Marys Town Centre

In most cases, the controls in this section will supplement other general development of this Plan; however, in some cases, they will override them.

Table of Contents

E1 CADDENS	2
1.1 ABOUT THIS SECTION	2
1.1.1 LAND TO WHICH THIS SECTION APPLIES	2
1.1.2 AIMS OF THIS SECTION	2
1.1.3 GENERAL OBJECTIVES	2
1.1.4 OTHER RELEVANT PARTS OF THIS DCP	3
1.1.5 OTHER RELEVANT SOURCES OF INFORMATION	3
1.1.6 CONCEPT PLANS	4
1.2 STRUCTURE PLAN	5
1.2.1 URBAN STRUCTURE	5
1.2.2 CHARACTER AREA DESIGN PRINCIPLES	6
1.2.3 DWELLING YIELD AND DIVERSITY	8
1.3 THE PUBLIC DOMAIN	11
1.3.1 STREET NETWORK AND DESIGN	11
1.3.2 STREET FURNITURE AND PUBLIC ART	24
1.3.3 PEDESTRIAN AND CYCLE NETWORK	24
1.3.4 PUBLIC TRANSPORT	26
1.3.5 OPEN SPACE, ENVIRONMENTAL CONSERVATION AND LANDSCAPE NETWORK	28
1.3.6 BIODIVERSITY	38
1.3.7 ABORIGINAL AND EUROPEAN HERITAGE	39
1.3.8 BUSHFIRE HAZARD MANAGEMENT	40
1.3.9 WATER CYCLE MANAGEMENT	41
1.3.10 CONTAMINATION MANAGEMENT	41
1.3.11 SALINITY MANAGEMENT	42
1.4 RESIDENTIAL DEVELOPMENT	44
1.4.1 SUBDIVISION AND NEIGHBOURHOOD DESIGN	44
1.4.2 STREETScape, FEATURE ELEMENTS AND ROOF DESIGN	46
1.4.3 DWELLING HEIGHT, MASSING AND SITING	48
1.4.4 BUILDING SETBACKS	49
1.4.5 DEVELOPMENT FORMS	53
1.4.6 PRIVATE OPEN SPACE	61
1.4.7 SITE COVER AND LANDSCAPED AREAS	62
1.4.8 FENCING	63
1.4.9 GARAGES AND ACCESS	64
1.5 ENVIRONMENTAL AND RESIDENTIAL AMENITY	67
1.5.1 VISUAL PRIVACY AND ACOUSTIC AMENITY	67
1.5.2 SAFETY AND SURVEILLANCE	68
1.5.3 SUSTAINABLE BUILDING DESIGN	69
1.6 THE PRECINCT CENTRE	70

E1 Caddens

A. Background

Caddens is located within the Werrington Enterprise Living and Learning (WELL) Precinct. The key elements of the WELL Precinct Vision which apply to Caddens include 'a model for sustainable urban development that captures its potential arising from proximity to transport linkages and tertiary educational facilities', and 'an internationally renowned destination of choice for business, residents and students. The synergies arising from the collective presence of these groups will energise the Precinct in attracting and accommodating a diverse range of land use activities and people' and offering 'seamless integration of those people and activities and the cosmopolitan lifestyle choices it subsequently generates and offers'.

1.1 About this Section

1.1.1 Land to which this Section applies

This section applies to development on land within the Caddens Release Area, as shown in Figure E1.1.

1.1.2 Aims of this Section

The aims of this Section are to:

- a) support the objectives of Penrith Local Environmental Plan 2010 ; and
- b) facilitate the sustainable development of the residential, mixed use, retail, open space and conservation areas of the Caddens Release Areas (Caddens).

1.1.3 General Objectives

- a) To facilitate and promote the objectives of the Werrington Living and Learning Precinct (WELL Precinct Vision).
- b) To create a viable and vital community energised by the interactions of, and synergies with, adjacent education and employment activities.
- c) To enable a diverse range of housing forms and densities to meet the needs of diverse age groups, family types and income levels.
- d) To demonstrate a high standard of residential amenity and a high standard of urban and architectural design quality.
- e) To ensure all development achieves a high standard of environmental and social sustainability.
- f) To provide a Precinct Centre serving residents of Caddens and surrounding areas, as well as the WELL Precinct.
- g) To protect existing vegetation and views from hilltops and ridges.
- h) To ensure development is sensitive to, and facilitates connections with, land and development adjoining Caddens.
- i) To integrate all available modes of transport including walking, cycling and use of buses, and to ensure there are efficient links within and between open spaces, the Precinct Centre and adjacent residential areas.

Figure E1.1 – Land to which this plan applies



1.1.4 Other Relevant Parts of this DCP

In the event of any inconsistency between this section of the plan and the rest of the DCP, the requirements of this section prevail.

Where a specific issue is not addressed in this Section of the Plan, reference should be made to the remaining provisions of this Plan.

1.1.5 Other Relevant Sources of Information

People seeking further information on Caddens or preparing a development application may wish to refer to the following:

- Caddens Land Release Noise & Air Quality Impact Assessment (September 2007, Version G)
- Caddens Release Area Bush fire Assessment (August, 2007)
- Caddens Release Area Combined Heritage Assessment (November, 2007)
- Caddens Release Area Ecological Assessment (November, 2007)
- Caddens Release Area Transport Management and Accessibility Plan (March, 2008)
- Caddens Release Area Open Space Strategy Report (January, 2007)
- Caddens Release Area Catchment Management, Hydrology and Water Quality Report (November 2007)
- Caddens Release Area Infrastructure Planning Report for Rezoning (December, 2007)
- Caddens Release Public Domain Strategy and Landscape Masterplan Report (March 2008)

These documents are available for reference from Council.

1.1.6 Concept Plans

A Concept Plan setting out a proposal for the development of the Precinct Centre is required to be lodged prior to, or with, the first subdivision development application for the Precinct. The Concept Plan must meet the objectives and controls of this section and demonstrate:

- Proposed urban structure and public domain elements, including proposed land uses.
- Delivery of required dwelling yield set out in this Section.
- The road network, sections and details.
- The location and design of open space, stormwater facilities and community facilities, including a Landscape Plan.
- The location of pedestrian and cycle paths.
- Development Staging.
- Infrastructure Delivery Strategy.

1.2 Structure Plan

1.2.1 Urban Structure

The Caddens Release Area Structure Plan establishes the urban structure and form for the planning and future development of the subject land. The Structure Plan is illustrated at Figure E1.2 with the main elements being described in more detail in the following sections.

Figure E1.2 – Structure plan



The design principles underpinning the Structure Plan are as follows. These principles must be addressed at subdivision stage.

- 1) The principal land use at Caddens will be residential. The residential areas will be located on either side of a linear riparian corridor and around open space areas on hilltops and ridges.
- 2) The location of the Precinct Centre, riparian corridor and active open space will provide focal points for the new community.

- 3) The Precinct Centre will form the hub of the WELL Precinct and serve the residential community, the university and TAFE community, and future employment areas.
- 4) Active and passive open spaces will be distributed throughout Caddens and integrate with the natural features of the Werrington Creek riparian corridor.
- 5) The area will be legible and highly accessible and incorporate a bus route, cycle routes and walking tracks.
- 6) Higher density forms of housing will be located in close proximity to the Precinct Centre and other areas of higher amenity.
- 7) Caddens Road is to function as a rural road segmented by strategic closures.
- 8) Development facing and accessing Caddens Road will contain larger, wider lots that provide a transition between the new urban area and the rural landscape to the south.
- 9) Views to and vistas from the hilltops will be protected by way of lower rise development and revegetated open space.

1.2.2 Character Area Design Principles

This section outlines the design principles relating to the Special Character Areas at Caddens shown in Figure E1.3.

The principles for the Special Character Areas must be addressed at both the subdivision and detailed design stages.

Caddens Road Interface

Residential development interfacing with Caddens Road will be characterised by generally larger lots that respond, through sensitive lot layout, building height limitation and landscaping, to the rural character of adjacent semi-rural areas.

Development is to:

- 1) Respond to the characteristics of the semi-rural edge.
- 2) Provide appropriate residential amenity, particularly with respect to visual privacy and the relationship between dwellings.
- 3) Maintain, where possible, the character of Caddens Road as a rural road.
- 4) Address the street and comprise wider lots.
- 5) Provide larger front setbacks, fencing and landscaping in keeping with the semi rural locality.

Figure E1.3 – Character Areas



Hilltops

The hilltops will be characterised by open space and sensitively designed residential development on generally larger lots that respond to the undulating landform while creating an opportunity for visual connections to the ridge line and hilltop parks.

Development is to:

- 1) Respond to the topographical constraints.
- 2) Provide, where possible, opportunities for views to hilltops and ridges.
- 3) Minimise the height, bulk and scale of dwellings on steep slopes when viewed individually and collectively both from within and outside the locality.
- 4) Provide appropriate residential amenity, particularly with respect to visual privacy and the relationship between dwellings.
- 5) Provide pedestrian and cyclist links to public open space.

Precinct Centre

The Precinct Centre is intended to form the hub of the WELL Precinct. The Centre is

intended to be local in scale, with a retail and commercial limit of 10,000m² and a maximum height of 15m (4 storeys plus roof element). The Precinct Centre will be characterised by a mix of retail, community, commercial and residential uses that serve the needs of, and integrate with, adjacent residential development and employment areas, as well as the campuses of TAFE and the University of Western Sydney (UWS). University and TAFE facilities could be located in the Precinct Centre.

Development is to:

- 1) Create an attractive, lively and inviting pedestrian friendly environment with seating, shading, active tree-lined footpaths and pedestrian links that connect activities and spaces.
- 2) Reduce conflict between pedestrian and vehicular activity.
- 3) Create a rectilinear road pattern connecting nearby residential, employment, university and conservation land.
- 4) Incorporate opportunities for passive security and surveillance at ground level and above.
- 5) Incorporate shop top housing and other dwelling forms that facilitate home based employment.
- 6) Ensure active uses at street level.
- 7) Provide opportunities for the location of UWS and TAFE facilities.
- 8) Be built to the front property boundary and incorporate full width awnings along street edges.

1.2.3 Dwelling Yield and Diversity

A. Objectives

- a) To provide a diverse range of housing forms and densities as shown in Figure E1.4.
- b) To promote a range of dwelling types to meet the needs of diverse age groups and family types.
- c) To provide a range of residential densities that respond to the topographical and other characteristics of Caddens.
- d) To deliver 15 dwellings per hectare of net developable area.
- e) To provide opportunities for affordable housing.
- f) To optimise relative proximity to urban services.

B. Controls

- 1) A minimum of 1,247 dwellings is to be delivered.
- 2) For each precinct the minimum dwelling yield outlined in Table E1.1 is to be achieved.
- 3) As part of a subdivision application, an applicant is to demonstrate to Council how the objective of 15 dwellings per hectare is to be achieved for that development so that the overall precinct minimum dwelling yields will be achieved.
- 4) The creation of a super lot or residue parcel is to specify the minimum dwelling yield which that lot will be required to deliver.

Table E1.1 – Dwelling yield

Sub precinct	Minimum dwelling yield
A	377
B	634
C	102
D	134
Total	1247

Figure E1.4 – Dwelling Yield Targets



- 5) A diverse range of housing types is to be provided in accordance with Figure E1.5.
- 6) Where topography permits, higher density development, such as attached dwellings, multi unit dwellings and residential flat buildings, should be located adjacent or near areas of higher amenity like the Precinct Centre, the riparian corridor and parks.
- 7) Development must provide a variety of lot sizes, dwelling types and dwelling sizes to create opportunities for a wide range of housing needs to be met.

Figure E1.5 – Indicative Dwelling Type Location



1.3 The Public Domain

1.3.1 Street Network and Design

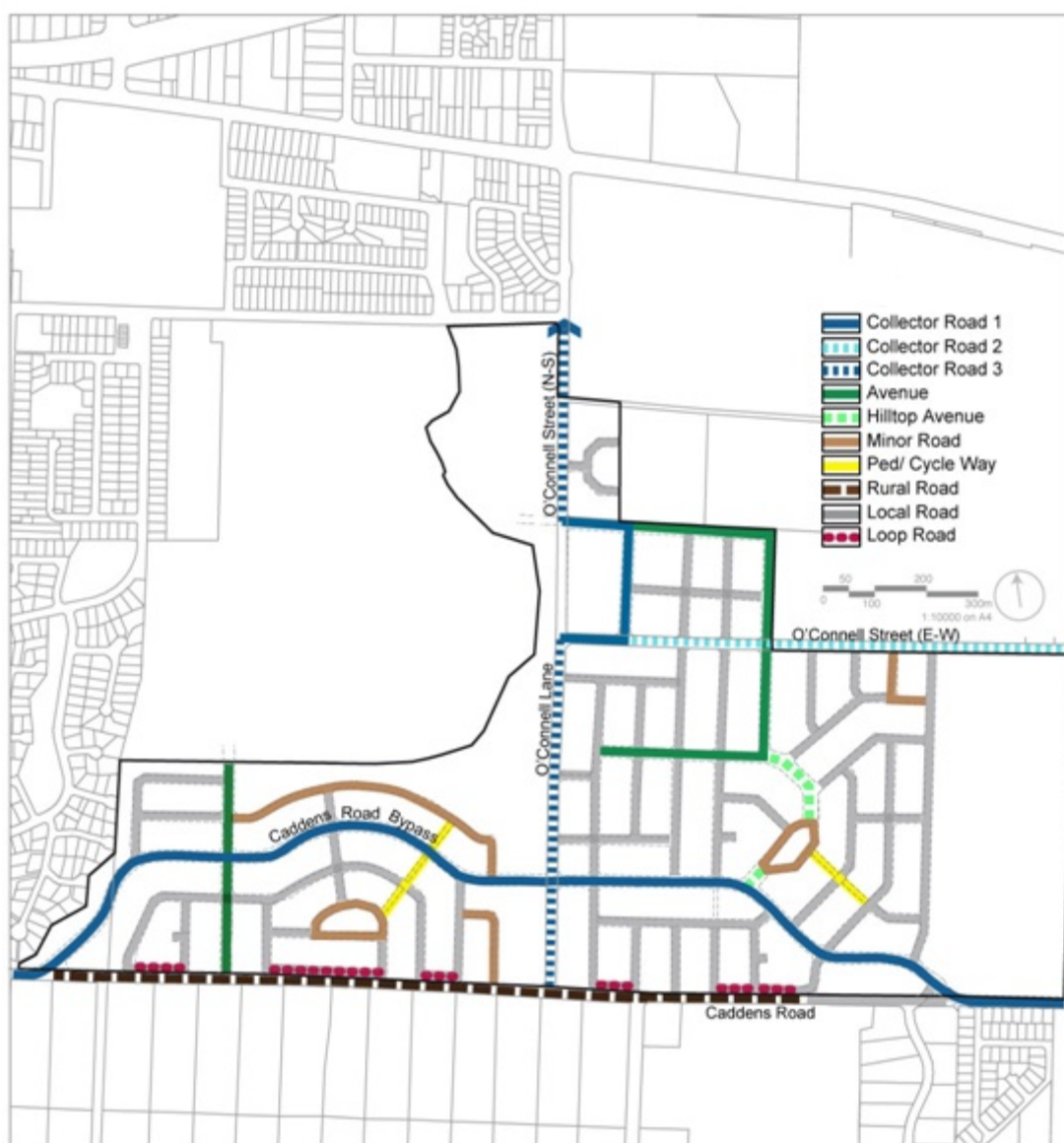
A. Objectives

- a) To provide a hierarchy of interconnected streets that gives safe, convenient and legible access within and beyond Caddens.
- b) To ensure that the hierarchy of the streets is clearly discernible through variations in road width, on-street parking and street tree planting.
- c) To provide a safe and convenient public transport, vehicular, pedestrian and cycleway network.

B. Controls

- 1) The street network is to be provided generally in accordance with Figure E1.6 and must incorporate a new collector road to by-pass Caddens Road.
- 2) Where any variation to the residential street network indicated at Figure E1.6 is proposed, the alternative street network is to be designed to achieve the following principles:
 - a) establish a direct and open network that is based on a modified grid system;
 - b) encourage walking and cycling and reduce travel distances;
 - c) maximise connectivity between residential areas, open space and the Precinct Centre;
 - d) take account of topography and accommodate significant vegetation;
 - e) provide frontage to and maximise surveillance of open space and the riparian corridor;
 - f) provide views and vistas to landscape features; and
 - g) minimise the use of cul-de-sacs. If required, the maximum number of dwellings to be served by the head of a cul-de-sac is six.

Figure E1.6 – Street Hierarchy



- 3) Streets are to be provided in accordance with the cross-sections at Figure E1.7. The dimensions shown on these typical diagrams are minimums only. Alternative street designs may be permitted on a case by case basis if they preserve the functional objectives and requirements of the design standards.
- 4) Except where otherwise provided for in this DCP, all streets and roundabouts are to be designed and constructed in accordance with the minimum requirements set out in the Penrith Council Engineering Design Specifications.
- 5) Where roads are adjacent to public reserves or riparian corridors, the verge widths may be reduced to a minimum of 1m, subject to footpaths, public utilities, bollards and fencing being adequately provided for, and riparian corridors requirements being addressed.
- 6) Where possible and practicable, the verge width is to be increased to 4.8m in front of dwellings where the front setback is less than 4.5m.
- 7) Street trees are required on all streets. Street planting is to:
 - a) minimise risk to utilities and services;

- b) be durable and suited to the street environment and include endemic species;
- c) maintain adequate lines of sight for vehicles and pedestrians, especially around driveways and street corners;
- d) provide appropriate shade;
- e) provide an attractive and interesting landscape character without blocking the potential for street surveillance; and
- f) be sited to minimise interference with street lighting.

All streets will incorporate landscaping in the verge.



Figure E1.7a – Collector Road 1

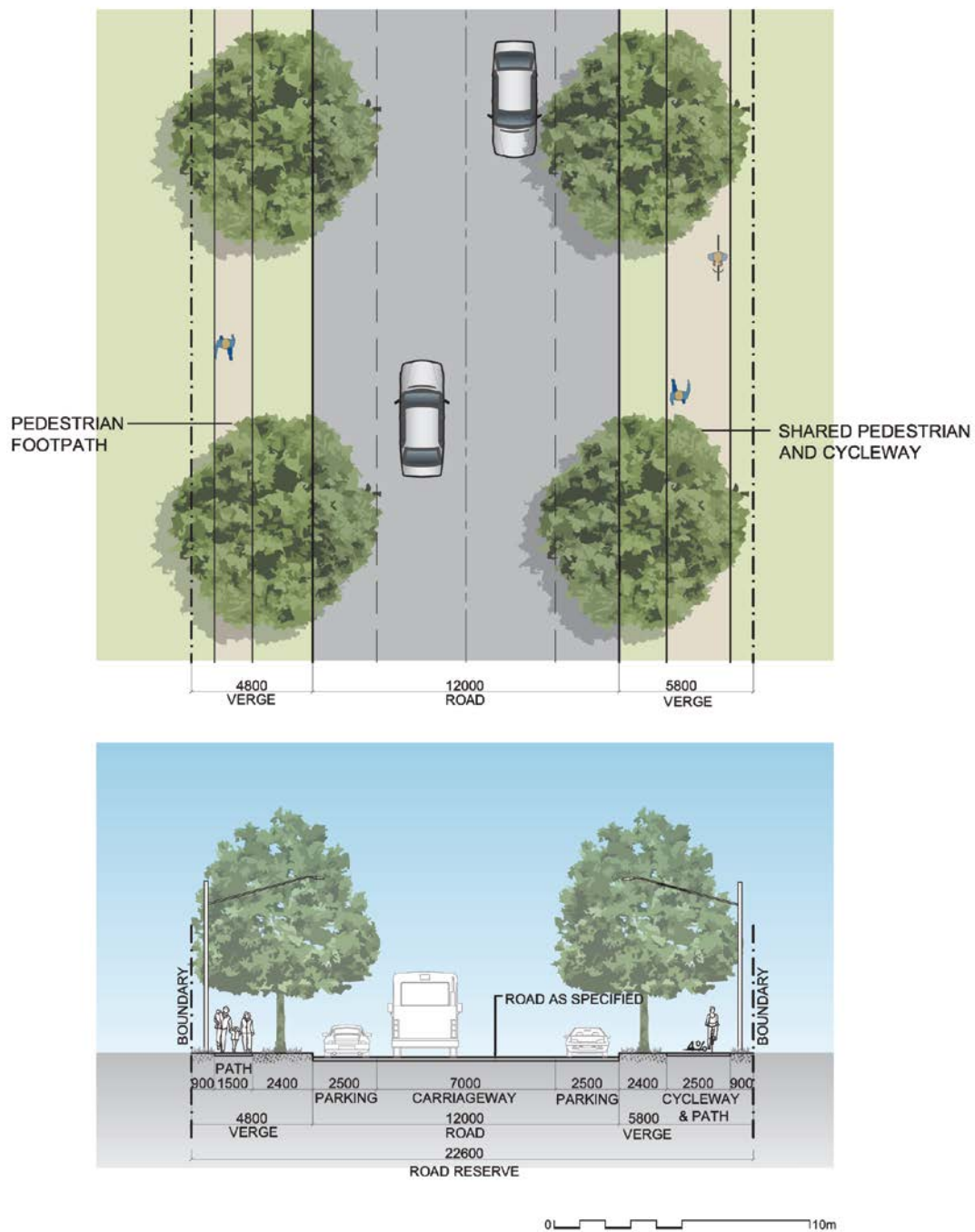


Figure E1.7b – Collector Road 2

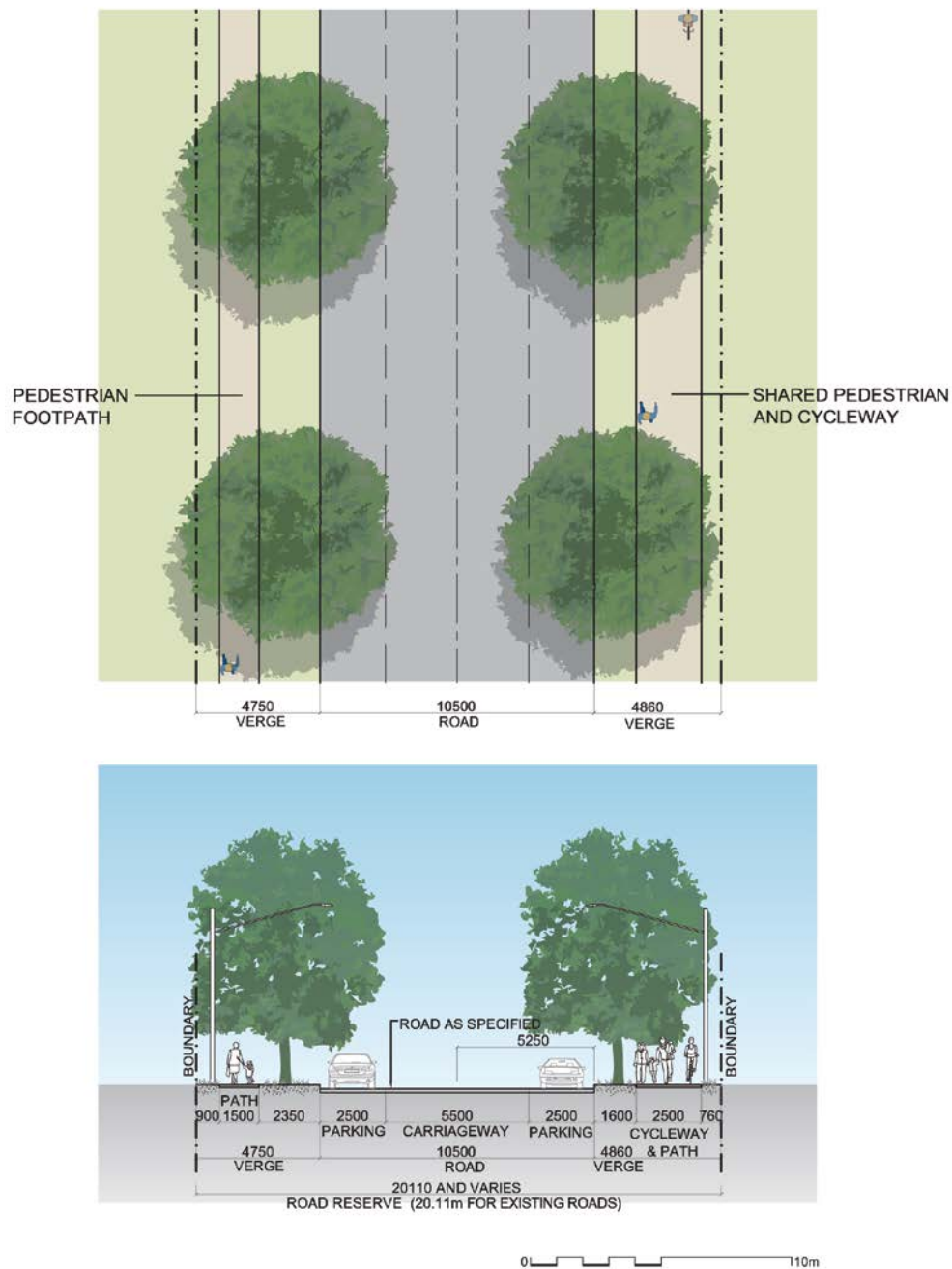


Figure E1.7c – Collector Road 3

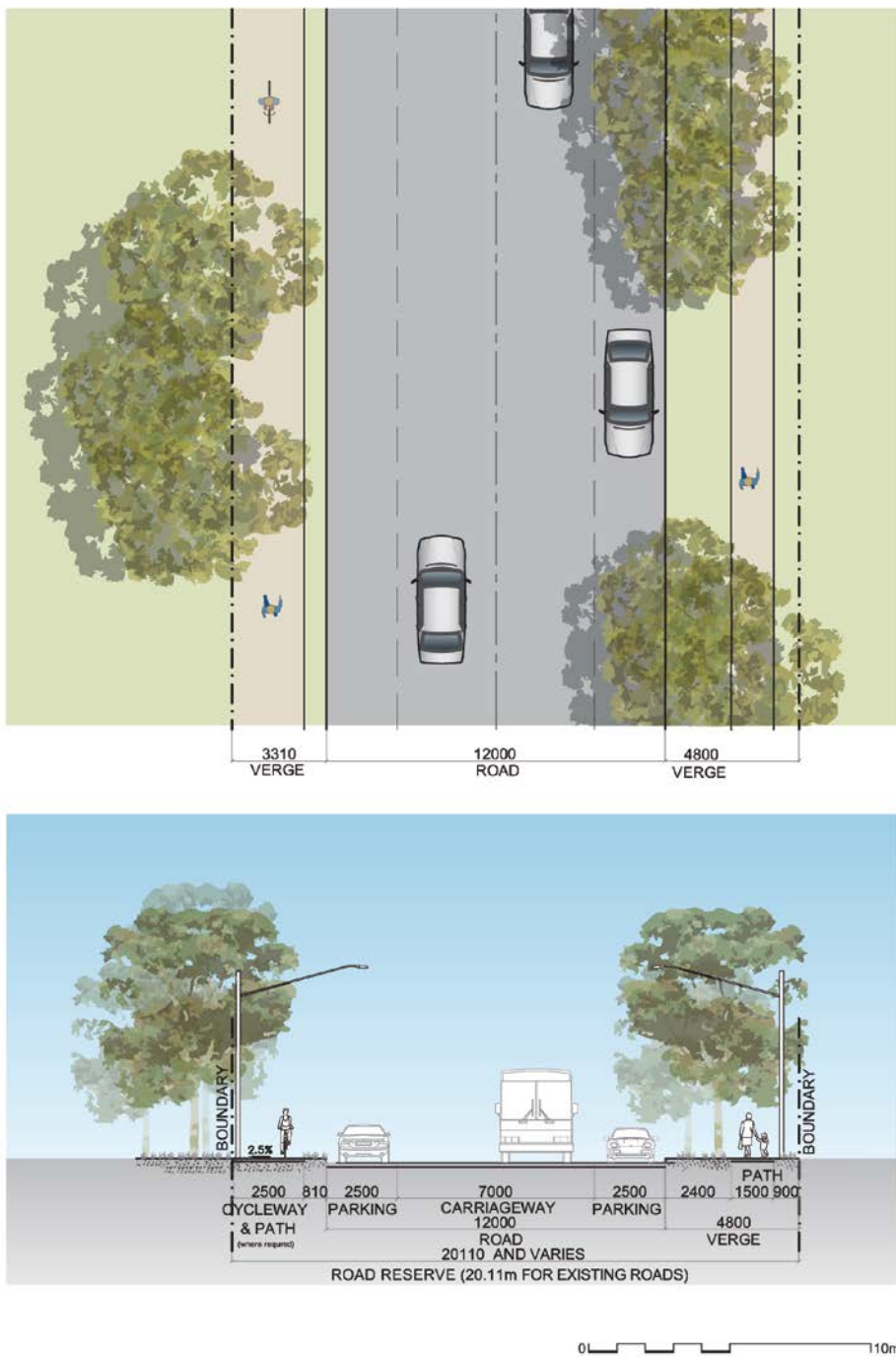


Figure E1.7d – Avenue

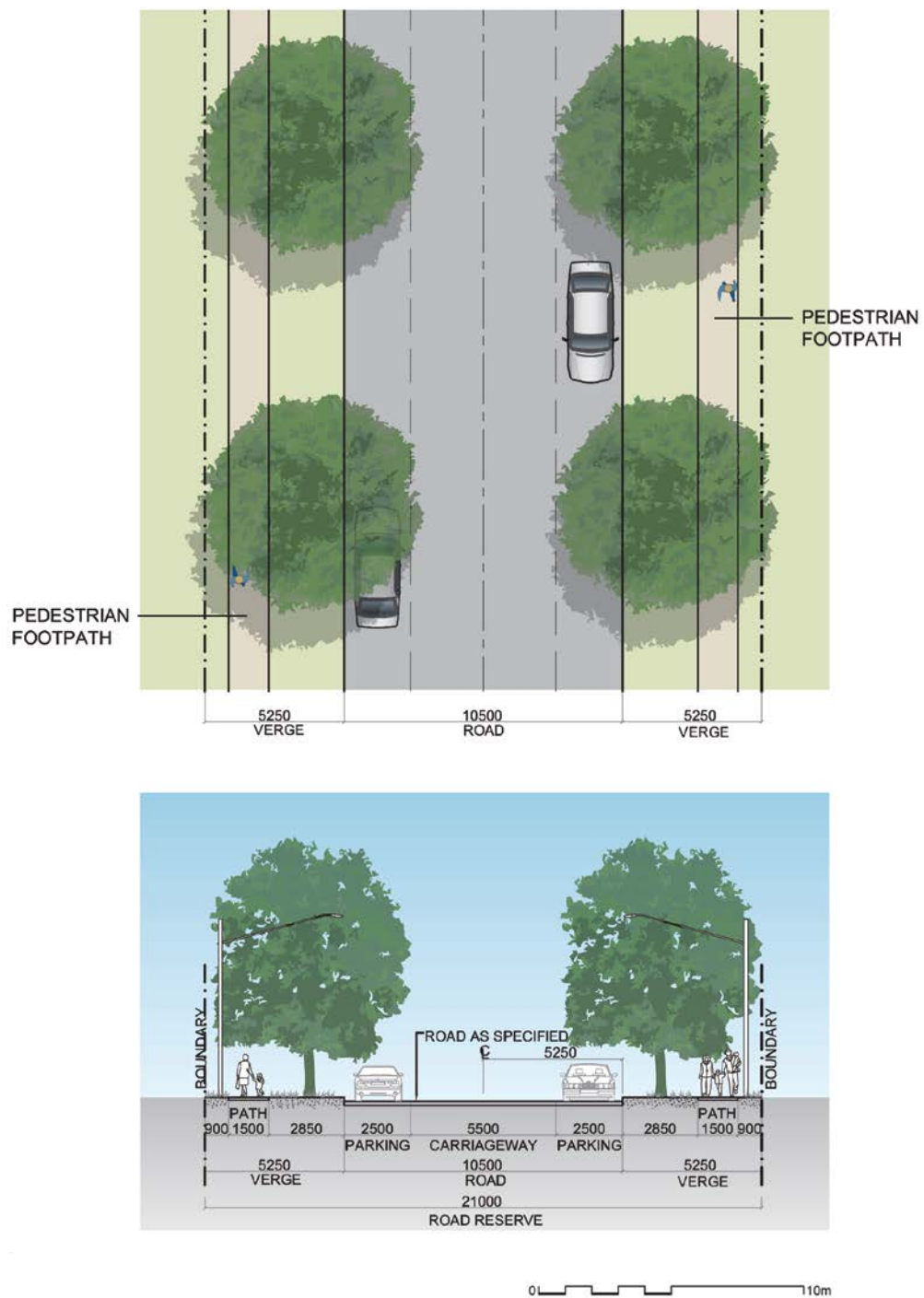


Figure E1.7e – Hilltop Avenue

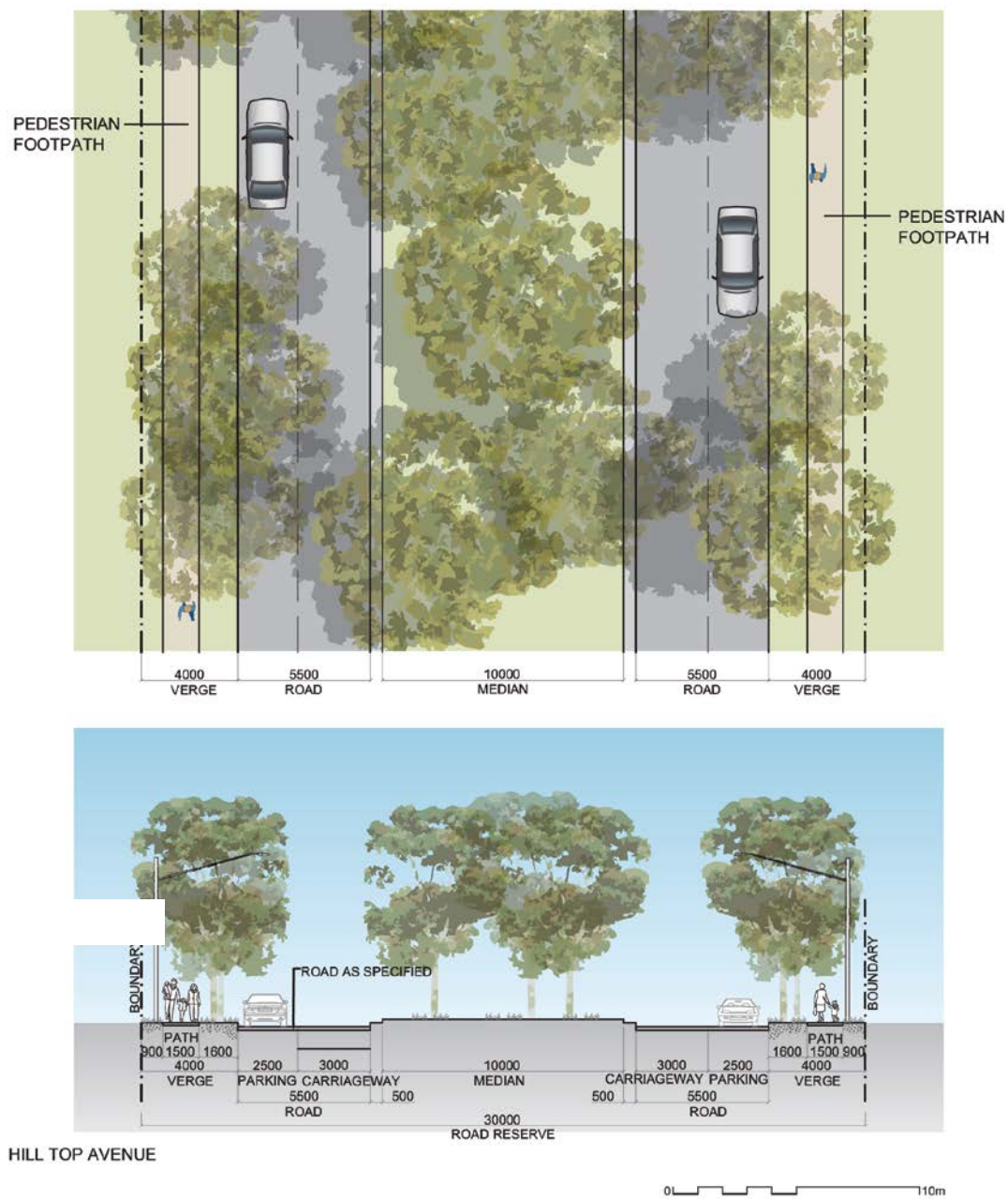


Figure E1.7f – Minor Road

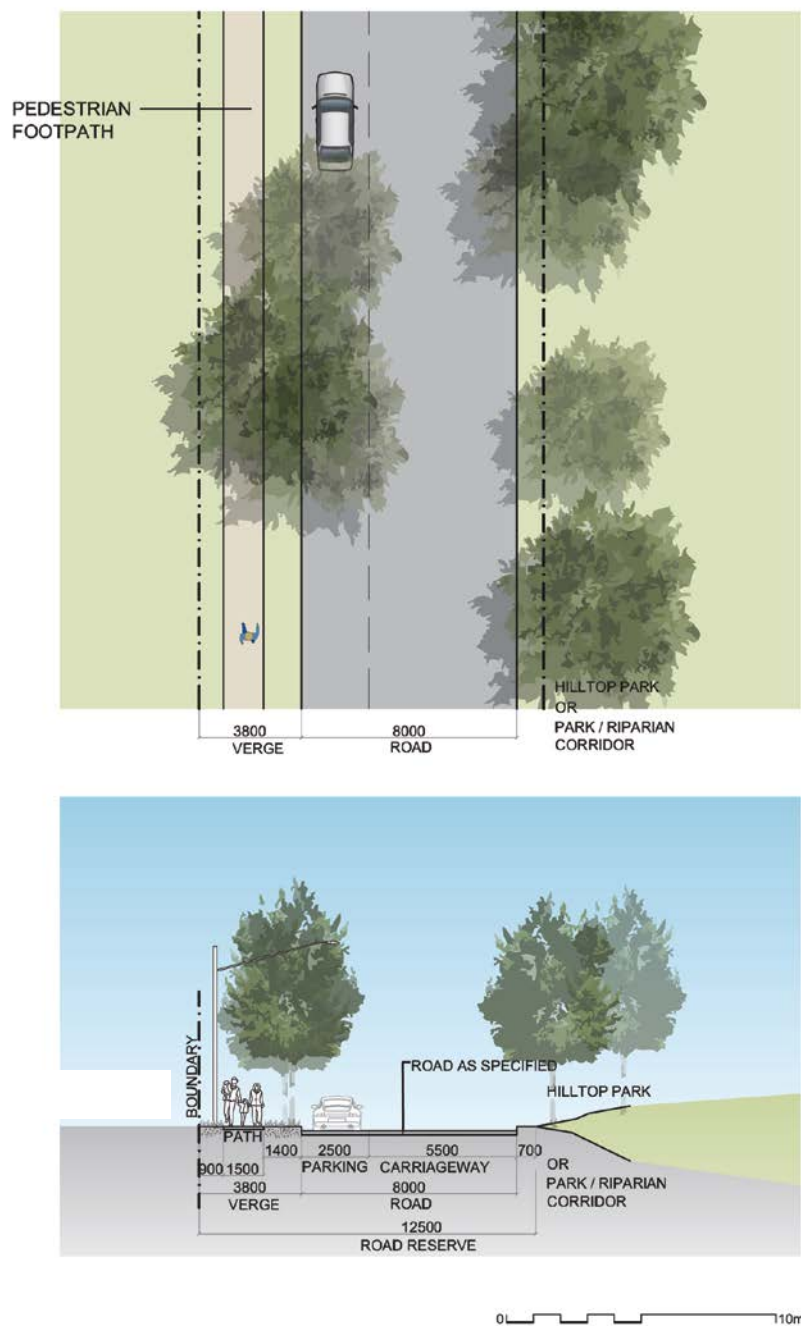


Figure E1.7g – Pedestrian / Cycleway

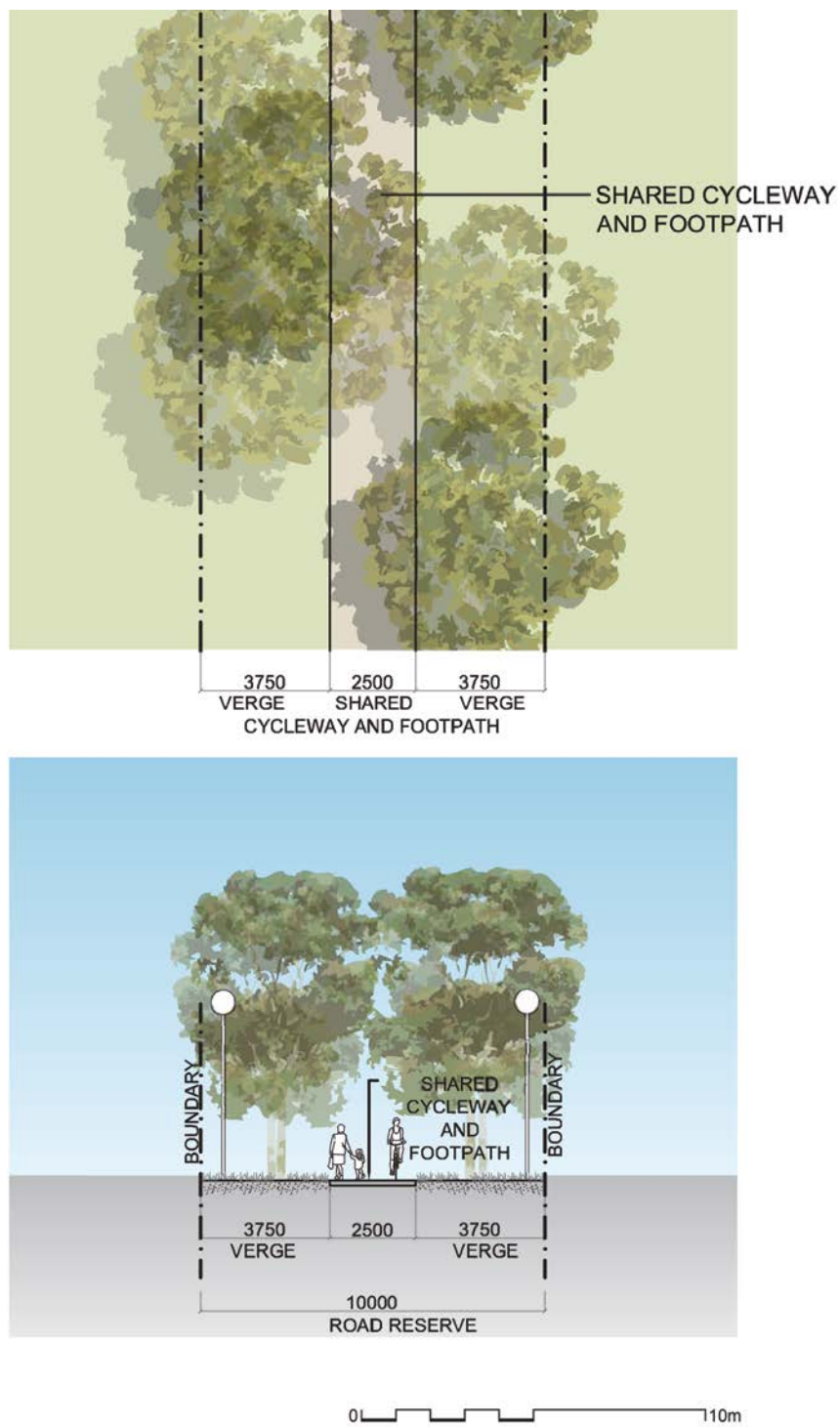


Figure E1.7h – Rural Road

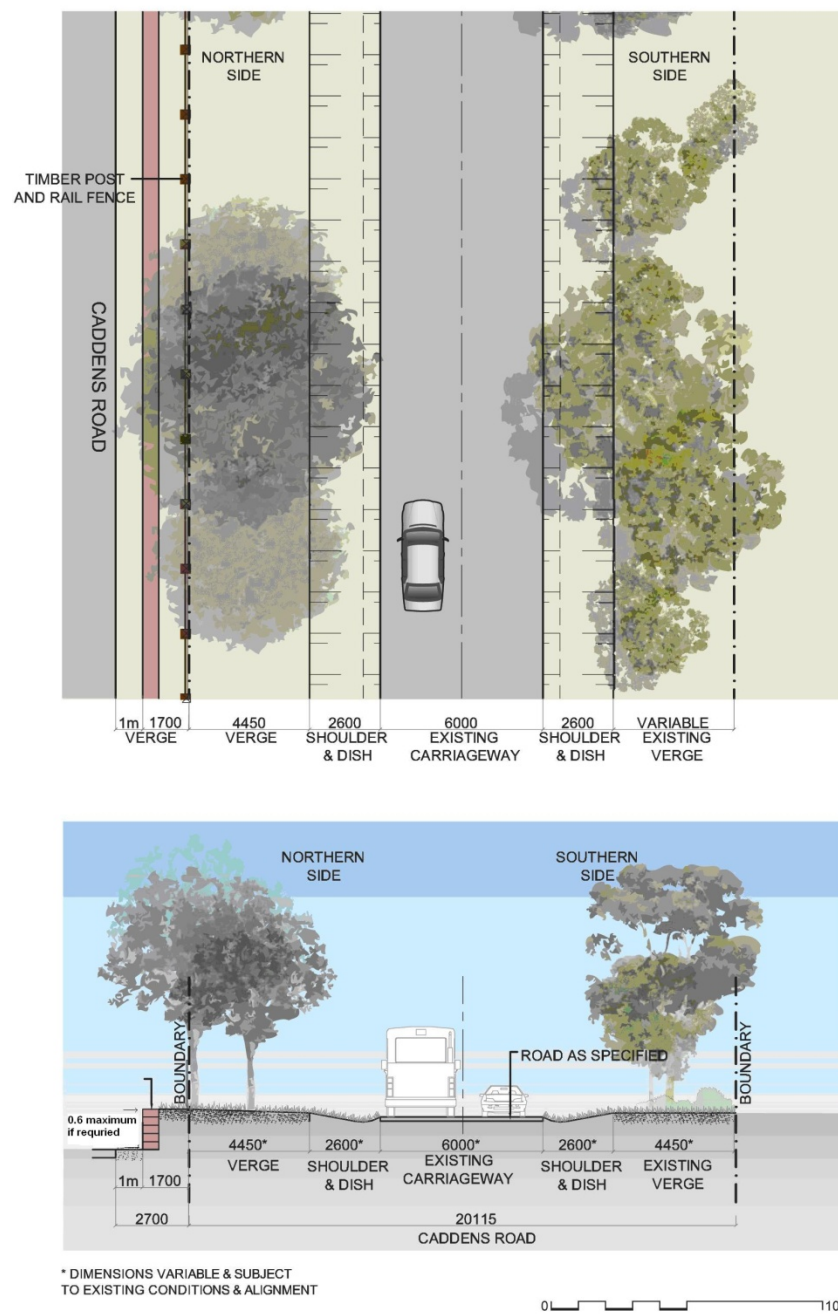


Figure E1.7i – Local Road

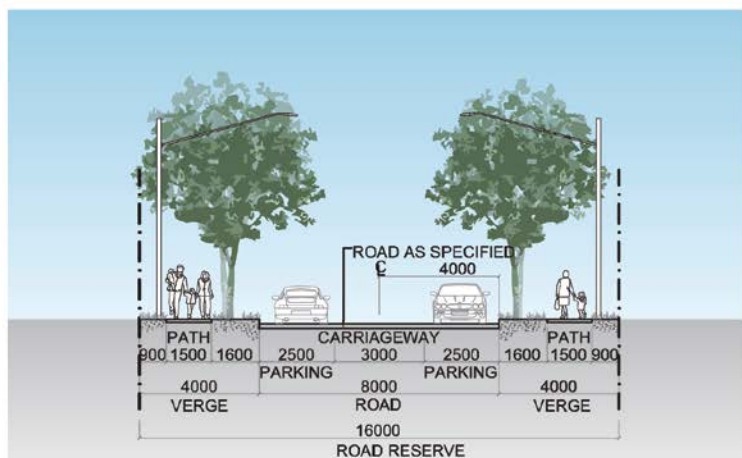
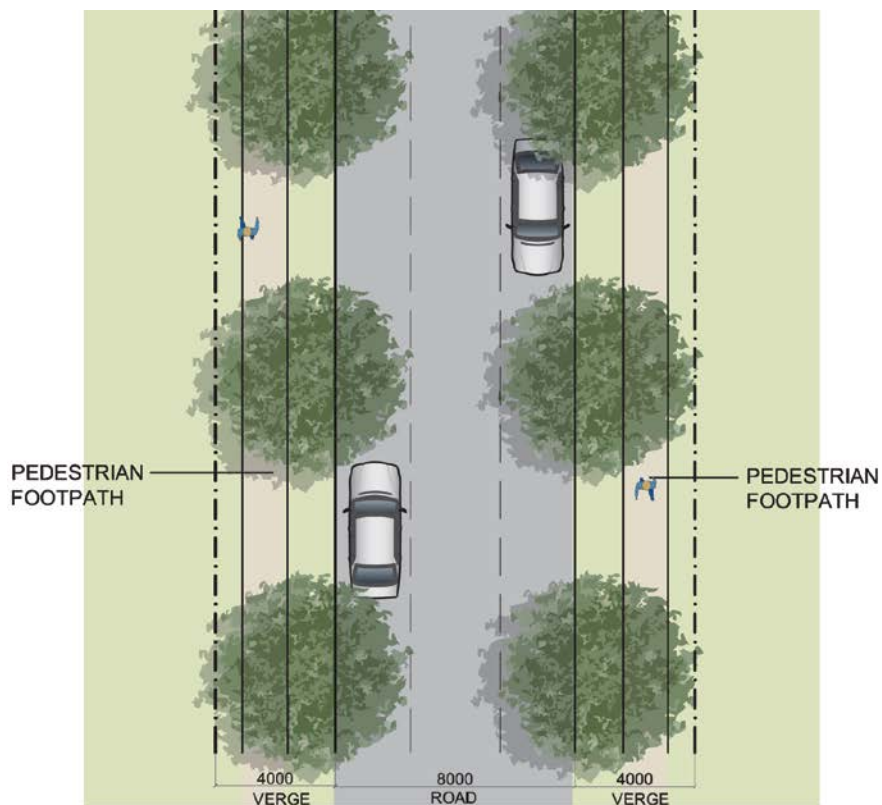
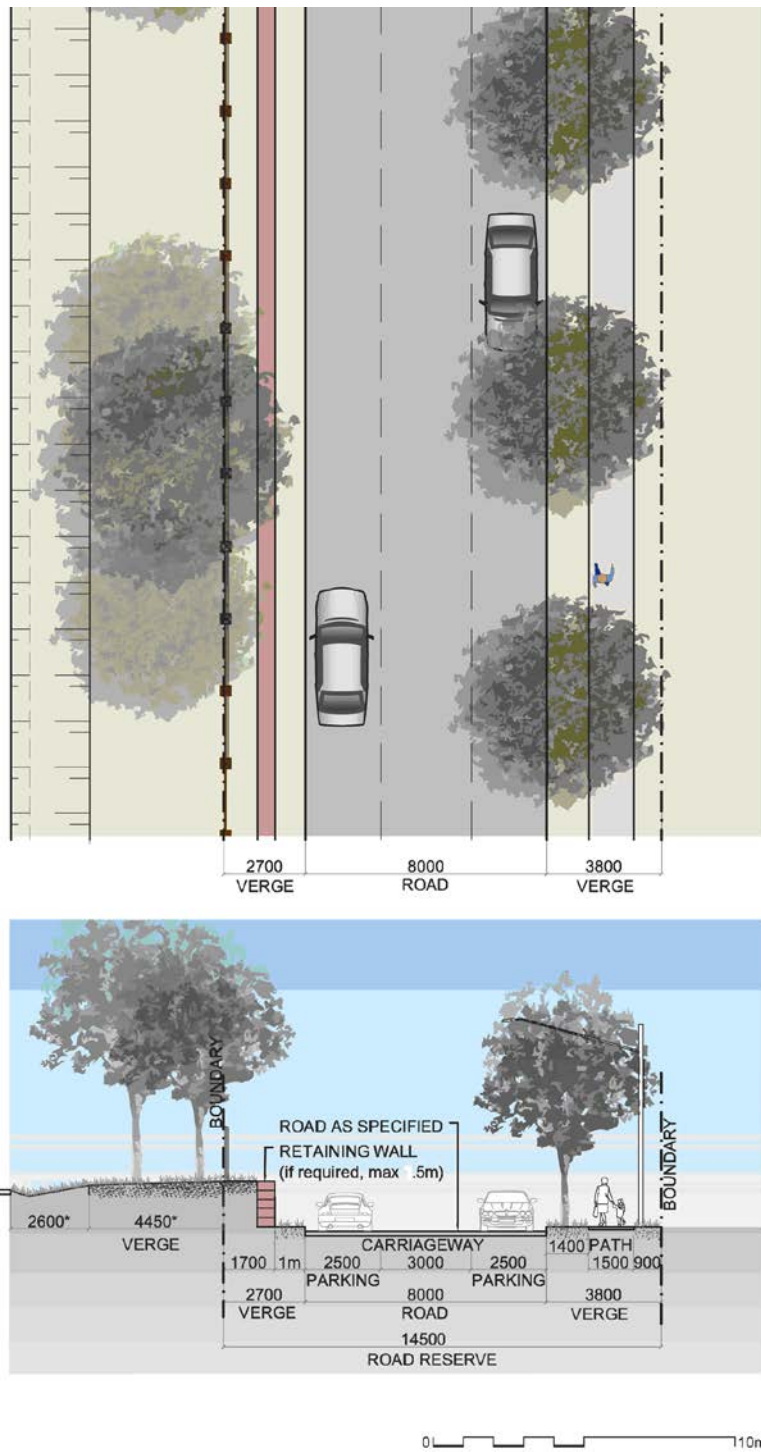


Figure E1.7j – Loop Road



1.3.2 Street Furniture and Public Art

A. Objectives

- a) To visually define and promote attractive public spaces.
- b) To enhance public spaces so that they are vibrant, safe and welcoming.
- c) To create a sense of identity for Caddens by creating distinctive places which reflect local heritage and the local environment.
- d) To facilitate cultural identity through art and design in public places and through engagement of the local community.

B. Controls

- 1) Public art may be freestanding art objects or works integrated into building facades, other built edges, water courses and landscaping adjoining public spaces.
- 2) Street furniture is to enhance pedestrian comfort, convenience and amenity and to form an integral element of the streetscape.
- 3) The provision of street furniture in public spaces must include, as appropriate:
 - a) Seats.
 - b) Litter bins.
 - c) Drinking fountains.
 - d) Lighting.
 - e) Information signs.
 - f) Bicycle racks.
 - g) Planter boxes.
 - h) Other items suitable to the function of each public space.
- 4) Street furniture throughout precincts should be consistent in design and style.
- 5) Street furniture is to be located so as not to impede mobility, in accordance with A51428:1-4.
- 6) Location and detailing of all proposed street furniture and public art is to be indicated on the Landscape Plans submitted with Development Applications.

1.3.3 Pedestrian and Cycle network

A. Objectives

- a) To provide an attractive, convenient, efficient and safe network of pedestrian and cycleway paths for the use of the community, within and beyond the site.
- b) To encourage residents to walk or cycle, in preference to using motor vehicles, as a way of gaining access to schools, shops, and local community and recreation facilities.
- c) To promote the efficient use of land by allowing pedestrian pathways and cycleways to be located within parks and corridors wherever practical.

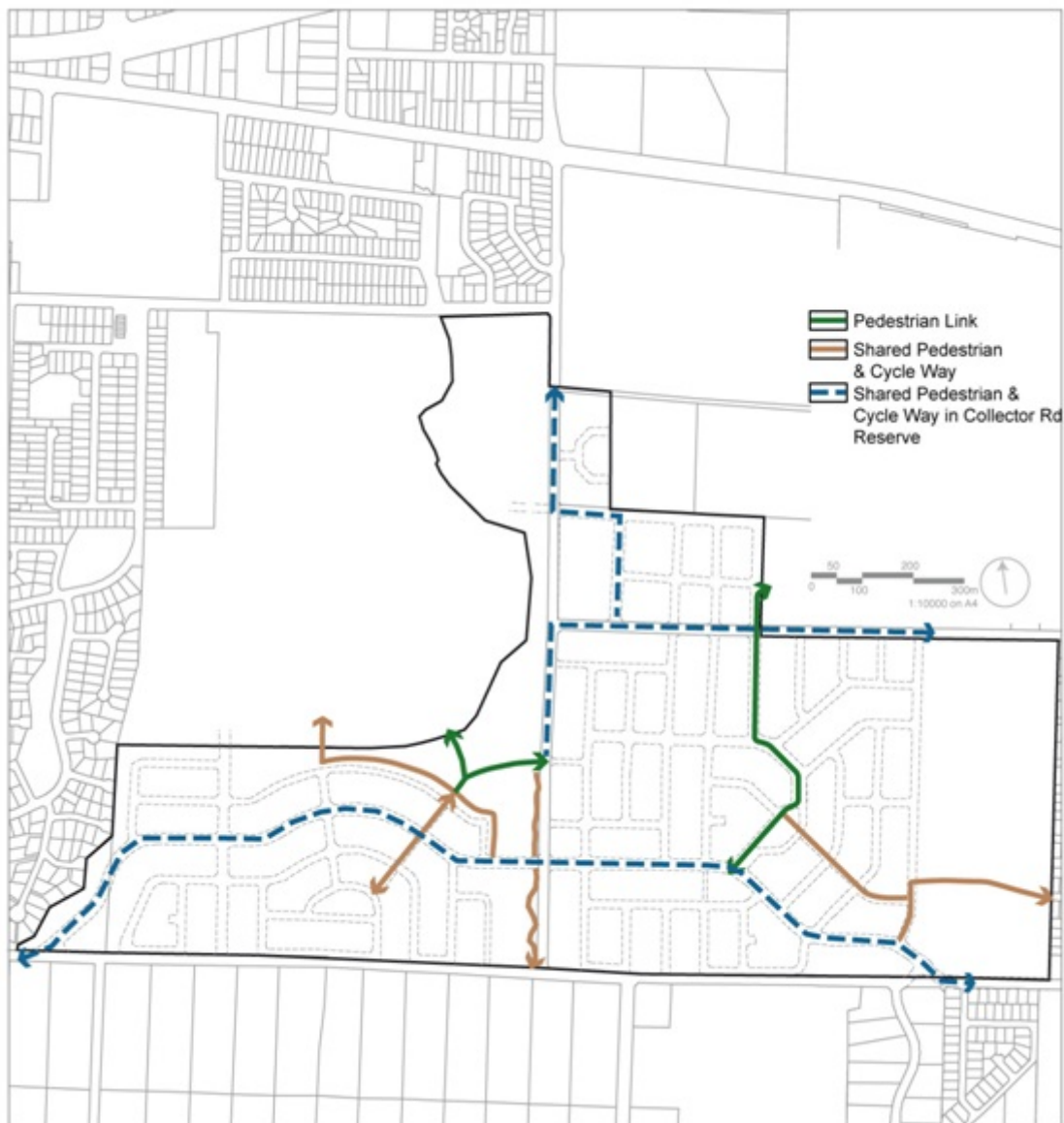
B. Controls

- 1) Key pedestrian and cycleway routes are to be provided generally in accordance with

Figure E1.8.

- 2) The design of cycleways located within the road reserve is to be in accordance with Figure E1.7.
- 3) The minimum width of off-street shared cycle and pedestrian pathways is to be 2.5m (as shown in Figure E1.7g).
- 4) The minimum width of pedestrian footpaths is 1.5m.
- 5) All pedestrian and cycleway routes and facilities are to be consistent with the Planning Guidelines for Walking and Cycling (DOP & RTA 2004).
- 6) Pedestrian and cycle routes and facilities in public spaces are to be safe, well lit, clearly defined, functional and accessible to all.
- 7) Pedestrian and cycle pathways, and pedestrian refuge islands are to be designed to be fully accessible by all in terms of access points and gradients, generally in accordance with Australian Standard 1428:1-4.
- 8) Pedestrian and cycle pathways are to be constructed as part of road infrastructure works with detailed designs to be submitted with DAs.

Figure E1.8 – Pedestrian & Cycle Routes



1.3.4 Public Transport

A. Objectives

- a) To encourage the use of public transport.
- b) To enable the efficient operation of buses on designated streets.
- c) To enable the majority of residential lots to be within a walking distance of 400m from a bus stop.

B. Controls:

- 1) Bus routes are to be provided generally in accordance with the requirements of Transport for NSW. Figure E1.9 provides an indicative concept plan of the route and bus stops.
- 2) Roundabouts on bus routes are to be designed to accommodate bus manoeuvrability.
- 3) Bus stops (where known) are to be provided on-street and not within indented bays. Bus shelters are to be provided at key stops and installed at the subdivision construction stage.

Bus shelters will be provided along the bus route.



Figure E1.9 – Public Transport Network



1.3.5 Open Space, Environmental Conservation and Landscape Network

A. Objectives

- a) To provide for the public open space and recreational needs of residents.
- b) To ensure quality design and embellishment of all public open space.
- c) To ensure that the development of elevated, visually sensitive land contributes positively to, and enhances, the landscape character of Caddens.
- d) To protect significant views and viewsapes.
- e) To enhance the character of environmental conservation areas through revegetation.
- f) To reinforce the rural character of Caddens Road through appropriate landscaping and fencing.
- g) To ensure that landscaping utilises robust and low maintenance materials and species, that landscaped areas are accessible by all, and that design meets Crime Prevention Through Environmental Design (CPTED) principles.

B. Controls

- 1) The open space network, consisting of active and passive open space, together with the riparian corridor and other areas of conservation value are to be provided generally in accordance with Figure E1.10.
- 2) The design and embellishment of public open space must satisfy the principles of high quality, robust, low maintenance design and address the vision for Caddens.

Figure E1.10 – Open Space and Environmental Conservation Network



- 3) The provision of open space and facilities including embellishment is to be consistent with the WELL Precinct Section 94 Contributions Plan.
- 4) Passive open space should generally be bordered on all sides by streets and houses should be oriented towards the open space for passive surveillance.
- 5) The detailed design of public open space areas is to incorporate the following elements, where appropriate, in accordance with the Open Space Strategy and the WELL Precinct Section 94 Contributions Plan:
 - a) play and other spaces to cater for a range of ages;
 - b) adequate car and bicycle parking, lighting and waste management facilities;
 - c) amenities such as seating and shade structures, drinking fountains, lighting, information signs, feature fencing and the like; and
 - d) linkages with the broader pedestrian and cycle network.
- 6) The hilltop parks should be designed generally in accordance with the Caddens Public

Domain Strategy and the design requirements described in this section of the Plan. Figures E1.11 and E1.12 provide indicative concept plans for these hilltop parks.

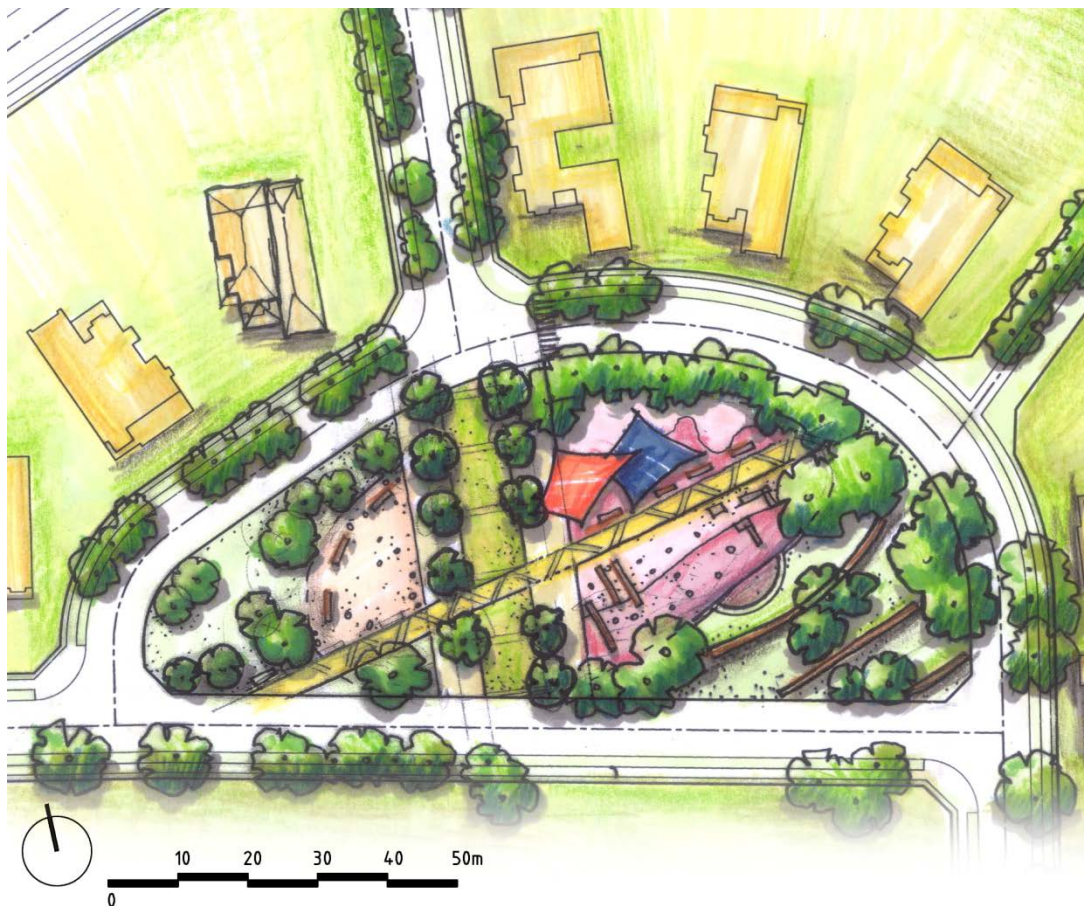
- 7) The 0.35 hectare Eastern Hilltop Park located on the ridgeline to the east of the site is to present as natural woodland. It is to incorporate the following elements as illustrated in Figure E1.11:
- a) heritage interpretation of the ruins of the 19th century farmhouse and re-use of materials where appropriate;
 - b) viewing platforms to other vantage points within Caddens and beyond;
 - c) an informal kick about space on the flatter land;
 - d) accessible paths where possible;
 - e) seating areas and shade structures;
 - f) canopy trees;
 - g) existing trees, Cumberland Plain Woodland species as well as other endemic robust native plant species and where necessary saline-tolerant species; and
 - h) low maintenance and robust finishes.

Figure E1.11 – Eastern Hilltop Park Concept



- 8) The 0.5 hectare Western Hilltop Park is to function as a neighbourhood park. Detailed design is to incorporate the following elements as illustrated in Figure E1.12:
- a) children's play spaces on soft-fall including high quality interactive play structures and equipment;
 - b) terraced lawns to increase usability of passive spaces in sloped areas, including a potential look-out space;
 - c) accessible paths where possible
 - d) seating areas and shade structures;
 - e) a north-south path to connect to the surrounding streets and the riparian corridor;
 - f) semi-open canopy trees;
 - g) endemic native and other robust plant species; and
 - h) low-maintenance and robust finishes.

Figure E1.12 – Western Hilltop Park Concept



- 9) The 1.38 hectare Western Linear Park is to function as passive open space and act as an acoustic and visual barrier between Collector Road 1 and the residential areas of Kingswood to the west. The park is to include earth mounding and canopy trees. Detailed design is to incorporate the following elements as illustrated in Figure E1.13:
- a) areas of passive open space;
 - b) a shared pedestrian and cycle path;
 - c) natural and/or organic forms for noise and visual screening of Collector Road 1;
 - d) canopy trees for shade; and
 - e) planting of endemic native and other robust plant species.

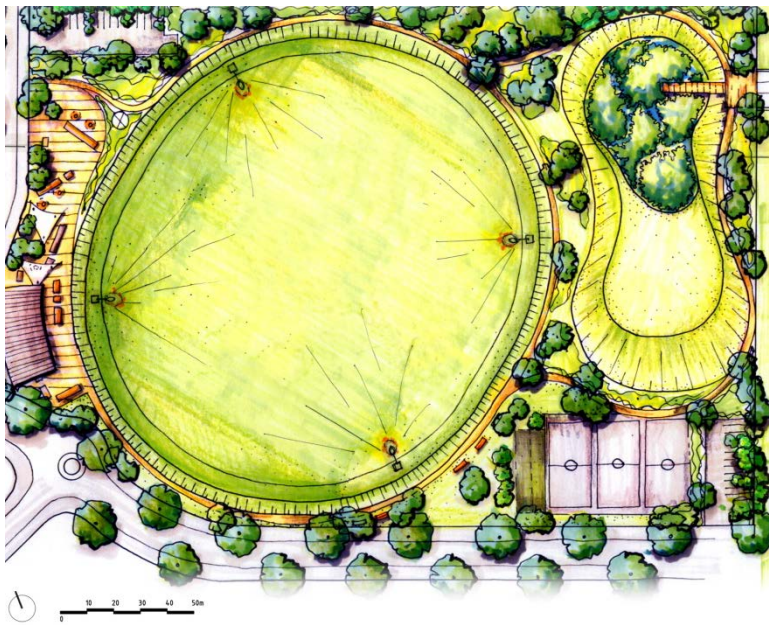
Figure E1.13 – Western Linear Park Concept



- 10) The 5.1 hectare combined area of active open space (3.9 hectares) and detention basin (1.2 hectares) is to provide a local community focus and be designed generally in accordance with the Caddens Public Domain Strategy and Figure E1.14. It is to incorporate the following elements consistent with the Open Space Strategy and the WELL Precinct Section 94 Contributions Plan:
- a) connections to the shared pedestrian and cycle path;
 - b) an amenities block;
 - c) a children's playground;

- d) seating areas;
- e) a large level area suitable for future playing field(s) with flood lights;
- f) potential courts such as hard courts/tennis courts, bocce courts, netball courts and large chess board;
- g) canopy trees and structures to provide shade and amenity;
- h) planting of robust endemic native species; and
- i) car parking.

Figure E1.14 – Active open space concept

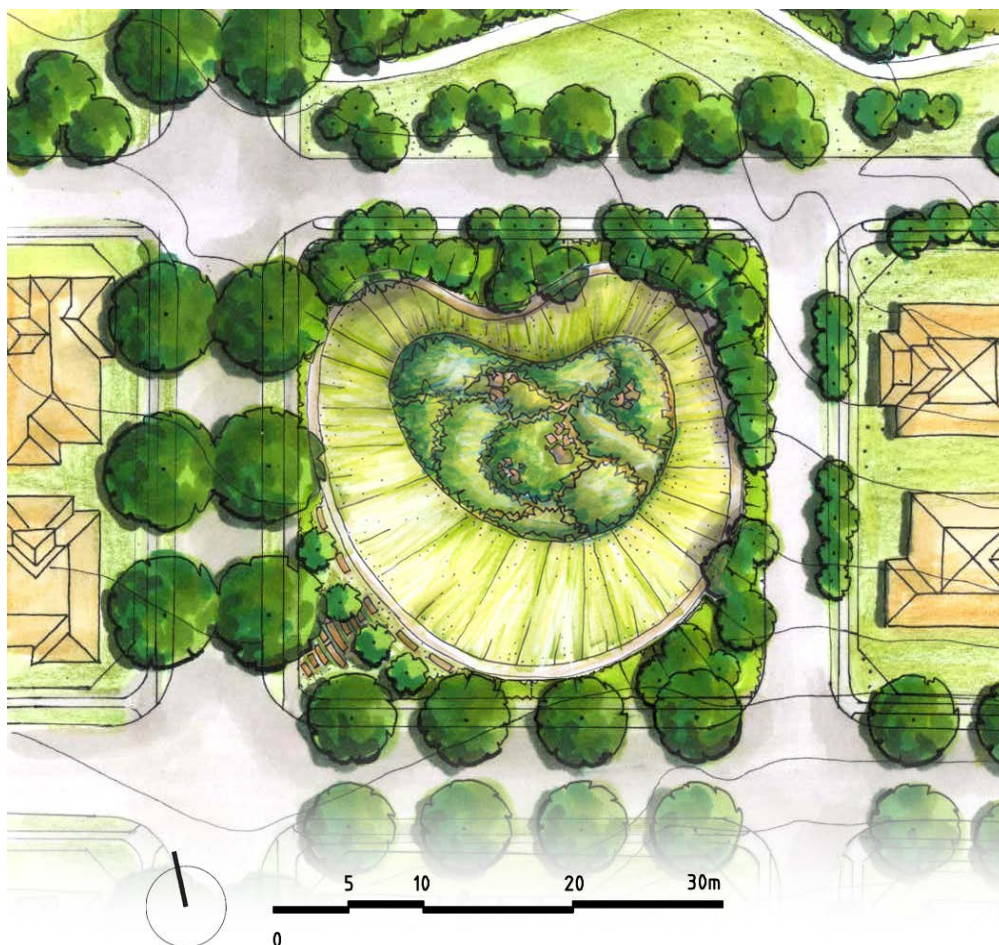


- 11) The detention basins are to be landscaped so that they appear as natural rather than engineered features and sit harmoniously in their surroundings. They are to be designed and treated to satisfy the requirements of this section of the Plan and to accord with the Caddens Public Domain Strategy. Figure E1.15 provides an indicative concept plan for their design which is to typically incorporate the following elements as appropriate:
 - a) a natural/organic basin form with steeper slopes facing east to avoid the hot westerly winds and exposure to afternoon sun;
 - b) a rain garden at the base of the basin with sloped embankments (capable of being mowed);
 - c) a 1.5m path informally planted with native trees with low level under planting to define the top of the detention basin;
 - d) passive open space; and
 - e) seating areas along flatter slopes where possible to allow views across the rain gardens.

Detention basins are intended to be natural elements.



Figure E1.15 – Detention Basins Concept



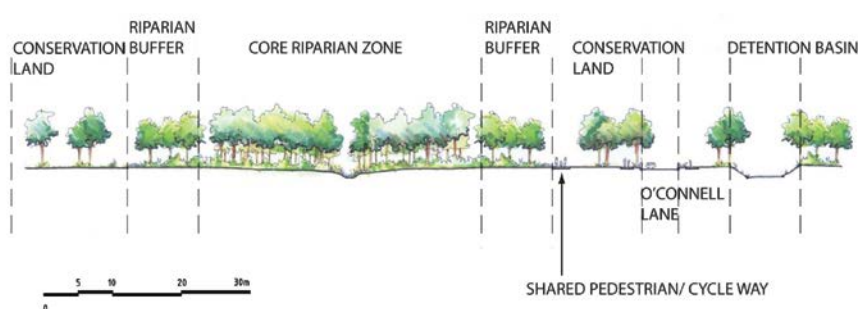
- 12) The environmental conservation area is to accord with the Riparian Corridor Management Plan and the requirements set out in Sections 3.5 and 3.8 of this section, and is to be designed generally in accordance with Figures E1.16 and E1.17.

- 13) The environmental conservation area is to include a pedestrian and cycle path, seating and picnic shelters and areas for informal passive recreation in a manner that maintains the environmental significance of the area.
- 14) Interpretative material in relation to Aboriginal heritage and the physical environment should be sensitively placed along pathways within the riparian/conservation corridor.

Figure E1.18 – Riparian Corridor (plan)- A pedestrian path/cycleway will extend along the edge of the riparian corridor



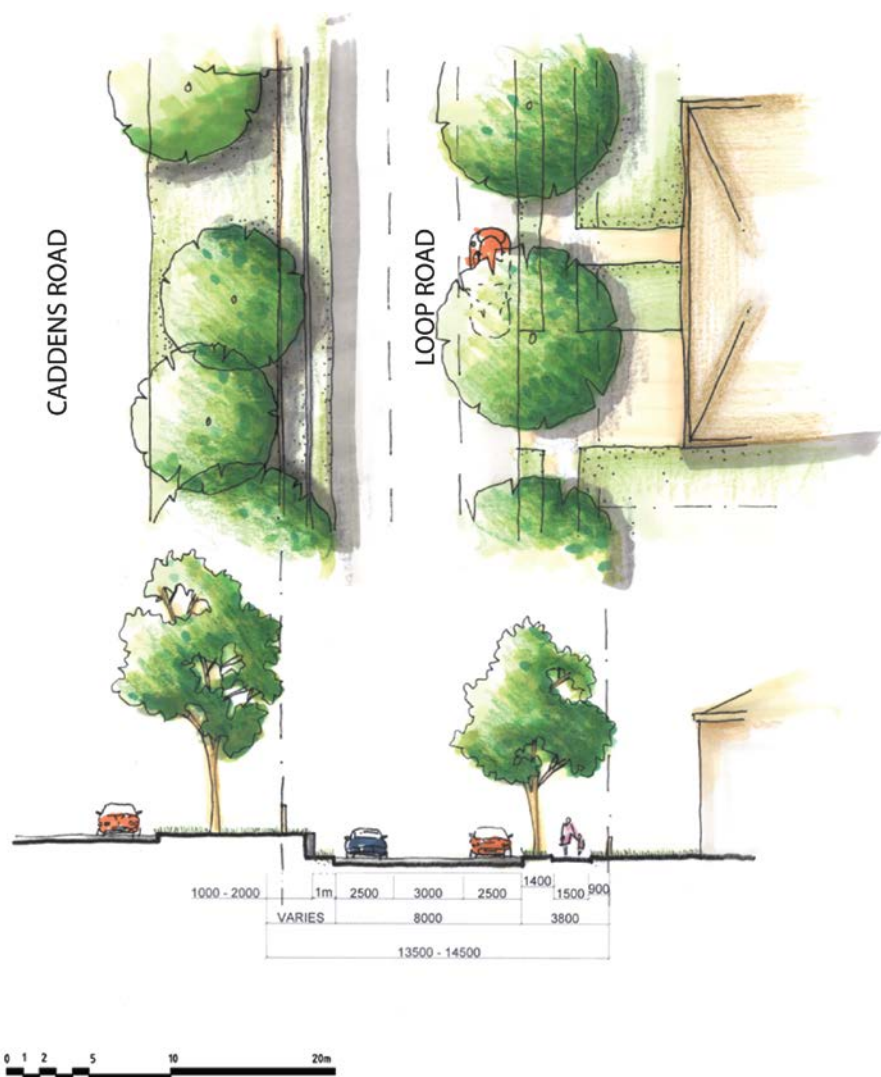
Figure E1.17 – Riparian Corridor (section)



Where an area of open space adjoins a residential area, a Landscape Plan for that open space is to be submitted to Council at the time of subdivision of the adjoining residential area. The Plan is to provide details on elements such as:

- a) earthworks, including existing and proposed levels;
 - b) erosion control measures;
 - c) drainage and stormwater control measures;
 - d) assessment of visual impact;
 - e) measures to address salinity;
 - f) fencing and walls;
 - g) signage, including any heritage or environmental interpretation;
 - h) plant species and sizes (including street trees);
 - i) hard and soft landscaping treatments;
 - j) lighting;
 - k) seating;
 - l) public art;
 - m) waste facilities;
 - n) play equipment; and
 - o) site specific maintenance specifications.
- 15) The design of public art elements must consider longevity of materials; ease and cost effectiveness of maintenance; and use of sustainable materials.
- 16) The selection of public art elements must fit within the context of a public art theme for Caddens and reflect appropriate consultation with the community.
- 17) The verges between the 'loop roads' and Caddens Road (as shown in Figure E1.3) are to be landscaped in accordance with Figure E1.18. Trees should be endemic and Cumberland Plain woodland species and groupings of trees should be informal to reflect the rural character of the street.
- 18) Fencing along Caddens Road boundary is to be a rural style solid timber post and rail fence. The northern verge of Caddens Road is to be landscaped in accordance with the Caddens Public Domain Strategy.
- 19) Fencing of the Caddens Road boundary and landscaping of the northern verge of Caddens Road is to be undertaken at the time of subdivision.
- 20) Fences along Caddens Road must incorporate gaps to enable pedestrian and cycle access, but not access for motor vehicles.

Figure E1.18 – Landscaping of Loop Road / Caddens Road verge



Landscape treatment similar to that proposed along the loop road as a transition to Orchard Hills rural area.



1.3.6 Biodiversity

A. Objectives

- a) To ensure the protection and enhancement of existing significant vegetation and improve or maintain biodiversity values.
- b) To retain areas of high conservation significance.
- c) To protect habitat for significant fauna species.
- d) To protect, restore and enhance the environmental qualities of Werrington Creek and its buffers.
- e) To allow the riparian corridor buffers to be used primarily for conservation and drainage, along with incidental recreational activities such as walking and cycling.
- f) To prevent the spread of weeds during and after construction.

B. Controls

- 1) A Flora and Fauna Management Plan (FFMP) is to be prepared by a suitably qualified ecologist for the areas of high conservation significance along the Werrington Creek riparian corridor. The FFMP should include a Vegetation Management Plan and a Riparian Corridor Management Plan.
- 2) The FFMP is to be submitted as part of any subdivision of land adjoining the Werrington Creek riparian corridor and should detail weed removal, revegetation and rehabilitation, rubbish removal, habitat enhancement and ongoing protection and management measures.

- 3) All subdivision design and bulk earthworks are to consider the need to minimise weed dispersion and eradication.
- 4) Existing native vegetation in the riparian corridor is to be conserved and enhanced, and where required revegetated with endemic species as set out in the Vegetation Management Plan.

1.3.7 Aboriginal and European Heritage

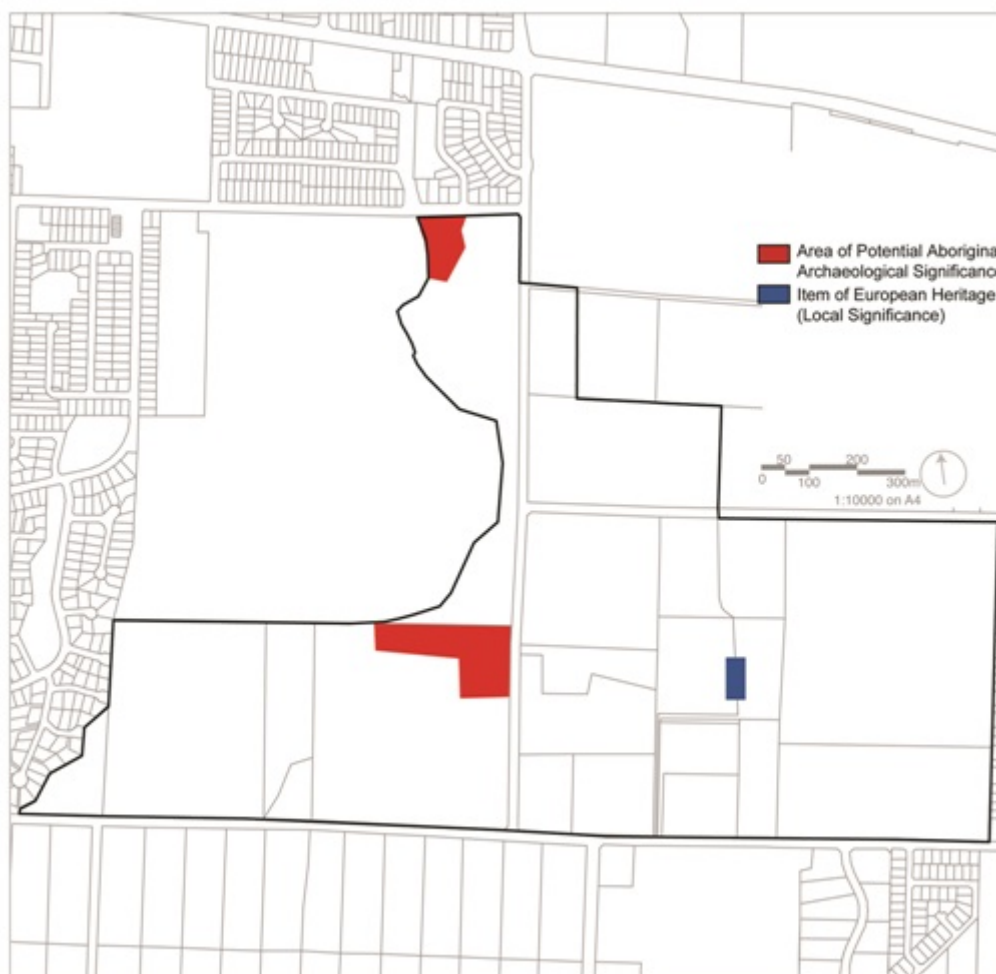
A. Objectives

- a) To protect and manage areas and elements of identified Aboriginal and European archaeological heritage.
- b) To interpret, where appropriate, elements of Aboriginal and European heritage.

B. Controls

- 1) Areas of Aboriginal archaeological conservation value are identified at Figure E1.19. No development is to occur in this area without appropriate investigation, consent under Section 90 of the *National Parks and Wildlife Act 1974* and consultation with the relevant local Aboriginal groups.
- 2) Any construction work that has the potential to encroach on the conservation area is to be fenced off during construction works.
- 3) Any development that encroaches on the conservation area is to be subject to archaeological salvage excavation following consultation with relevant local Aboriginal groups.
- 4) Archaeological test excavations are to be undertaken in accordance with Section 87 of the *National Parks and Wildlife Act 1974* to determine the significance of areas with potential Aboriginal heritage value shown in Figure E1.19.
- 5) An item of European heritage significance (the ruins of a 19th century house located in the area of the proposed eastern hilltop park) is shown at Figure E1.19. Prior to demolition archival recording of the archaeological features is to be undertaken and a permit under Section 139 of the *Heritage Act 1977* obtained. Demolition is to be monitored.
- 6) Interpretive signage that provides information on the Aboriginal and European history and heritage significance of the locality is to be provided within public domain areas. Street names should reflect the history of the land.

Figure E1.19 – Areas of Aboriginal & European Cultural Heritage



1.3.8 Bushfire Hazard Management

A. Objectives

- a) To encourage sound management of areas potentially prone to bushfire.

B. Controls

- 1) Subject to detailed design at subdivision stage, a 20m precautionary bushfire setback is to be provided from the vegetation in the core riparian zone (see Figure E1.17).
The setback:
 - a) may incorporate roads;
 - b) is to be located wholly outside of a core riparian zone; and
 - c) may be used for open space and recreation subject to appropriate fuel management.
- 2) Vegetation within the area of public open space in the south eastern corner of Caddens is to be managed as a 'fuel reduced area'.

1.3.9 Water Cycle Management

A. Objectives

- a) To preserve the quality of the riparian corridor along Werrington Creek.
- b) To promote sustainable and integrated management of water resources through best practice stormwater management, water conservation and environmental protection.
- c) To ensure the quality and quantity of water leaving the urban area does not impact adversely on the health of Werrington Creek.
- d) To mitigate the impacts of urban development on stormwater quality.
- e) To ensure that there is no increase in the peak run-off rate at key locations within and around the Caddens Release Area as a result of development for the 20%, 5% and 1% Annual Exceedance Probability (AEP) flood level.

B. Controls

- 1) A riparian corridor 20m in width plus a 10m wide buffer zone is to be provided along both sides of Werrington Creek in accordance with Figures E1.16 and E1.17.
- 2) No residential allotment is to be located at a level lower than the 1% AEP flood level plus a freeboard of 500mm. Pedestrian and cycle pathways and open space may extend within the 1% AEP flood level, provided that the safe access criteria contained in the NSW Floodplain Manual are met.
- 3) Stormwater management plans are to be prepared for the catchments covering Caddens and are to demonstrate how the quantity and quality of urban run-off as a result of development will be managed.
- 4) Stormwater detention is to reduce post development flows to pre development levels.
- 5) All development is to incorporate water sensitive urban design (WSUD). A WSUD Strategy is to be submitted as part of any subdivision DA in accordance with Council's *Sustainability Blueprint for Urban Release Areas* (June 2005).
- 6) Erosion control and bank stabilisation measures are to be incorporated within the waterway where required.

1.3.10 Contamination Management

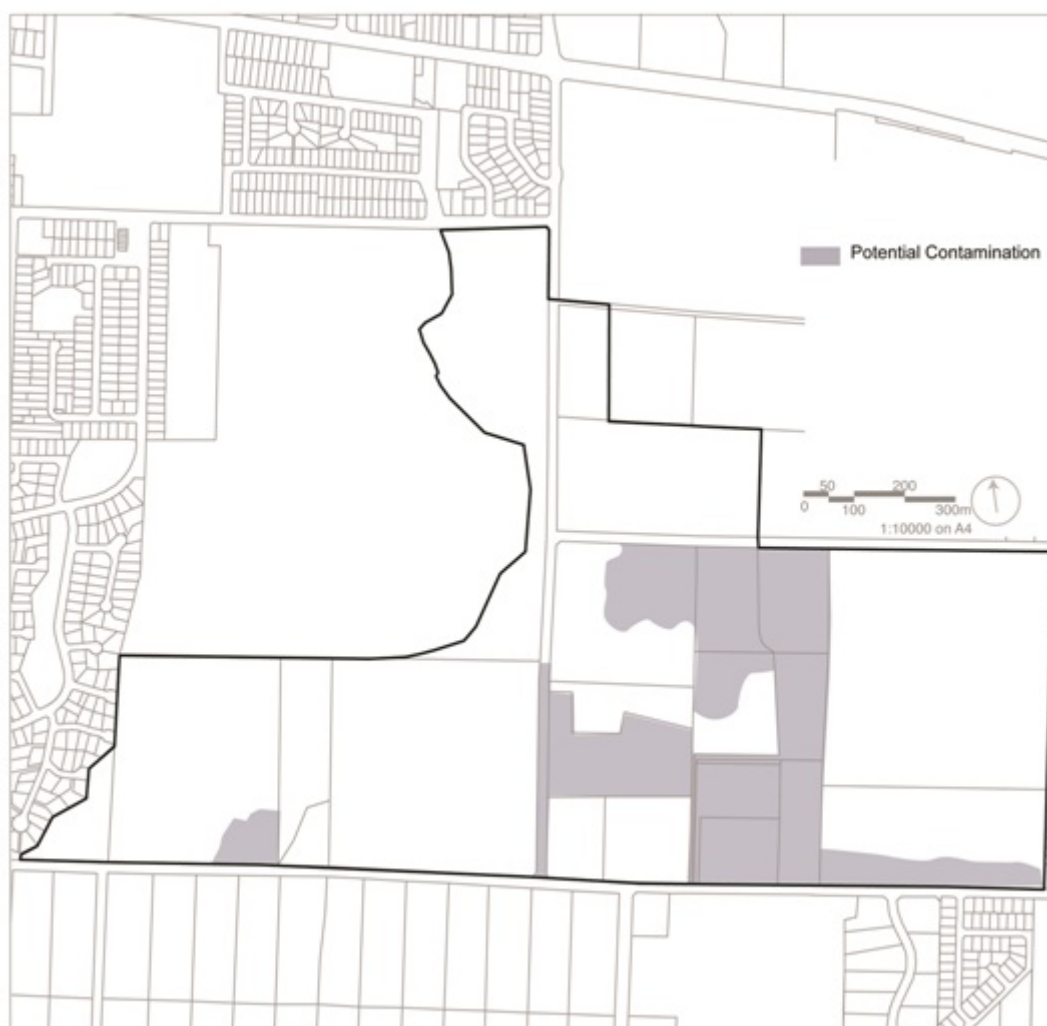
A. Objectives

- a) To minimise the risks to human health and the environment from the development of potentially contaminated land.
- b) To ensure that potential site contamination issues are adequately addressed at the time of subdivision.

B. Controls

- 1) DAs for development in areas of potential contamination as identified at Figure E1.20 shall be accompanied by a Phase 2 Environmental Site Assessment in accordance with Council's policies and requirements.
- 2) A hazardous materials assessment is required as part of the demolition of any building.

Figure E1.20 – Potentially Contaminated Land



1.3.11 Salinity Management

A. Objectives

- 1) To minimise the damage to property and vegetation caused by existing saline soils or processes that may create saline soils.
- 2) To ensure development will not significantly increase the salt load in any watercourses.
- 3) To prevent degradation of the existing soil and groundwater environment, and to minimise erosion and sediment loss and water pollution due to siltation and sedimentation.

B. Controls

- 1) DAs for subdivision of land identified in Figure E1.21 as being constrained by salinity are to be accompanied by a salinity report prepared by a suitably qualified consultant. The report is to include comprehensive sampling and cover the conditions of the site, the impact of the proposed subdivision on the saline land and the mitigation measures that will be required during the course of construction. Investigations and sampling for salinity are to be conducted in accordance with the requirements of *Site Investigations for Urban Salinity* (DNR). All works are to conform to the *Western Sydney Salinity Code of Practice*, June 2003 (WSROC) and Council's policies.

- 2) Groundwater recharge is to be minimised by:
 - a) directing runoff from paved areas into lined stormwater drains rather than along grassed channels as necessary;
 - b) lining or locating any pondages higher in the landscape to avoid recharge where proximity to the water table is likely to create groundwater mounding;
 - c) encouraging use of low water demanding plants and tree planting especially adjacent to watercourses.
- 3) For road works within areas identified as a salinity hazard:
 - a) disturbance of subsoil should be minimised;
 - b) engineering designs should consider salinity impacts; and
 - c) subsoil drainage is to be installed along both sides of all roads.
- 4) All development must incorporate soil conservation measures to minimise soil erosion and siltation during construction and following completion of development. A Soil and Water Management Plan, prepared in accordance with Council policies is to be submitted with any subdivision DA.
- 5) Land at the base of slopes near creeks may require saline tolerant species

Figure E1.21 - Salinity Constraints



1.4 Residential Development

1.4.1 Subdivision and Neighbourhood Design

A. Objectives

- a) To provide a diverse range of housing forms and densities that respond to community needs for different dwelling sizes and to different household types.
- b) To establish a clear urban structure that maximises the sense of neighbourhood and encourages walking and cycling.
- c) To establish a subdivision layout that provides for efficient residential development and maximises the natural attributes of the land.
- d) To ensure that all residential lots are afforded a high level of amenity in terms of solar access, views/outlook and/or proximity to public open space.
- e) To provide a range of densities, lot sizes and house types to foster a diverse community and interesting streetscapes.

B. Controls

- 1) Subdivision layout should generally be in accordance with Figure E1.2 and is to create a recognisable, open and networked street hierarchy that responds to natural topography, the location of existing significant trees and solar design principles.
- 2) Pedestrian connectivity is to be provided between residential development and public open space areas, public transport nodes, and community facilities and services.
- 3) Lot orientation and configuration is to be generally consistent with the subdivision principles shown at Figure E1.22. Preferred lot orientation is either on a north-south or east-west axis as per Figure E1.22. Where there are other forms of amenity available, such as views or an outlook over open space, an alternative lot orientation can be considered.

Lots orientated for solar access (Source: Amcord)

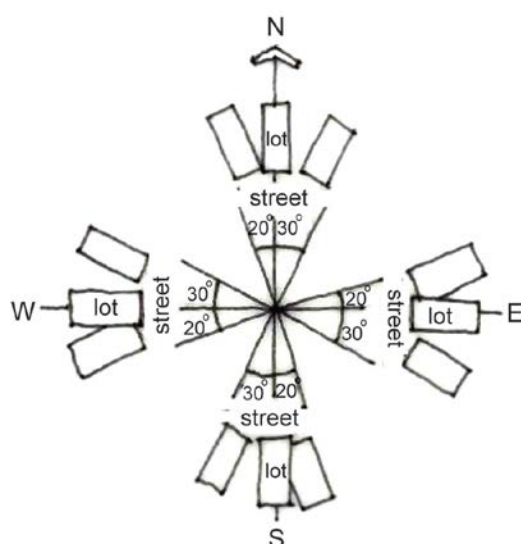
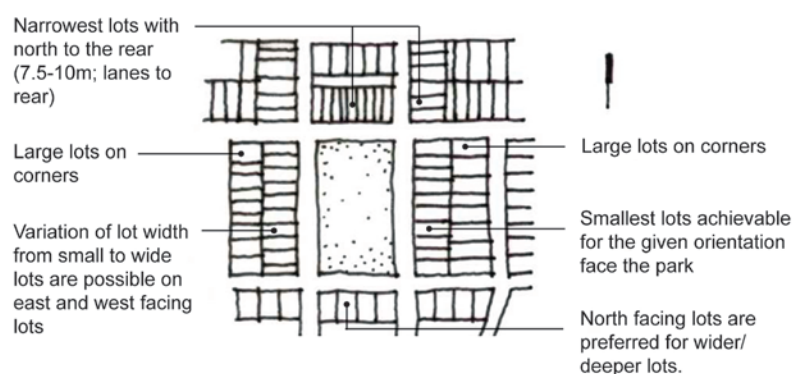


Figure E1.22 – Lot Design Principles



Example of subdivision pattern likely after applying the principles

- 4) A diverse range of lot types and frontages should be provided in each street. The repetition of lots with the same frontage along a street is to be avoided. For lots 12.5m wide and above, no more than five lots in a row should have the same frontage.
- 5) The minimum area for corner lots is 450m².
- 6) The minimum lot dimensions for all dwelling types at Caddens are set out in Table E1.2.

Table E1.2: Minimum lot dimensions

Dwelling type	Lot area (m ²)	Lot width (m)
Residential flat buildings	1000	30
Detached – contiguous (sharing a common border) with Caddens Road*	600	18
Detached - hilltops*	450	15
Detached	450	15
Detached	350	12.5
Built to boundary	350	10 -15
Semi-detached	225	7.5 -10
Attached	195	7.5 -9.5

* See Figure E1.3

- 7) All applications for subdivision proposing residential allotments with a site area of less than 350m² are to be accompanied by development plans for the proposed dwellings on those lots. Council may waive this requirement where an application for subdivision creates no more than 2 lots with a site area less than 350m² per dwelling and it is satisfied that the subdivision application demonstrates (through use of restrictions such as building envelopes, preferred locations for garages and open space and the like) that an appropriate built form that complies with the relevant provisions of this DCP can be

delivered on the lot. These restrictions will be approved as part of the subdivision application and will be required to be complied with by any future application proposing a dwelling on that lot.

- 8) On lots greater than or equal to 350m² in size where a built to boundary (zero lot line) dwelling is permitted, the side of the allotment that may have a zero lot alignment shall be shown on the approved subdivision plan. The Section 88B instrument for the subject lot and the adjoining lot shall include a note identifying the potential for a building to have a zero lot line.

1.4.2 Streetscape, Feature Elements and Roof Design

A. Objectives

- a) To ensure that buildings are designed to enhance the desired built form and character of the neighbourhood by encouraging quality designs that fit harmoniously with their surroundings.
- b) To ensure equitable access to natural light and ventilation for the occupants of all residential buildings.
- c) To provide a clear distinction between private and public space and to encourage casual surveillance of the street.
- d) To create an attractive and cohesive streetscape through the provision of simple and articulated building and roof forms in a contemporary style.
- e) To ensure that eaves provide sun shading and weather protection to windows and doors and contribute to aesthetic interest.

B. Controls

- 1) The primary street facade of a dwelling must incorporate an entry feature or portico and at least two of the following design features:
 - a) balcony to any first floor element;
 - b) a variation in scale to adjoining properties;
 - c) architectural elements which recess or project by at least 600mm;
 - d) open verandah;
 - e) mix of building materials or finishes;
 - f) bay windows or similar features;
 - g) pergola or similar feature above garage doors.

Good streetscape design principles are illustrated at Figure E1.23.

- 2) The secondary street facade on a dwelling on a corner lot must incorporate a window from a habitable room and at least two of the following design features:
 - a) verandah;
 - b) vertical architectural elements to reduce the horizontal emphasis of the façade;
 - c) balcony;
 - d) an architectural element which recesses or projects from the façade by at least 600mm.
 - e) landscaping and/or fencing compatible with the treatments that have or will occur on neighbouring sites.

- 3) Except on built to boundary (zero lot line) dwellings, eaves are to be provided on all roofs and should have a minimum overhang of 450mm (measured to the fascia board). Where practical, 600mm should be considered to achieve an increased degree of shading to windows. Council will consider alternative solutions to eaves as long as they provide appropriate sun shading to windows and display a high level of architectural merit.
- 4) Water tanks, air conditioning units, solar hot water tanks and roof clutter such as satellite dishes should not be prominent when viewed from any street.
- 5) Proposed colours, materials and finishes are to be from a predominantly neutral palette of colours and varied across the front elevations of buildings. Bright colours are to be avoided, except for architectural features.
- 6) Exact mirror-imaging of semi-detached dwelling facades is not permitted. However, symmetrical design is permitted where each dwelling can satisfy two different design features (as listed under the controls for primary street facades above) and where the overall design of the dwellings are compatible with the streetscape in terms of design, built form, scale and bulk (see Figure E1.23).
- 7) The repetition of identical housing designs in a group of dwellings, other than for attached dwellings, will not be permitted.

Figure E1.23 – Streetscape Design Principles. Source: DKO



1.4.3 Dwelling Height, Massing and Siting

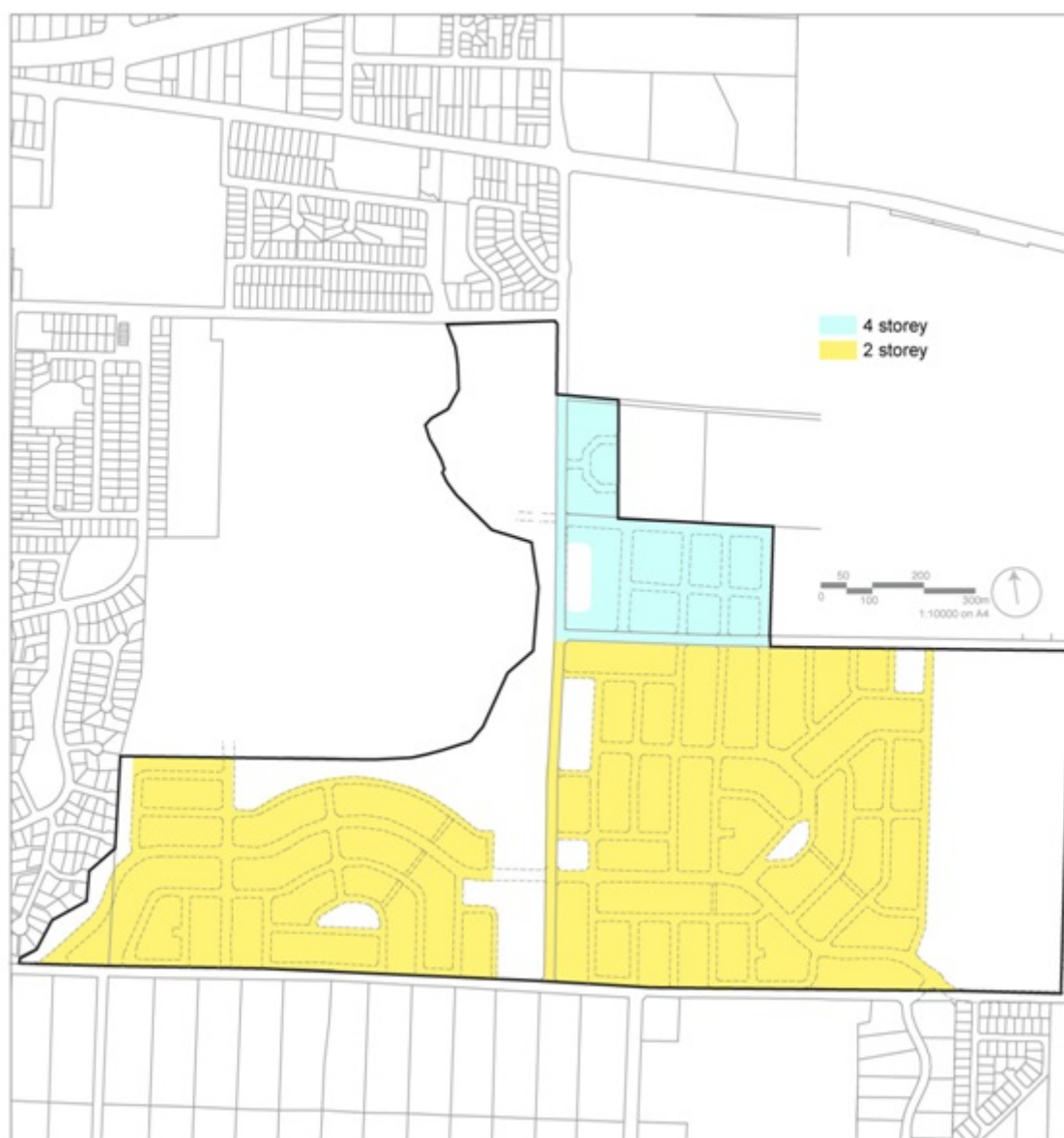
A. Objectives

- a) To ensure development is appropriately scaled to suit the dwelling's local context.
- b) To ensure building heights achieve built form outcomes that reinforce quality urban and building design.
- c) To create attractive and cohesive streetscapes.
- d) To protect residential amenity in relation to solar access and privacy.
- e) To encourage efficient and sustainable use of land.

B. Controls

- 1) The maximum number of storeys, measured from existing ground level, must be in accordance with those shown in Figure E1.24.
- 2) Single and attached housing is generally to be 2 storeys in height. Council may permit a third storey if it is satisfied that it is located:
 - a) on a prominent street corner; or
 - b) on the lower side of land with a finished ground level slope equal to or more than 15%; and
 - c) is not likely to impact adversely on the existing or future amenity of any adjoining land in terms of overshadowing and visual privacy.
- 3) Buildings should be designed to ensure that 50% of the area of the required Principal Private Open Space of both the proposed development and the adjoining properties receive at least 3 hours of sunlight between 9am and 3pm on the 21 June.
- 4) For lots equal to, or greater than, 450m², the upper (second) level of a dwelling is to be no more than 30% of the lot area.

Figure E1.24 - Height Map



1.4.4 Building Setbacks

A. Objectives

- a) To provide a variety of streetscapes that reflect the character of different precincts, the diversity of edge conditions, house types and road hierarchies.
- b) To reduce the dominance of garages on the streetscape.
- c) To encourage eaves, verandahs, balconies and other feature elements on the front facades of dwellings.
- d) To minimise the impacts of development on neighbouring properties in relation to views, privacy, and overshadowing.
- e) To provide 'breathing space' between buildings.
- f) To ensure that development on corner lots is visually significant and promotes a strong

and legible character.

- g) To provide deeper front setbacks for dwellings that front or access Caddens Road to encourage dense landscaping.

B. Controls

- 1) Dwellings are to be consistent with the minimum front, side and rear setback controls in Table E1.3 and the front setback principles diagram at Figure E1.25.

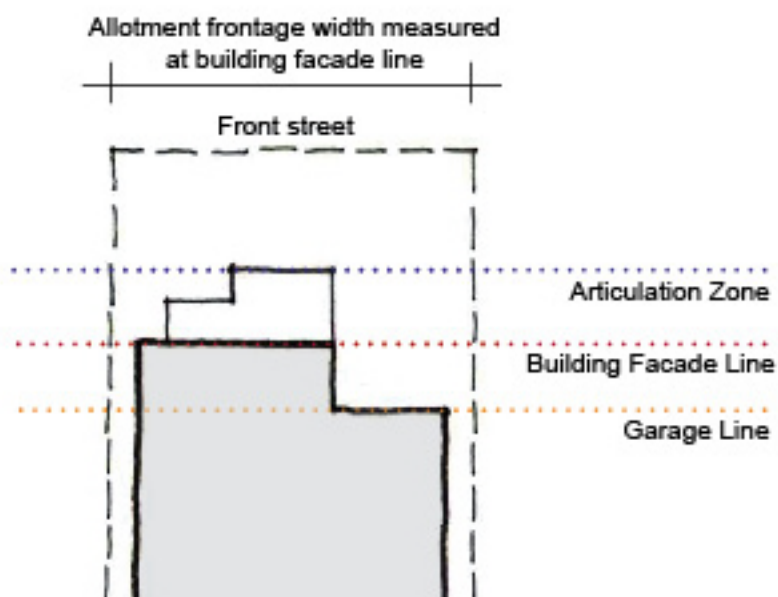
Table E1.3: Building setbacks

Dwelling type	Front *	Side	2 nd storey side	Rear
Detached contiguous (sharing a common border) with Caddens Rd (min. frontage: 18m)	6m	2m	2m	6m
Detached (frontage: 18m & greater)	4.5m	1.5m	1.5m	6m
Detached (frontage: 15m to less than 18m)	4.5m	0.9m	1.2m	6m
Detached (frontage: 12.5m to less than 15m)	4.5m	0.9m	1.2m	4m
Built to boundary	4.5m	0.9m & zero	2.4m from the adjoining built to boundary side boundary	4m**
Semi-detached	3m	0.9m & zero	1.2m on the unattached side	4m**
Attached	3m	zero	zero	4m**
Corner		See requirements in text below		

* measured from the front boundary to the building façade line

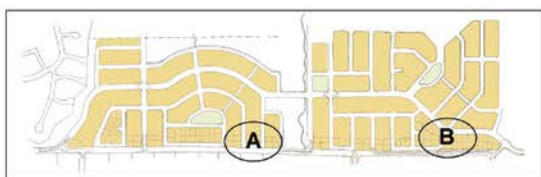
** excluding garage

Figure E1.25 – Front Setback Principles



- 2) On corner lots the setback for a secondary frontage is to be as follows:
 - a) 2m for all detached and semi detached dwellings on lots less than 18m wide; and
 - b) 3m for dwellings on lots 18m and wider.
- 3) Corner lots are to be splayed with the indent on both the primary and secondary street to be generally 5m. The building setback from the splayed corner boundary is to be a minimum of 2m.
- 4) Any building contiguous (sharing a common border) with Caddens Road is to be set back 6m from the boundary to Caddens Road.
- 5) Dwellings contiguous (sharing a common border) with Caddens Road are to be orientated and accessed in accordance with Figure E1.26.
- 6) Garages are to be set back a minimum of 1m behind the front building facade line as shown in Figure E1.26.
- 7) Garages on secondary streets are to be set back 1m behind the dwelling façade on the secondary street.
- 8) No setback is required for rear lane garages.

Figure E1.26 – Caddens Road Lot Layout



Location A



Location B

- 9) Dwellings are to be consistent with the side and rear setback controls at Table E1.3. Projections permitted into side and rear setback areas include eaves, sun hoods, gutters, down pipes, flues, light fittings and electricity or gas meters, rainwater tanks and hot water units.
- 10) The side setbacks of second storeys are to have regard to dwelling design, lot orientation and adjoining dwellings and are to comply with the following minimum dimensions:
 - a) detached dwelling – 1.2m on both sides;

- b) semi-detached dwelling – 1.2m on the unattached side;
 - c) built to boundary lots – 2.4m from the adjoining built to boundary side boundary.
- 11) Architectural elements which address the street frontage should be incorporated in the 'articulation zone' (see Figure E1.25). These may extend beyond the front façade by a maximum of 1m. The following elements are permitted:
- a) entry features or porticos;
 - b) awnings or other features over windows;
 - c) eaves and sun shading;
 - d) balcony or window box to any first floor element;
 - e) projecting architectural elements;
 - f) open verandahs;
 - g) bay windows or similar features.
- 12) Side walls should be staggered/ indented to avoid an excessive long and blank appearance.

1.4.5 Development Forms

Built to Boundary Dwellings

The general form and style of 'built to boundary' dwellings is illustrated in Figure E1.27.

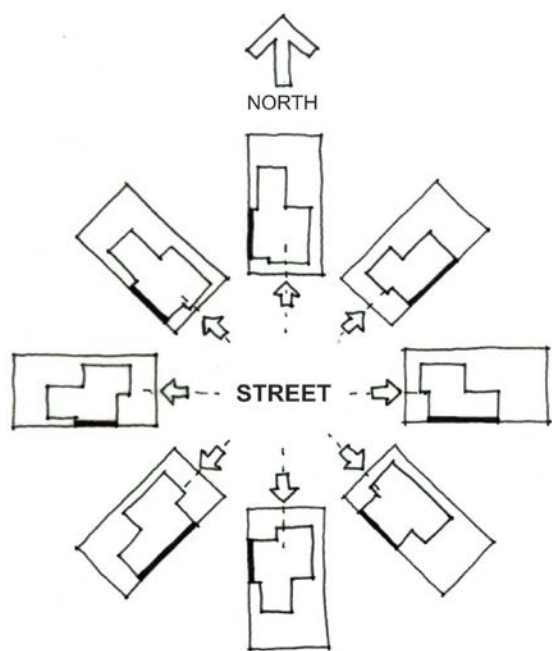
A. Objectives

- a) To create an attractive and cohesive streetscape and facilitate the efficient use of land.
- b) To ensure appropriate amenity between dwellings.

B. Controls

- 1) Built to boundary development must demonstrate that the use of a 'zero lot line setback' will not adversely affect the privacy and solar access of an adjoining property.
- 2) The location of built to boundary development is to be determined with regard to dwelling design, allotment orientation, adjoining dwellings, landscape features, topography and the built to boundary location principles at Figure E1.27.
- 3) An easement for maintenance of the built to boundary wall (and any services along the side of the dwelling) is to be provided on the adjoining property. A Section 88B instrument supporting the maintenance easement is to be provided.
- 4) The setbacks for built to boundary development must comply with the requirements of Section 4.4.

Figure E1.30 – General form of Built to Boundary dwellings



Secondary Dwellings

This Section includes controls for Secondary Dwellings. The term 'secondary dwelling' is defined in LEP 2010. Generally, secondary dwelling development in Caddens should be in the form of "Studio Lofts", the general form and style of which is illustrated in Figure E1.31.

A. Objectives

- a) To encourage a diversity of affordable housing product.
- b) To provide housing and accommodation options for a range of family types and age groups.
- c) To promote innovative housing solutions compatible with the surrounding residential environment.
- d) To provide passive surveillance of rear lanes and shared driveways.

B. Controls

- 1) The maximum floor space for a secondary dwelling is 60m².
- 2) The secondary dwelling is to be located above the garage, carport or similar structure of the principal dwelling or be part of a corner lot development.
- 3) A secondary dwelling must incorporate design and construction features, finishes, materials and colours similar to, or complementary with, the principal dwelling.
- 4) An application for a secondary dwelling development is to have regard to its suitability in the context of neighbouring dwellings and local character.
- 5) Windows and private open spaces must not overlook the private space of any adjacent dwelling. Windows to common boundaries must either have obscured glazing, be screened or have a minimum sill height of 1.7m above floor level.
- 6) Design is to generally maximise solar access to internal living areas and minimise overshadowing of outdoor areas of the principal and adjacent dwellings.
- 7) Private open space in the form of a balcony should preferably be provided in addition to the private open space area requirements for the principal dwelling.
- 8) Access to the secondary dwelling is to be separate from the principal dwelling and is to front a public street, lane or shared private accessway, either at or above ground level.
- 9) Strata title subdivision into a separate allotment will be permissible only where the following are provided:
 - a) The secondary dwelling is located substantially above the other dwelling; or
 - b) The secondary dwelling has a floor area that does not exceed 60m² and is located above the garage, carport or similar structure of the principal dwelling; and
 - c) private open space of 8m² with a minimum dimension of 2m; and
 - d) separate access; and
 - e) one separate on-site car parking space; and
 - f) separate services for mail delivery and waste collection, and an on-site garbage storage area which is not visible from a public street; and
 - g) separate connections and metering for utilities (electricity, water, gas, telecommunications etc).

Figure E1.28 – General form of “Secondary Dwellings”



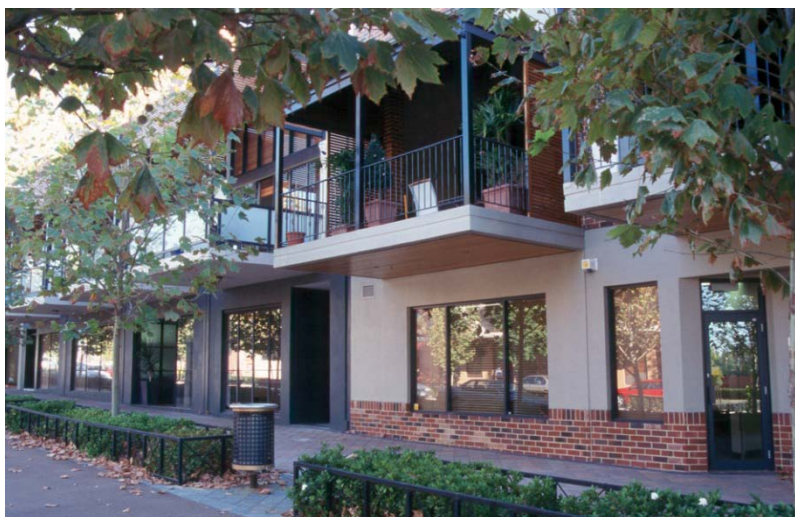
Mixed Use and Medium Density Housing

The general forms and styles of mixed use and medium density dwellings are illustrated in Figure E1.29.

A. Objectives

- a) To establish a high quality medium density housing environment where all dwellings have a good level of amenity.
- b) To encourage a variety and choice of housing forms.
- c) To encourage active street frontages and activate streets.

Figure E1.29 – General form of Mixed Use Development



B. Controls

- 1) Mixed use and residential flat buildings are to be located generally within the Precinct Centre (B2 zone) and the Residential R3 Zone and are to:
 - a) have a minimum lot size of 1,000m² and a minimum street frontage of 30m; and
 - b) not adversely impact upon the existing or future amenity of any adjoining land upon which residential development is permitted with respect to overshadowing, privacy or

visual impact.

- 2) All mixed use and residential flat development is to be consistent with:
- a) the guidelines and principles outlined in SEPP 65 – Residential Flat Development; and
 - b) the primary controls set out at Table E1.4.

Table E1.4: Controls for Residential Flat Buildings

Element	Control
Principal private open space (min)	Ground level - 20m ² per apartment (min width 2.5m) Upper level - 10m ² per apartment (min width 2.m)
Storeys (max)	4
Front setback (min)	3m
Secondary street setback (min)	3m
Side and rear setbacks (min)	In accordance with the Residential Flat Design Code or on merit
Adaptable dwellings (min)	10%

- 3) To provide visual interests and reduce building bulk, facades are to be articulated (via balconies, blade walls, stepped facades and the like).
- 4) Balconies can intrude into the front setback by a maximum of 2m.
- 5) Buildings with a length greater than 15m are to incorporate multiple entries and circulation cores.
- 6) The design of residential flat buildings and mixed use development must meet the visual and acoustic amenity requirements set out in Part 5.1 of this section.
- 7) Buildings with mixed use development, that is a mix of residential and commercial and/or retail, must incorporate the following:
- a) retail/commercial uses at ground floor level;
 - b) floor to ceiling heights of at least 3.5m at ground level;
 - c) separate commercial and residential pedestrian access;
 - d) separate provision for commercial and residential waste.

Development on Sloping Land

A. Objectives

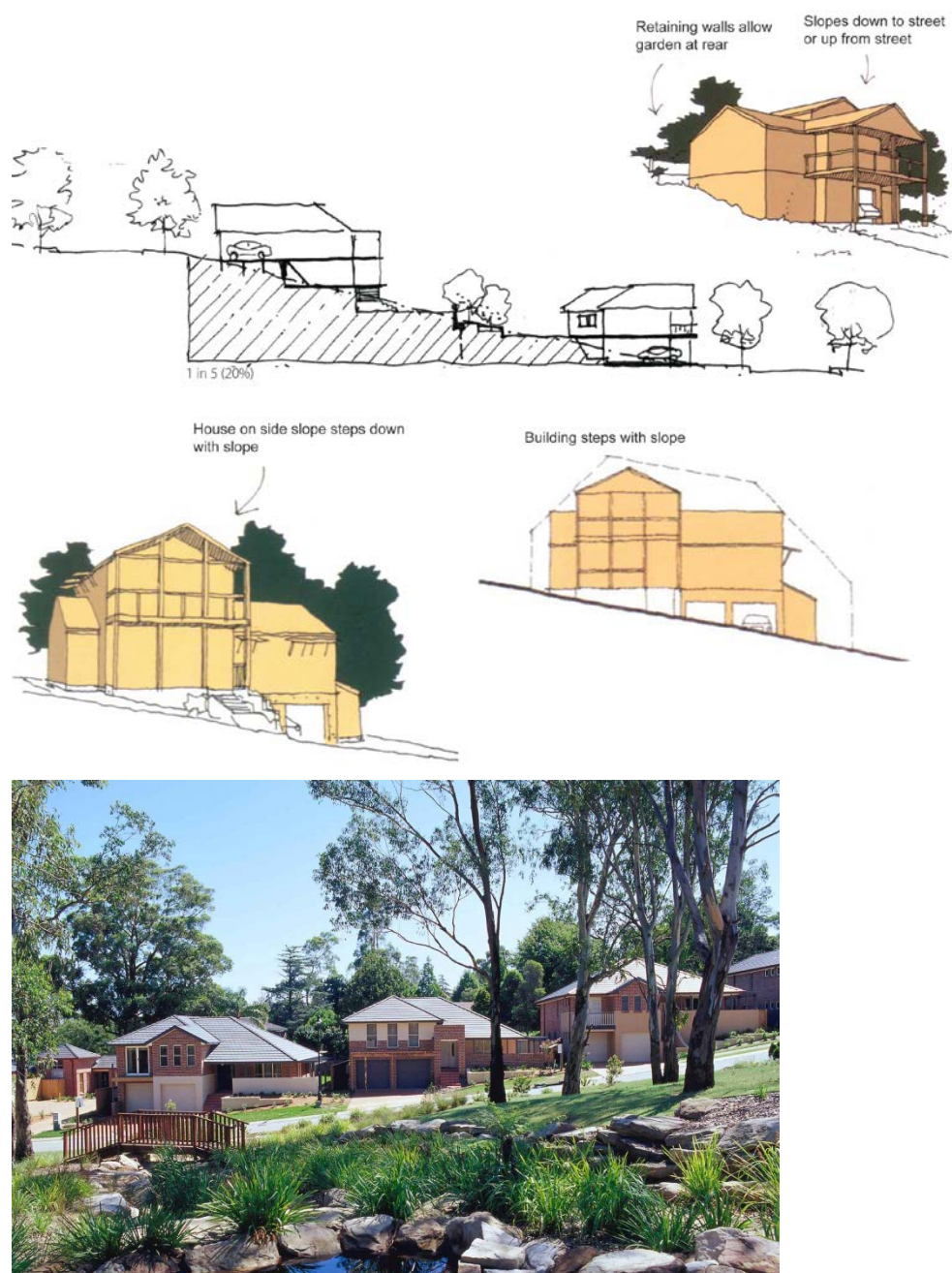
- a) To ensure that development responds to topographical constraints.
- b) To provide opportunities for views to and from hilltop areas.
- c) To minimise the bulk and scale of dwellings on steep slopes.

d) To minimise the potential impact of on-site salinity.

B. Controls

- 1) Development on sloping land should generally be accordance with Figures E1.30.
- 2) The subdivision layout on cross slopes should incorporate wider/larger lots on steeper land.
- 3) Preliminary building pads on lots with a front to back slope should provide a minimum floor level split of 1m or as appropriate to facilitate split level house designs.
- 4) The side boundary retaining walls for development on cross slopes should retain a cut no higher than 1m.
- 5) All retaining walls forward of the garage line must be constructed with masonry materials and finished to complement the house design.
- 6) On front to back slopes, rear boundary retaining walls should be a maximum 1.8m in height and retain a maximum cut of 1.5m in height, provided that there is a minimum 1m wide terrace between the face of the wall and the fence line.
- 7) With the exception of corner lots, where slopes exceed 10%, retaining walls may exceed 1m in height for a side boundary and 1.8m in height for a rear boundary, if comprehensive site benching is undertaken at the time of subdivision to produce a whole of site solution.
- 8) Lots with a side cross slope exceeding 5%, must respond to the slope of the land with either split level, drop edge beam, or bearer and joist design (or a combination of these).
- 9) Where front to back slopes are steep (i.e. approximately greater than 9%) house designs must respond to the topography of the land with either split level, dropped edge beam, or timber frame floor (bearer and joist) design - or a combination of these.
- 10) Garden retaining walls within lots are not to exceed 0.9m in height. Any remaining slope is to be graded out.
- 11) On lots sloping downhill to the street, dwellings shall be designed and constructed to achieve driveway and access gradients of no greater than 20% slope. This may be achieved by cutting the garage space into the slope within the building footprint. Dwellings should be terraced down the slope with activating features such as decks or balconies facing the street.
- 12) On lots sloping downhill from the street, dwellings shall be designed and constructed to optimise filling to achieve driveway and access gradients of no greater than 20% slope. This may be achieved by elevating garage and entry features within the building footprint. Dwellings should be terraced down the slope with features such as decks and balconies located towards the rear of the dwelling.
- 13) On lots sloping downhill from the street, the privacy of adjoining dwellings down slope should be preserved by providing screening vegetation between observable platforms and adjoining private open space areas, or integrating features such as timber screens to decks, or partially opaque windows where privacy is essential and screening vegetation is impractical.

Figure E1.30 – Housing on Sloping Land



1.4.6 Private Open Space

Private open space (POS) means the portion of private land which serves as an extension of the dwelling to provide space for relaxation, dining, entertainment and recreation. It may include an 'alfresco room'.

Principal private open space (PPOS) means the portion of private open space which is conveniently accessible from a living zone of the dwelling, and which receives the required amount of solar access.

A. Objectives

- a) To provide a high level of residential amenity with the opportunity for outdoor recreation and relaxation within the property.
- b) To enhance the spatial quality, outlook and useability of private open space.
- c) To enhance and contribute to streetscape amenity.
- d) To optimise solar access to the living areas and private open spaces of dwellings.
- e) To ensure that dwellings are designed to minimise overshadowing of adjacent properties and to protect minimum standard sunlight access to private outdoor living space of adjacent dwellings.

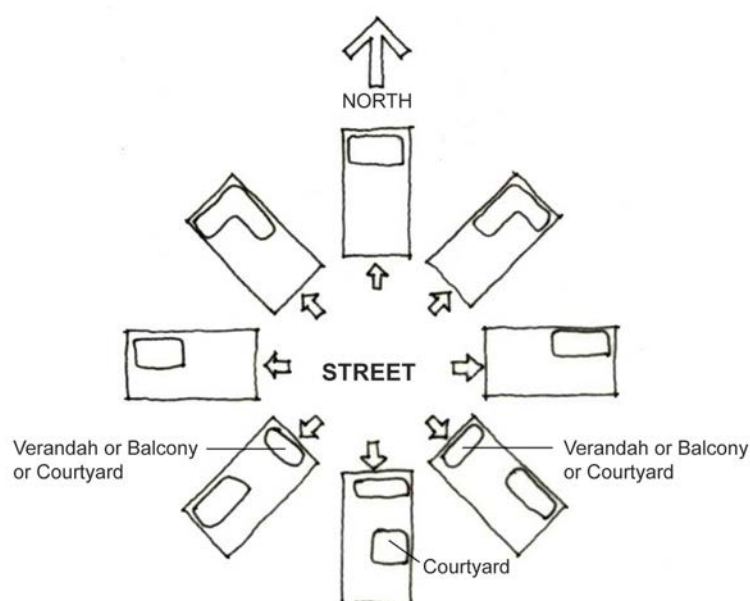
B. Controls

- 1) All dwellings are to be provided with an area of Private Open Space (POS) and Principal Private Open Space (PPOS) consistent with Table E1.5.
- 2) The location of PPOS is to have regard to dwelling design, allotment orientation, adjoining dwellings, landscape features, topography and the preferred locations of PPOS illustrated at Figure E1.31.
- 3) 50% of the area of the required PPOS (of both the proposed development and the adjoining properties) must receive at least 3 hours of sunlight between 9am and 3pm at the winter solstice (21 June).
- 4) The PPOS must interface directly with the main living area of a dwelling or alfresco room. Where the PPOS is a semi-private patio, balcony or roof top area, it must be provided with a fence or landscaped screen at least 1m in height, and be directly accessible from a living area.
- 5) For a secondary dwelling that incorporates one dwelling substantially above the other, the ground level dwelling is to comply with the controls in Table E1.5. The upper level dwelling is to have a balcony accessed directly off the living space with a minimum area of 8m² plus a minimum 5m² at the ground level with space for clothes drying.

Table 5 – Private Open Space

Lot width	Private Open Space	Principal Private Open Space
7.5 -10 m	Min. 20% of lot area Min. dimension – 2 m	Min. 16m ² in area Min. dimension - 3m
>10-15m	Min. 20% of lot area Min. dimension – 2 m	24m ² in area Min. dimension - 4m
>15-17.5m	Min. 20% of lot area Min. dimension – 2.5m	30m ² in area Min. dimension - 4m
> 17.5m	Min. 20% of lot area Min dimension – 3m	40m ² in area Min dimension – 4m

Figure E1.31 – Principal Private Open Space Principles



1.4.7 Site Cover and Landscaped Areas

A. Objectives

- To provide solar access to both residents and neighbours.
- To provide permeability and limit stormwater runoff.
- To enhance the landscape character of the area.

B. Controls

- Dwellings on lots 450m² and greater are to comply with the following maximum site cover:
 - 50% of total lot area; with

- b) 60% for single storey dwellings.
- 2) Site coverage on lots smaller than 450m² will be treated on merit but is to be no greater than 70% and is to demonstrate compliance with the private open space and solar access requirements of this Plan.
- 3) Site coverage for residential flat buildings will be treated on merit but is generally to be no greater than 70%
- 4) Landscaped area is any part of a site, at ground level, that is permeable and consists of features such as soft landscaping, turf and planted areas. The following minimum landscaped area must be provided:
 - a) lots less than 450m² – 35% of the lot area ;
 - b) lots 450m² and greater - 35% of the lot area.
- 5) A Landscape Plan is to be submitted with all DAs for residential development. The DA plans must indicate the extent of hard and soft landscaped areas, tree sizes and locations and other requirements for landscaped plans contained in the other relevant sections of this DCP.
- 6) The front setback area of a dwelling is to be landscaped with the treatment to clearly delineate between the private and public domain. The front setback is to incorporate two trees. The rear garden must include at least one tree that will achieve a height of 6m at maturity. These may include existing trees that are to be retained.
- 7) To prevent accumulation of water and concentration of salts, subsoil drains are to be installed around the perimeter of residences and connected to the stormwater system.
- 8) Low water demand drought resistant vegetation is to be used in common landscaped areas, including native salt tolerant trees.
- 9) Garbage bin storage and clothes drying areas are to be concealed from view and shown on site plans.

1.4.8 Fencing

A. Objectives

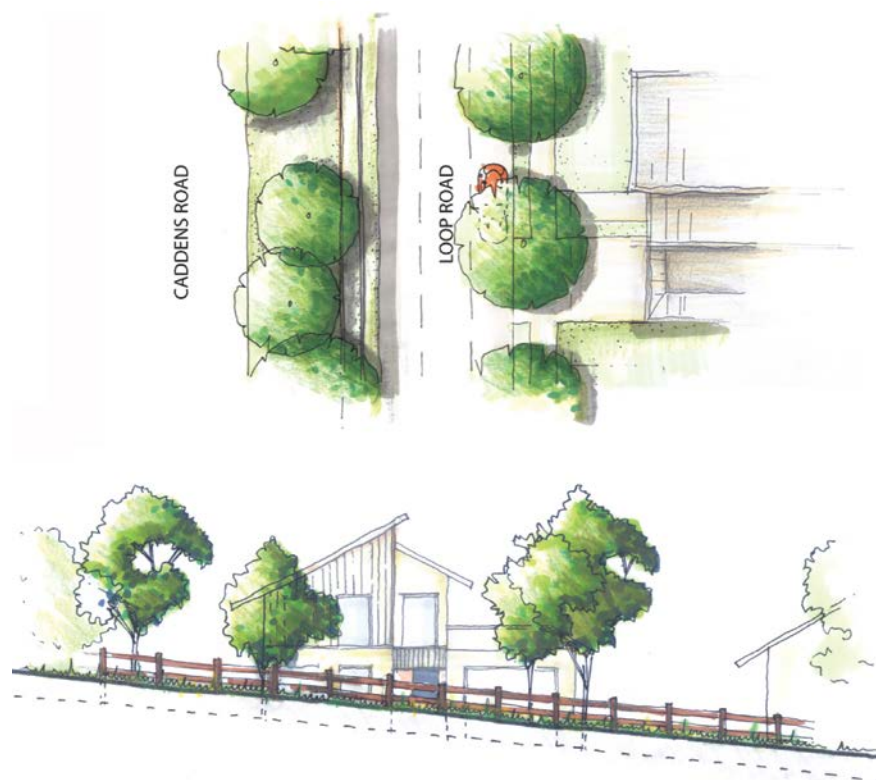
- a) To provide privacy to both residents and neighbours.
- b) To ensure boundary fencing is of a high quality and does not detract from the streetscape.
- c) To ensure that fencing is consistent with the street and the design and style of the dwelling.
- d) To permit casual surveillance of open space.
- e) To reinforce, through landscape treatments, the rural character of development along Caddens Road.

B. Controls

- 1) Except for dwellings contiguous (sharing a common border) with Caddens Road, front and side fencing must be constructed with masonry piers that complement the streetscape and dwelling finish. Infill panels are to consist of open slats, palisades or pickets.
- 2) The fencing on the secondary street of a lot with a frontage 17.5m or greater must be set back 0.9m from the secondary street boundary and must incorporate landscaped vegetation between the fence and the boundary.

- 3) Metal sheet style fencing is not permitted anywhere.
- 4) Where a dwelling is located adjacent to open space, boundary fencing is to be of a high quality material and finish and the design is to permit casual surveillance of the open space. Fencing adjoining rear access ways is to permit casual surveillance.
- 5) Dwellings contiguous (sharing a common border) with Caddens Road, as shown in Figure E1.3, are to be fenced with a rural style solid timber post and rail fence generally in accordance with Figure E1.32.

Figure E1.32 – Landscaping along Caddens Road



1.4.9 Garages and Access

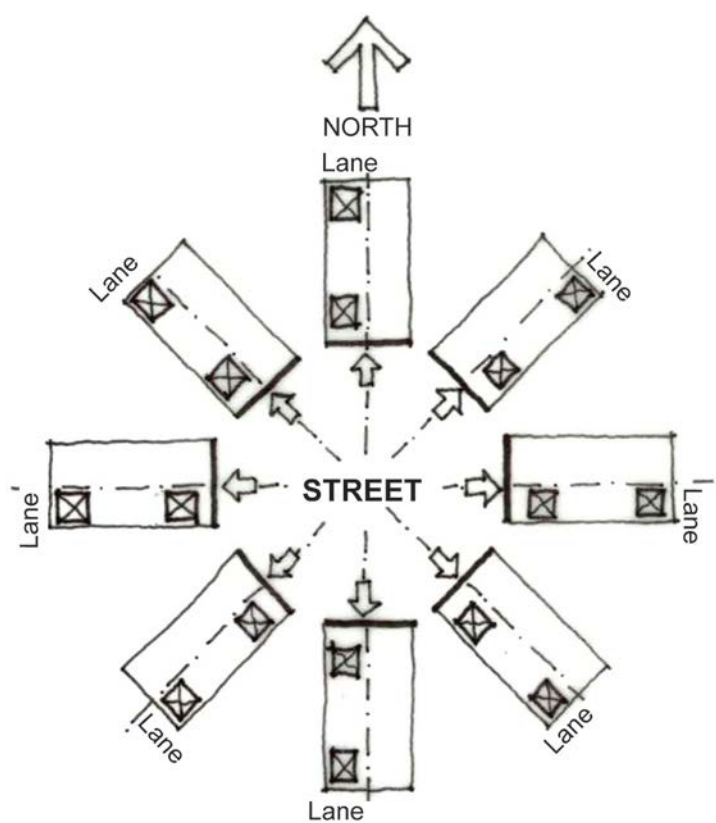
A. Objectives

- a) To provide sufficient, safe and secure parking for residents and visitors.
- b) To reduce the visual impact of garages, carports and parking areas on the streetscape and improve dwelling presentation.
- c) To ensure that garages do not dominate the frontage of the house.
- d) To encourage the use of secondary dwelling over garages to facilitate surveillance, and opportunities to work from home and for residential accommodation.

B. Controls

- 1) Garages are to be sited as per the preferred siting diagram at Figure E1.33.
- 2) Where a carport or garage entry forms part of the front façade of a dwelling, it is to be set back a minimum of 5.5m from the front boundary and at least 1m behind the building façade.
- 3) Front loaded double garages are only permissible on lots with a frontage width equal to or greater than 12.5m.
- 4) The maximum dimension for garage doors is to be less than 50% of the front façade, 6m in width and 2.4m in height. Triple fronted garages are not permitted.
- 5) Carports and garages are to be treated as an important element of the dwelling facade and are to be integrated with, and complementary to, the dwelling design in terms of design and materials. Garage doors are to be visually recessed through use of materials, colours, and overhangs.
- 6) The maximum number of dwellings to be serviced from a shared driveway is 10.
- 7) Garages are to comply with AS 2890.1 Off Street parking, including:
 - a) minimum internal width between main walls of 3m for a single garage;
 - b) minimum internal width between main walls of 5.5m for a double garage.
- 8) Driveway access to garages on steep land must comply with AS 2890.1. Stencil-crete on driveways is not permitted.
- 9) Driveways are to be no wider than 4.5m at the front boundary and should be a minimum of 1.5m from street trees.
- 10) Where possible, the garage for a corner lot should be accessed from the secondary street, unless the secondary street is Caddens Road.
- 11) At grade car parking for residential and commercial buildings must be appropriately screened from view.

Figure E1.33 – Garage Location Principles



1.5 Environmental and Residential Amenity

1.5.1 Visual Privacy and Acoustic Amenity

A. Objectives

- a) To minimise the impacts of development on the visual privacy and acoustic amenity of adjoining properties, the streetscape and public domain.
- b) To protect the acoustic amenity of dwellings on collector roads.

B. Controls

- 1) Direct overlooking of main habitable areas and private open spaces of adjacent dwellings should be minimised through building layout, window and balcony location and design, and the use of screening devices, including landscaping.
- 2) Habitable room windows with a direct sightline to the habitable room windows in an adjacent dwelling within 3m are to:
 - a) be obscured by fencing, screens or appropriate landscaping; or
 - b) be offset from the edge of one window to the edge of the other by a distance sufficient to limit views into the adjacent window; or
 - c) have sill height of 1.7m above floor level; or
 - d) have fixed opaque glazing in any part of the window below 1.7m above floor level.
- 3) The design of dwellings must minimise the opportunity for sound transmission through the building structure, with particular attention given to protecting bedrooms and living areas.
- 4) In attached dwellings, bedrooms of one dwelling are not to share walls with living spaces or garages of adjoining dwellings, unless it is demonstrated that the shared walls and floors meet the noise transmission and insulation requirements of the Building Code of Australia.
- 5) The internal layout of residential buildings, window openings, the location and design of outdoor living areas and elements (i.e. courtyards, balconies and retaining walls), and building plant equipment should be designed to minimise noise impact and transmission and enhance visual amenity.
- 6) Residential subdivision and development must be designed to comply with the NSW Road Noise Policy criteria and must be consistent with the following controls:
 - a) To mitigate the effects of noise on existing residential development to the west of the Caddens Road By-pass, appropriately designed acoustic treatments such as low height walls or other methods/treatments which will achieve NSW Road Noise Policy criteria are to be provided where required along Collector Road 1.

Note: Mounding along the linear park is not considered appropriate due to resulting safety and practicality issues.

- b) To mitigate the impacts of traffic noise from the Caddens Road By-pass 1 on new development a combination of the following measures is to be used;
 - i) dwelling setbacks;
 - ii) internal dwelling layouts designed to minimise noise in living and sleeping areas;
 - iii) fencing constructed with a suitably solid mass, and
 - iv) locating courtyards and principal private open space areas away from the noise

source in order to comply with the NSW Road Noise Policy.

- 7) For new residential development along the Caddens Road By-pass, where external traffic noise levels cannot be met at the nearest facade of the dwelling to the noise source, dwellings must be designed to meet the following internal noise levels:

- a) In a naturally ventilated - windows open condition (i.e., windows open up to 5% of the floor area, or attenuated natural ventilation open to 5% of the floor area), or mechanically ventilated windows closed condition:

Sleeping areas	LAeq 1 hour, Day	40dB
	LAeq 1 hour, Night	35dB
Living areas	LAeq 1 hour, Day	45dB
	LAeq 1 hour, Night	40dB

- b) Where a naturally ventilated - windows open condition cannot be achieved, it will be necessary to incorporate mechanical ventilation compliant with AS1668 and the Building Code of Australia. The noise levels above shall be met with mechanical ventilation or air-conditioning systems not operating. The following LAeq noise levels shall not be exceeded when doors and windows are shut and mechanical ventilation or air conditioning is operating:

Sleeping areas	LAeq 1 hour, Day	43dB
	LAeq 1 hour, Night	38dB
Living areas	LAeq 1 hour, Day	46dB
	LAeq 1 hour, Night	43dB

Note: These levels correspond to the combined measured level of external sources and the ventilation system operating normally

Note: LAeq 1 hour noise levels shall be determined by taking as the second highest LAeq 1 hour over the day and night period for each day and arithmetically averaging the results over a week for each period (5 or 7 day week, whichever is highest)

1.5.2 Safety and Surveillance

A. Objectives

- To promote public safety and security through passive surveillance of public spaces.
- To ensure that, through casual surveillance, the siting and design of buildings and spaces reduces the opportunity for crime.
- To ensure that development encourages people to use streets, parks, cycleways, footpaths, the hilltop avenue and other public places without fear of personal risk.

B. Controls

- Dwellings should be designed to overlook streets, lanes and other public or communal areas to provide casual surveillance.
- For passive surveillance, at least one living area of a dwelling should overlook the street or public open space. In the case of corner lots habitable windows are also be oriented to overlook the secondary street or any cycleway or pedestrian path.
- Opportunities for casual surveillance from dwellings/studios are to be incorporated into the design of shared driveways and, where rear access is proposed, from laneways.
- Developments, including open space, are to avoid creating areas for concealment and

blank walls facing the street.

- 5) Pedestrian and communal areas are to have sufficient lighting to ensure a high level of safety and must be designed to minimise opportunities for concealment.
- 6) DAs for subdivision, public open space and community facilities are to incorporate the principles of Crime Prevention Through Environmental Design (CPTED).

1.5.3 Sustainable Building Design

A. Objectives

- a) To increase the sense of space within homes and provide well proportioned rooms.
- b) To promote the penetration of daylight deep into rooms.
- c) To ensure that developments are environmentally sustainable in terms of energy and water use.
- d) To maximise opportunities for natural ventilation in residential development.

B. Controls

- 1) Minimum dwelling floor to ceiling heights shall be as follows:
 - a) ground floor habitable rooms of two storey single dwellings - 2.65m;
 - b) upper floors and all non-habitable rooms – 2.4m;
 - c) single storey dwellings – 2.65m;
 - d) attics – 1.5m wall height at edge of room with a 30 degree minimum ceiling slope;
 - e) all floors of multi-unit dwellings – 2.4m.
- 2) The building envelope, depth, location of doors and windows, and internal layout of all residential development is to facilitate cross -ventilation.
- 3) The main living area of all dwellings is to open directly onto the private open space via either glazed sliding bi-fold or French doors, or similar, to allow for adequate solar access.
- 4) North and west facing windows are to be provided with appropriate external shading.
- 5) All dwellings are to incorporate an outdoor clothes line/drying area in a sunny location not visible from a street or public place.

1.6 The Precinct Centre

A. Objectives

- a) To ensure that urban design and landscaping encourages pedestrian amenity and community activity.
- b) To provide an attractive, accessible and lively community focal and gathering point for Caddens and the wider Werrington Enterprise, Living and Learning Precinct and its residents, employees and students.
- c) To provide active uses at street level which facilitate safety and passive surveillance.
- d) To provide a mix of retail, residential and commercial land uses.
- e) To create a retail centre based on traditional 'main street; shopping.
- f) To encourage housing forms which provide opportunities for home-based employment and businesses.
- g) To provide a rectilinear road pattern that connects the Precinct Centre to the UWS campus and surrounding residential conservation and employment areas.
- h) To provide opportunities for the location of UWS and TAFE-related facilities such as student services, libraries, meeting rooms, etc.

B. Controls

- 1) The Indicative Concept Plan shown at Figure E1.34 provides an example of how the Precinct Centre might be developed to satisfy controls in this section.
- 2) Detailed design and planning of the Precinct Centre shall be subject to the formulation of a concept plan as part of a staged development.
- 3) The road layout should generally be rectilinear in pattern with clear and legible street and pedestrian connections to UWS, TAFE and surrounding residential, employment and open space areas.
- 4) Development applications for the Precinct Centre are to demonstrate how potential conflicts between uses and activities are to be managed and minimised.
- 5) Streets are to be activated and, where possible and appropriate, developments are to incorporate active uses at street level.
- 6) Public art is to be incorporated at key focal points to promote community identity.
- 7) Buildings are generally to be built to the street edge and provide a continuous street frontage and continuous non-glazed awning along the street edge.
- 8) The total maximum gross floor area for retail and commercial development in the Precinct Centre is 12,500m².
- 9) The above floor area may only be exceeded if the building and uses relate to activities directly associated with UWS and/or TAFE.
- 10) No one shop (retail premises) is to be greater than 4,000m².
- 11) The maximum height of any development in the Precinct Centre is 4 storeys.
- 12) Where appropriate the design of medium density housing is to incorporate opportunities for home based employment.
- 13) Any supermarket should be located on the southern/wider section of the Precinct Centre and supporting commercial services should be located in the northern section.

The Precinct Centre is intended to be an attractive community focal point incorporating mixed use (i.e. shops, commercial and housing).



Figure E1.34 – Precinct Centre Concept Plan

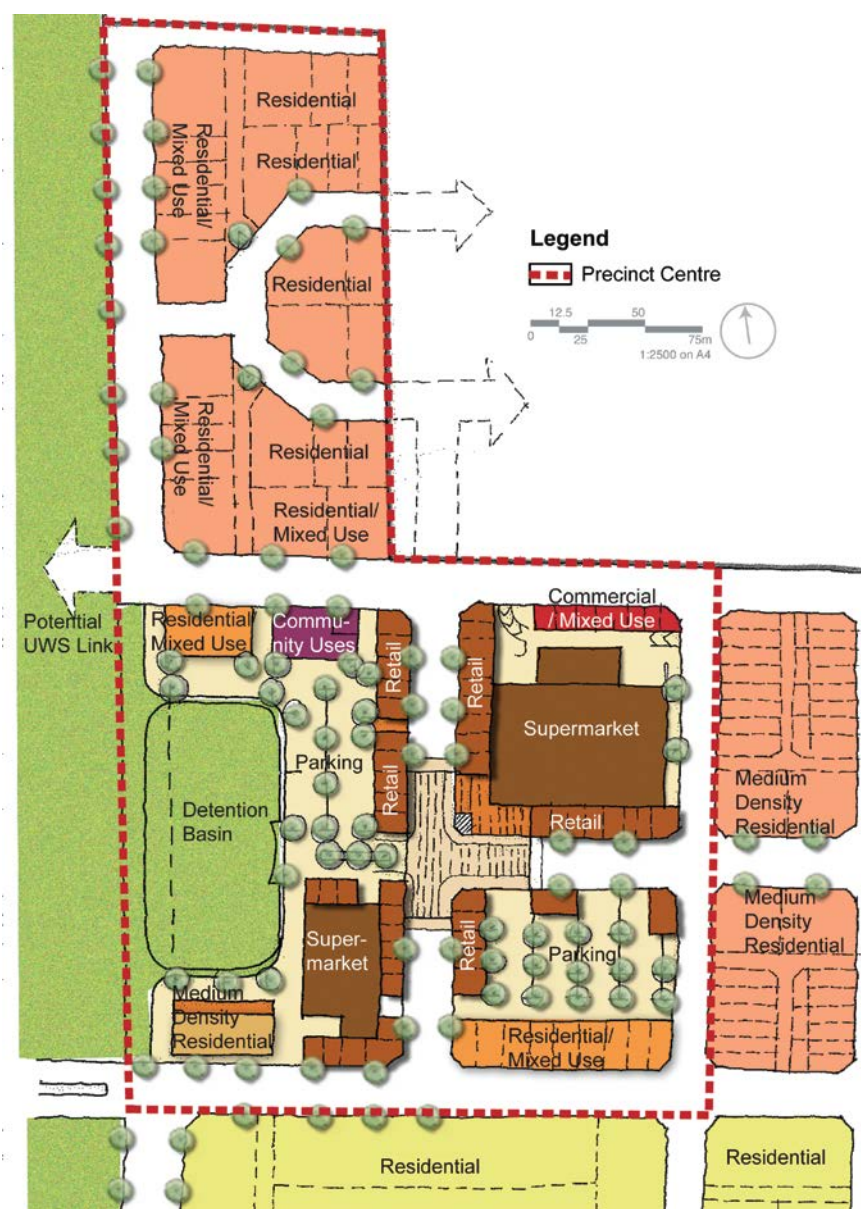


Table of Contents

E2 CLAREMONT MEADOWS STAGE 2	2
2.1. INTRODUCTION	2
2.1.1. AREA COVERED BY THIS SECTION	2
2.1.2. AIMS OF THIS SECTION	6
2.2. RESIDENTIAL DEVELOPMENT	7
2.2.1. MULTI DWELLING HOUSING	7
2.2.2. TRADITIONAL RESIDENTIAL	7
2.2.3. LARGE LOT RESIDENTIAL ADJACENT TO THE M4 MOTORWAY	9
2.2.4. GATEWAY SITE ON THE GREAT WESTERN HIGHWAY	9
2.2.5. HOME-BASED BUSINESS ACTIVITIES	9
2.3. AREAS OF ECOLOGICAL SENSITIVITY	10
2.3.1. REMNANT BUSHLAND	10
2.3.2. WATERCOURSE AND RIPARIAN CORRIDORS	11
2.3.3. WATER CYCLE	11
2.3.4. SALINITY	13
2.3.5. CONTAMINATED LAND	14
2.3.6. BUSHFIRE HAZARD	15
2.3.7. AIR QUALITY	17
2.4. COMMUNITY SERVICES AND RECREATION	17
2.4.1. NEIGHBOURHOOD PARKS	17
2.5. RECOGNITION OF SURROUNDING LAND USES	17
2.5.1. MAJOR ROADS (WERRINGTON ARTERIAL, GREAT WESTERN HIGHWAY AND THE M4 MOTORWAY)	17
2.5.2. INTEGRATION WITH CLAREMONT MEADOWS STAGE 1	27
2.5.3. SOUTH CREEK CORRIDOR	27
2.5.4. FORMER GIPPS STREET LANDFILL SITE	28
2.6. PUBLIC DOMAIN	28
2.6.1. MANAGEMENT OF THE PUBLIC DOMAIN	28
2.6.2. LANDSCAPE DESIGN	29
2.7. INFRASTRUCTURE	29
2.7.1. STREETS AND ACCESS	29
2.7.2. SEWER AND WATER	31
2.7.3. ENERGY SUPPLIES	31
2.7.4. TELECOMMUNICATIONS	31

E2 Claremont Meadows Stage 2

2.1. Introduction

2.1.1. Area Covered by this Section

The Claremont Meadows Stage 2 (Figure E2.1) area covers land bounded by:

- The M4 Motorway to the south;
- The South Creek Corridor to the east;
- The Caddens Release Area and Orchard Hills to the west; and
- The existing Claremont Meadows Estate (Figure E2.1) and the Great Western Highway to the north.

Claremont Meadows Stage 2 is separated into two distinct precincts and a Gateway Site:

a) Eastern Precinct (Figure E2.2), which covers land bounded by:

- The M4 Motorway to the south;
- The South Creek Corridor to the east;
- Gipps Street to the west; and
- The former Council tip site to the north.

b) South Western Precinct (Figure E2.3), which covers land bounded by:

- The M4 Motorway to the south;
- Gipps Street to the east;
- Existing rural residential development to the west; and
- Caddens Road (and the existing Claremont Meadows estate) to the north.

c) The Gateway Site (Figure E2.1) is located on the corner of Gipps Street and the Great Western Highway.

Figure E2.1 – Land to which this Section applies

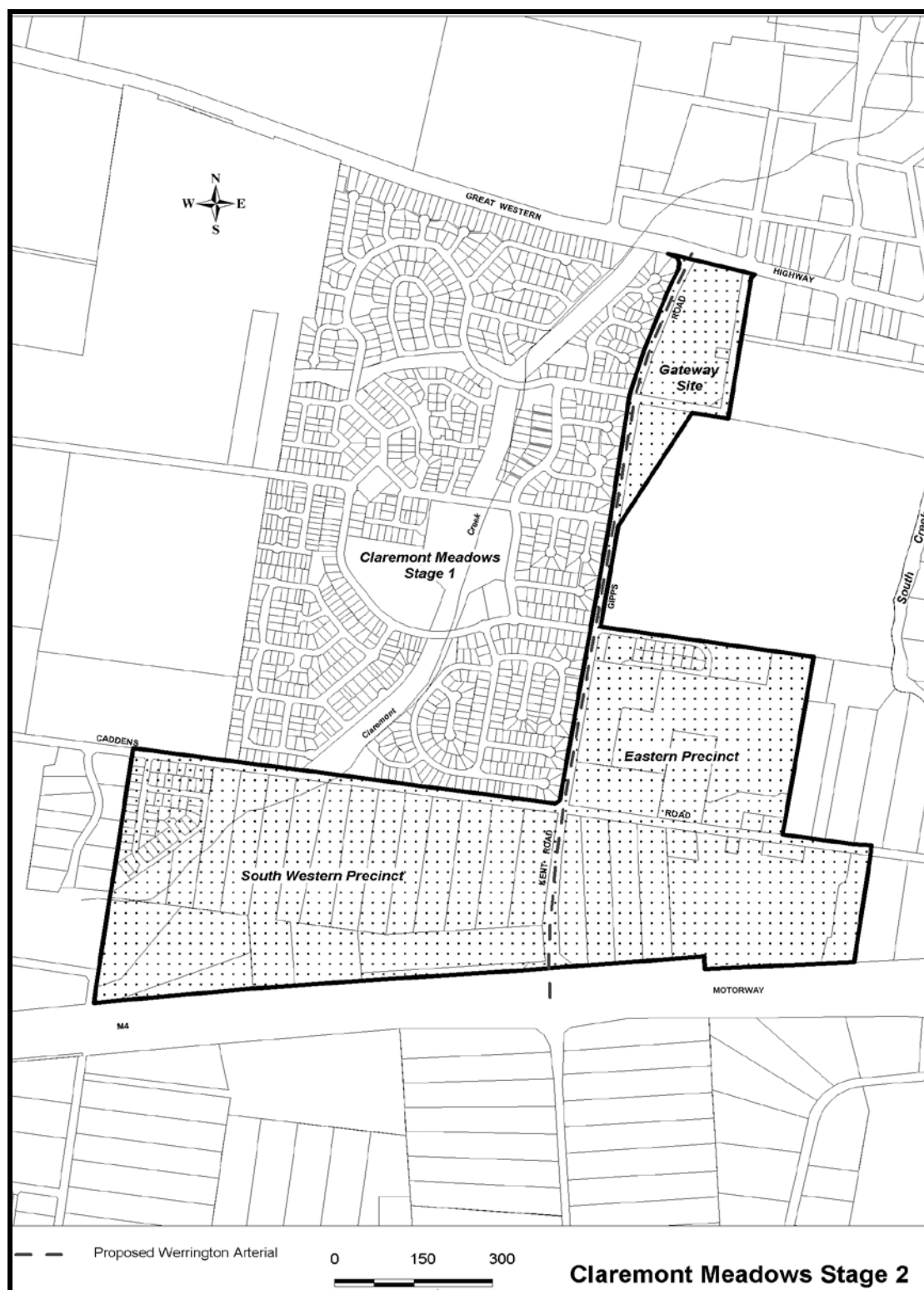


Figure E2.2 – Eastern Precinct

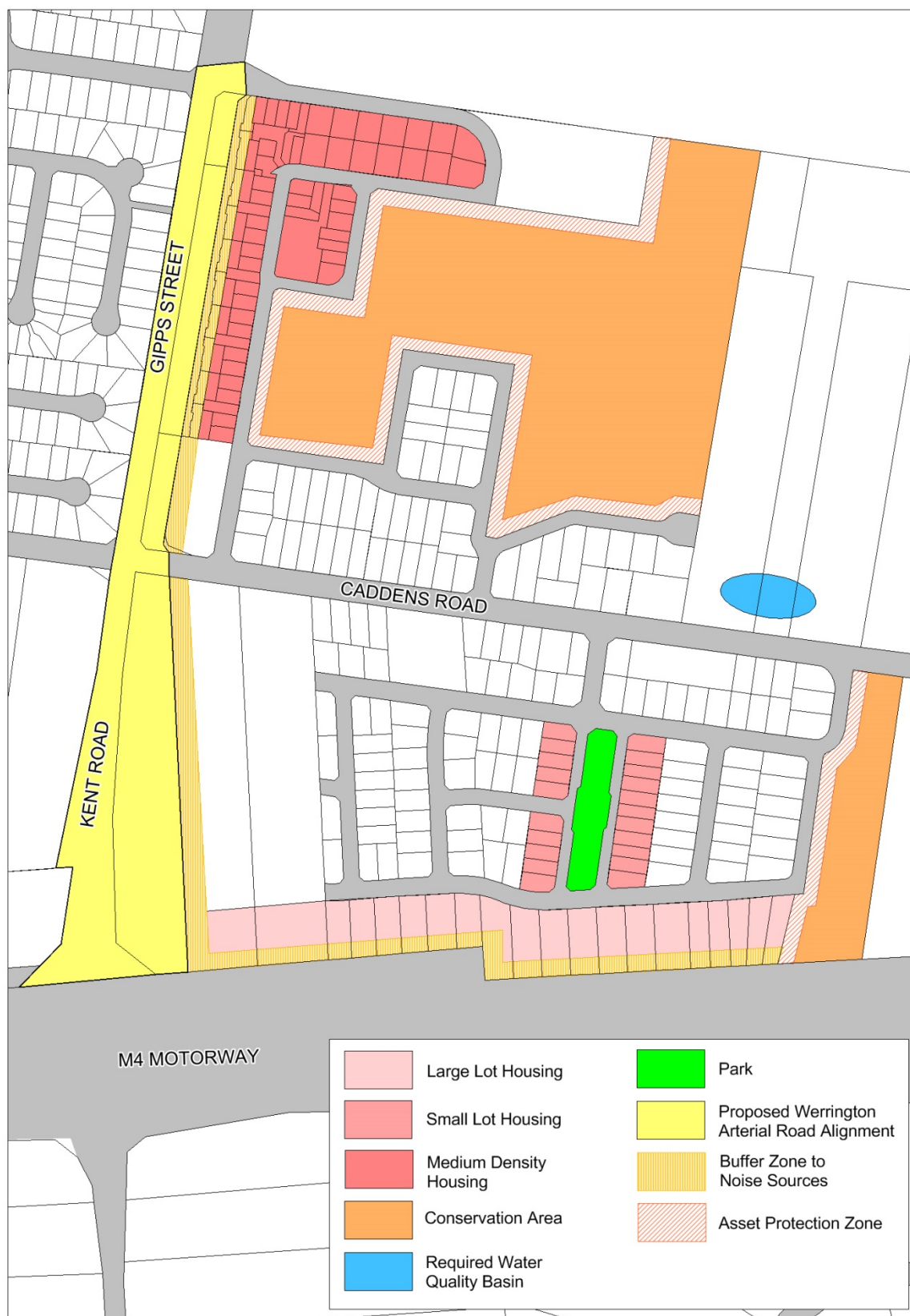
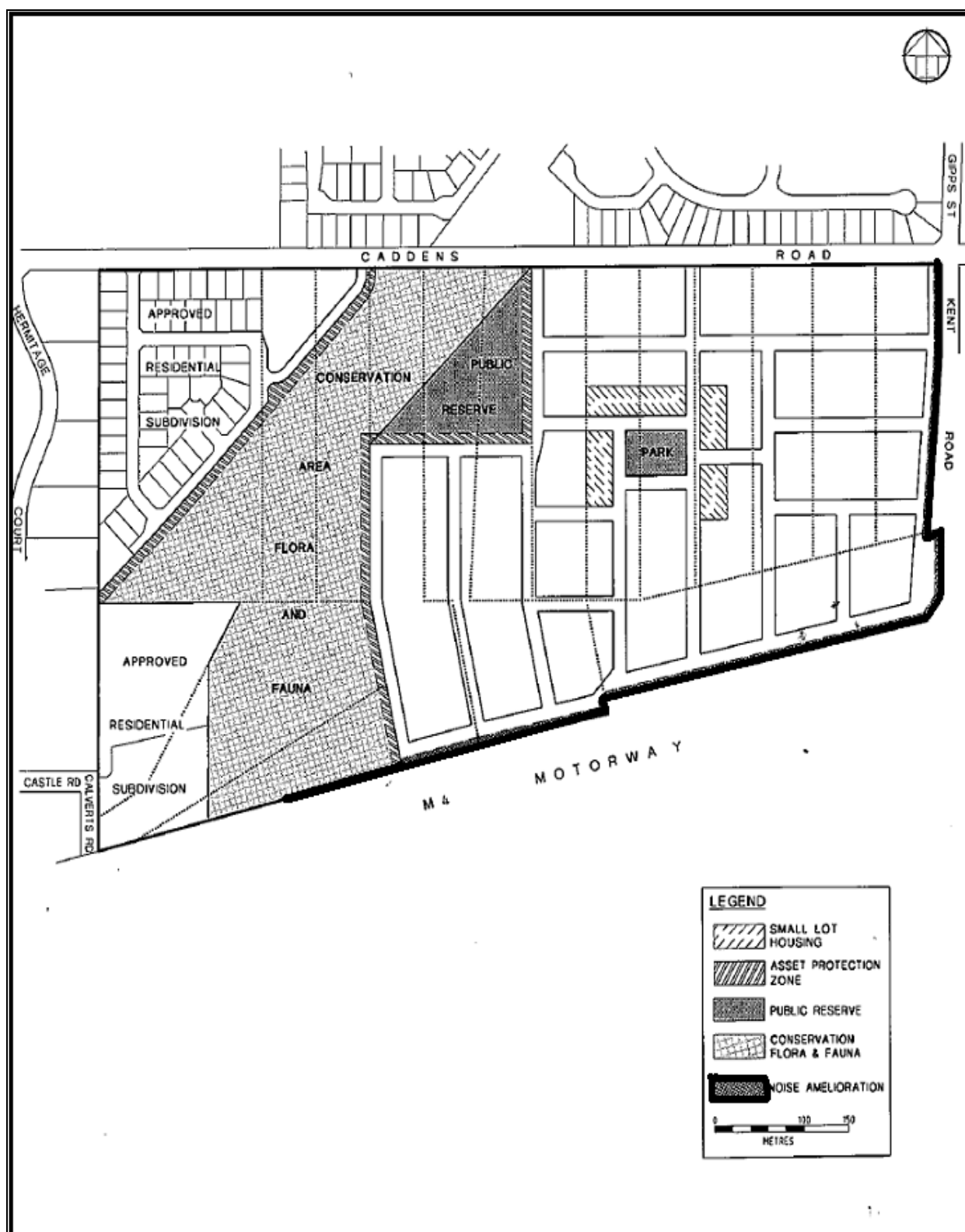


Figure E2.3 – South Western Precinct



2.1.2 Aims of this Section

- a) To provide specific guidelines for the preparation and assessment of applications for development in Claremont Meadows Stage 2.
- b) To provide opportunity for a range of housing sizes and types to provide housing choice for future residents;
- c) To ensure buildings have a high level of environmental performance consistent with Penrith City Council requirements, particularly with regard to energy efficiency, water management and the control of noise;
- d) To retain, protect and rehabilitate areas of high conservation value;
- e) To promote development that achieves best practice in ecologically sustainable development and enhances the natural values of the site;
- f) To require the consideration of social and economic aspects of sustainable development;
- g) To provide a public domain with landscaping which contribute to biodiversity by using local native species wherever possible and which has high aesthetic quality and is appropriate for its use and location;
- h) To mitigate the potential impact of the M4 Motorway, Gipps Street and the Great Western Highway on the proposed development;
- i) To mitigate the visual impact of the development on the M4 Motorway;
- j) To ensure that the Gateway site on the corner of the Great Western Highway and the current alignment of Gipps Street is developed appropriately as an entrance to Claremont Meadows;
- k) To ensure that surrounding land uses are given due attention in the planning and design of Stage 2, including the:
 - i) South Creek corridor;
 - ii) Former tip site;
 - iii) Adjacent rural residential development;
 - iv) Claremont Creek and the riparian corridor; and
 - v) Conservation areas.

2.2 Residential Development

2.2.1 Multi Dwelling Housing

This section applies to the eastern precinct only on land zoned R3 Medium Density Residential under the LEP. This is to:

- a) Take advantage of the proximity to Sunflower Drive, which provides access to the existing estate and associated facilities;
- b) Recognise that the form of the developable area has been designed to conserve remnant Cumberland Plain Woodland in the east of the precinct; and
- c) Recognise that the impact of the proposed Werrington Arterial and the limited dimensions of the developable area requires additional attention to design to obtain a high residential amenity.

A. Objectives

- a) To ensure that the areas set aside for multi dwelling housing achieve a substantially higher density than 'traditional' residential areas;
- b) To ensure that multi dwelling housing is well designed, energy efficient and takes account of surrounding land uses; and
- c) To protect the amenity and quality of life of future residents.

B. Controls – Eastern Precinct

- 1) Development applications must demonstrate that:
 - a) Multi dwelling housing incorporates the principles of water sensitive urban design, including measures to conserve rainwater and measures to minimise the need for potable water;
 - b) Development has been designed to maximize the number of dwellings with north facing living areas and private open space areas;
 - c) Communal outdoor recreation areas are north facing; and
 - d) Development in the north of the precinct recognises the former tip site as a future recreational resource (both passive and active).

2.2.2 Traditional Residential

This section applies to land zoned R2 Low Density Residential under the LEP which is **not** within 50m of the road reserve for the M4 Motorway.

A. Objectives

- a) To ensure that a variety of lot sizes are provided.
- b) To ensure that traditional lots provide opportunity for well designed, energy efficient housing.
- c) To ensure that dual occupancy development is designed cognisant of the amenity of adjacent blocks.

B. Controls

General

- 1) These provisions will encourage a variety of lot sizes, while still protecting residential amenity.
- 2) Smaller lots around an area of public open space must:
 - a) Clearly indicate both the proposed public reserve and the area to be developed with smaller lot sizes; and
 - b) Locate and size the public reserve so that it provides utility and amenity to the entire precinct. Public reserves shall have a minimum site area of 2,500m².
- 3) Development applications submitted for smaller lot housing around an area of public open space must be integrated (subdivision and building development considered and lodged concurrently);
- 4) Residential Development adjacent to Gipps Street/Kent Road shall provide articulation to building facades and varying setbacks;
- 5) All other residential development applications will be assessed against the standards specified in the Residential Development section of this Plan.

Eastern Precinct

- 1) Residential development in this precinct must be set out in accordance with the indicative layout illustrated in Figure E2.2.
 - a) Medium density housing (e.g. multi dwelling housing) in the land zoned R3 Medium Density Residential on Gipps St, near the intersection with Sunflower Drive;
 - b) 550m² – 800 m² – provided in the bulk of the precinct;
 - c) Small lot housing (250m² – 400m²) – provided immediately around the proposed neighbourhood park; and
 - d) Large lot housing (over 1,000m²) – provided adjacent to the M4 Motorway.
- 2) The controls specified in the Residential Development section of this Plan apply.

South Western Precinct

- 1) Residential development in this precinct must be set out in accordance with the indicative layout illustrated in Figure E2.3.
- 2) In general:
 - a) Small lot housing around the central park with lot sizes ranging from 250m² – 400m² (to be submitted as integrated housing for development application purposes);
 - b) Conventional lots with a minimum area of 550m² and minimum width of 15m; and
 - c) Large lot residential to the south west off Castle Road; and
 - d) The controls specified in the Residential Development section of this Plan apply for all other requirements.

2.2.3 Large Lot Residential Adjacent to the M4 Motorway

This section applies to land zoned R2 Low Density Residential under the LEP and which is **within 50m** of the M4 Motorway road reserve.

A. Objectives

- a) To ensure that there remains a visual buffer between residential development associated with Claremont Meadows Stage 2 and the M4 Motorway; and
- b) To provide opportunity for a vegetated link between bushland on Claremont Creek and bushland in the South Creek corridor. Such a link will have both biodiversity and habitat value.

B. Controls

- 1) Development Applications will be assessed against the standards specified in the Residential Development section of this Plan.
- 2) That vegetated buffer of 20m depth shall:
 - a) be maintained along the boundary of lots parallel to the M4 Motorway and be vegetated with regard to the requirements for an Asset Protection Zone;
 - b) be planted with species appropriate to the area given the presence of Cumberland Plain Woodland; and
 - c) remain free of all structures including garages, carports, swimming pools, tennis courts, gazebos and the like.
- 3) Lot layouts within the 20m buffer area shall allow for a sufficient building envelope clear. It is expected that to achieve this lots will generally require a minimum depth of 50m; and
- 4) Building setbacks from the street in this area may be reduced to recognise the impact that the buffer may have on private open space to the rear of the dwelling, which can accommodate recreational structures.

2.2.4 Gateway Site on the Great Western Highway

This section applies to the site on the south eastern corner of the Great Western Highway and Gipps Street; and as indicated in Figure E2.1.

A. Objective

- a) To ensure that this high profile site that will act as a gateway to Claremont Meadows is appropriately developed.

B. Controls

- 1) Development on this site shall recognise its visual prominence to the Great Western Highway and role as an entry point to Claremont Meadows.
- 2) Residential development shall be in accordance with the Residential Development section of this Plan.

2.2.5 Home-Based Business Activities

A. Objective

- a) To maximise opportunities for residents to establish and operate small-scale business activities from home.

B. Controls

- 1) Development Applications for dwellings with home based businesses shall give consideration to the site planning, housing designs and other physical measures which support home-based business activities, consideration may include:
 - a) Dedicated rooms for business activities;
 - b) Separate entrances for the residences and for business rooms;
 - c) Flexible parking and vehicle access for visitors and/or residents – subject to the scale of activity;
 - d) Buildings designed according to traditional residential scale and appearance when viewed from the street; and
 - e) ‘Smart wiring’ of homes to enable consumers to access multi telecommunications facilities (broadband capacity internet, e-commerce, cable TV, lighting, audio, security), and
 - f) Building orientation.

2.3 Areas of Ecological Sensitivity

Claremont Meadows Stage 2 has two major areas of ecological sensitivity:

- 1) The remnant Cumberland Plain Woodland (endangered ecological community) in the eastern precinct, immediately adjacent to the South Creek corridor, and
- 2) The bushland surrounding Claremont Creek in the south western precinct. Claremont Creek and the riparian corridor in the south western precinct is also considered to be an area of ecological sensitivity.

It is important that development in the vicinity of these areas recognises and minimises the potential for impact on their biodiversity values and ecological integrity. Respect for the ecological sensitivity of these areas is a key part of an overall sustainable development outcome for Claremont Meadows Stage 2.

2.3.1 Remnant Bushland

A. Objectives

- a) To conserve wildlife habitat and indigenous plant species;
- b) To ensure that development adjacent to areas of existing vegetation identified for preservation is designed to minimise impact;
- c) To ensure appropriate buffer zone edge treatment between development and any adjacent Cumberland Plain Woodland and associated large land snails; and
- d) To ensure that the local community is provided with information about the value of the bushland, to help foster a spirit of caring for it.

B. Controls

- 1) The proposal shall demonstrate compliance with the Vegetation Management Plan for the specific precinct area;
- 2) A Biodiversity Management Plan, which includes an interpretation strategy shall be prepared for the proposed development. Examples of items which could be included in a Biodiversity Management Plan and Interpretation Strategy include (and not limited to):

- a) Signage;
 - b) Fencing
 - c) Walking tracks;
 - d) Street layout; and
 - e) Street names.
- 3) Development Applications shall demonstrate that the Biodiversity Management Plan and its principles have been addressed.

2.3.2 Watercourse and Riparian Corridors

Claremont Meadows Stage 2 is part of the Claremont Creek and South Creek Catchments, so it is important to ensure that these catchments and also the riparian corridor of Claremont Creek traversing the south western precinct are protected, enhanced and managed adequately.

A. Objectives

- a) To protect and rehabilitate Claremont Creek as a natural system;
- b) To protect and rehabilitate a minimum 20m wide riparian corridor along either side of Claremont Creek;
- c) To provide a vegetated link between bushland on Claremont Creek and bushland in the South Creek corridor;
- d) To ensure that the local community is provided with information about the value of Claremont Creek, South Creek and riparian corridors to help foster a need to care for these environmentally sensitive areas.

B. Controls

- 1) Development Applications shall:
- a) Ensure that remnant native vegetation within the riparian corridor is protected and rehabilitated with local provenance species at a density that would occur naturally;
 - b) Ensure there is to be no development within the riparian corridor unless works include:
 - i) The rehabilitation of aquatic and riparian vegetation and habitat;
 - ii) Demolition and removal of existing structures or works;
 - iii) Crossings for roads, pedestrian pathways, easement services, sewer, utility installation;
 - iv) Stormwater outlets.

Such development should be designed and constructed so that ecological connectivity values are not compromised. All other development is to be excluded from within the riparian corridor.

- c) Treat all stormwater discharge outside of the riparian corridor before it enters the watercourse.

2.3.3 Water Cycle

The eastern precinct of Claremont Meadows Stage 2 drains directly to South Creek, while the south western precinct drains to Claremont Creek. The water quality in both of these

watercourses is significantly impacted by urban runoff, making it vital that development in Stage 2 employ best practice in water sensitive urban design. Minimising the pollution contained in urban runoff from this site will have a beneficial impact on the water quality in South Creek and ultimately the Hawkesbury River.

A. Objectives

- a) To achieve an integrated approach to water cycle management on the site;
- b) To control the quantity and quality of runoff from the site to maximise the improvements to downstream receiving waters and minimise the impact on the downstream catchment;
- c) To investigate innovative approaches to water supply to minimise water wastage and reduce the demand for potable water; and
- d) To maximise the ecological and visual benefits gained from Claremont Creek.

B. Controls

- 1) Development Applications shall:
 - a) Demonstrate that future development will not generate undesirable environmental impacts on receiving waters, in terms of quantity and quality. Modelling shall be done on a catchment basis, rather than lot by lot;
 - b) Identify and incorporate best management practices to control runoff quantity and quality;
 - c) Include a stormwater management plan which conforms with the EPA guidelines – ‘Managing Urban Stormwater’, applicable development guidelines from Penrith City Council and the Storm Water Management Plans for South Creek;
 - d) Adopt an integrated approach to the management of wastewater, consistent with:
 - i) Water-sensitive urban design practices, including options for the reuse of stormwater;
 - ii) Capacity of site soils to absorb run-off;
 - iii) Existing levels of soil salinity and minimises extent and frequency of perched watertable; and
 - iv) Local climate and likely rates of evaporation from open ponds.
 - e) Demonstrate drainage solutions that shall embody appropriate catchment management principles;
 - f) Include a surface drainage design which:
 - i) Includes any runoff detention and water quality control ponds, swales and channels;
 - ii) Minimises land-take;
 - iii) Minimises potential breeding areas for mosquitoes;
 - iv) Limits disturbance to the ground whenever possible;
 - v) Utilises landscaped, open space and passive recreational features which contributes to the local amenity;
 - vi) Ensures engineered structures are integrated with the configuration and character of the wider development and its public domain; and

- vii) In the case of Claremont Creek, takes the form of a planted banks with water on the surface and incorporates ecological habitats in a minimum 20m wide riparian corridor (measured from top of bank) either side of the creek;
- g) Take account of the influence of the former tip site, including the possibility of subsurface water movement;
- h) Shall evaluate opportunities for the integration of water supply and re-use of stormwater, grey water and treated effluent:
 - i) In consultation with authorities such as Sydney Water, NSW Office of Environment and Heritage, NSW Ministry of Health and Penrith City Council;
 - ii) Through investigation of opportunities for the reuse on-site of grey water and treated effluent and recycled stormwater, noting:
 - Rainfall patterns and the assimilative capacity of the site's soils;
 - Landscaped areas available for irrigation with treated effluent; and
 - Impacts of irrigation volumes and salt loads on existing salinity.
- 2) A water quality plan and maintenance plan shall be submitted to Council with applications for subdivision. This plan shall cover all elements of the proposed drainage system that will ultimately be transferred to Council, and shall outline the maintenance schedule to ensure that the system operates at the required standard.

2.3.4 Salinity

Urban development in salinity prone environments must consider the potential for salt damage. Salt is soluble in water and if water gains access to buildings and infrastructure salt can be carried with it.

The entire Penrith LGA landform is subject to areas of either:

- a) Known salinity;
- b) High salinity potential;
- c) Moderate potential; and / or
- d) Associated with drainage lines identified as having high salinity potential.

A. Objectives

- a) To ensure that saline soils, groundwater levels and salinity processes are identified, prior to finalisation of development form; and
- b) To ensure that appropriate measures are taken to protect buildings, infrastructure and the natural environment from deterioration associated with salt attack.

B. Controls

- 1) Development Applications for subdivision shall include a preliminary site investigation, which identifies areas of potential salinity;
- 2) A Salinity Site Investigation must include:
 - a) Initial site walkover, observations and field tests as well as a desktop review;
 - b) Site specific soil and groundwater investigations;

- c) Clear presentation and Interpretation of all results in terms of the impact of the site salinity processes on the proposed development and, the impact of the development on salinity processes on the site and in the catchment; and
 - d) Management options to be undertaken by the developer to minimise these onsite and offsite, present and future impacts.
- 3) A remedial action plan must be submitted with any Development Application on land where there is an identified salinity hazard. The plan must contain the following information:
- a) Remedial objectives;
 - b) Details of the process and standards by which the land will be remediate;
 - c) Specific measures that will be undertaken to reduce the risk of salinity to property and structures, vegetation and the environment; and
 - d) A statement that the implementation of these specific measures will ensure minimal salinity risk to man-made and natural environment in the short and long term on and off the site.
- 4) In identified salinity hazard areas the following measures must be used for house slabs and other concrete work:
- a) A layer of sand at least 50mm deep under the slab must be provided;
 - b) A damp proof membrane (rather than vapour proof membrane) must be laid under the slab;
 - c) Normal Class 32 Mpa (N32) concrete or sulphate resisting Type SR cement with a water cement ratio of 0.5 must be used;
 - d) The minimum cover to reinforcement must be 30mm from a membrane in contact with the ground;
 - e) The minimum cover to reinforcement must be 20mm from an internal surface;
 - f) The minimum cover to reinforcement must be 50mm for strip footings and beams irrespective of whether a damp proof membrane is used; and
 - g) Admixtures for waterproofing and/or corrosion prevention may be used.
- 5) In identified salinity hazard areas the following measures must be used for brickwork:
- a) The damp proof course must be correctly placed to prevent moisture movement;
 - b) The use of 'exposure clast bricks';
 - c) Manufacturer's recommendations regarding suitability for use in saline environments for all bricks and concrete blocks should be followed; and
 - d) Appropriate mortar must be used and waterproofing may be added below the damp proof course
- 6) Salt and drought tolerant plant species must be used in the landscaping within the site and should be identified in any landscape plans for the site. This also includes appropriate hard landscaping materials and practice.

2.3.5 Contaminated Land

Although the majority of Claremont Meadows Stage 2 has been used for rural purposes, there is still the possibility that some areas may be contaminated.

A. Objectives

- a) To ensure that contaminated land is identified, prior to finalisation of development form; and
- b) To ensure that a remedial action plan is prepared for any identified areas of contamination.

B. Controls

- 1) Development Applications for subdivision shall include an assessment of possible contamination prepared by a suitably qualified person, which covers the following:
 - a) Likelihood of contamination over the subject area, based on previous land uses; and
 - b) Assessment of the nature and extent of contamination in areas identified as likely to be contaminated.
- 2) For those areas not yet tested, Development Applications shall include a contamination assessment and remedial action plan. This plan shall conform to the provisions of State Environmental Planning Policy No. 55 – Contaminated Land;
- 3) All identified works in the remedial action plan shall be completed and certified prior to linen plan release;
- 4) Sydney Water has advised that infrastructure cannot be permitted in contaminated ground or in ground that may become contaminated by groundwater or contaminant vapour migration because of possible:
 - a) Breaches of Work, Health and Safety (WHS) obligations to employees during maintenance excavation;
 - b) Breaches of WHS obligations to employees during maintenance of sewers containing contaminated flows;
 - c) Contaminant degradation of sewage treatment processes, particularly biological processes;
 - d) Contamination of the drinking water supply from contaminants diffusing through plastic water mains;
 - e) Contamination of the drinking water supply from contaminants being sucked through rubber ring pipe joints during passage of low pressure transients;
 - f) Contaminant corrosion or weakening of concrete infrastructure; and
 - g) Contaminant corrosion of rubber rings in pipe joints effecting joint tightness.

Hence, Sydney Water requests that arrangements to investigate, remediate and audit infrastructure trench soils both within and beyond development boundaries and to prevent recontamination be put in place before and during infrastructure installation.

2.3.6 Bushfire Hazard

The remnant bushland in both the eastern and south western precinct presents a bushfire hazard, as does the M4 Motorway road reserve. Applicants should refer to relevant documents when preparing Development Applications. These include the NSW Rural Fire Service requirements in '*Planning for Bushfire Protection*', which is available on the NSW Rural Fire Service website (www.bushfire.nsw.gov.au) and Australian Standard 3959.

A. Objective

- a) To ensure that dwellings are adequately protected from bushfire risk.

B. Controls

General

- 1) Development applications shall clearly identify all bush fire prone land and shall include a bushfire hazard assessment, prepared by a suitably experienced person;
- 2) Development applications shall demonstrate how bushfire hazard assessment has been taken into account. This may include design features, asset protection zones or similar. This may include hazard presented by adjacent undeveloped lots;
- 3) Development applications are to be consistent with '*Planning for Bushfire Protection*' and Australian Standard 3959.
- 4) Some level of bushfire protection must also be provided between residential dwellings and the M4 Motorway reserve. This may be incorporated into the vegetated buffer required to attenuate noise and visual impact, however this buffer will need to be managed to minimise bushfire risk. Details shall be provided in the subdivision application;
- 5) Roads are to separate all vegetated areas from houses;
- 6) Main through and perimeter roads to have minimum 8m sealed surface plus footpaths, other roads to have minimum 7m wide sealed surface;
- 7) Roads beside significant vegetation to be set within a 20m wide road reserve, located within the APZ; and
- 8) Fire hydrants to be provided to normal urban standards, without on-site supplementary water storage;

Eastern Precinct

- 1) An Asset Protection Zone shall be provided between remnant bushland and residential buildings. There may also be a need to consider hazard presented by adjacent undeveloped lots;
- 2) The Asset Protection Zone is likely to be required to be 35m wide. There may, however, be circumstances in which the Rural Fire Service will reduce the Asset Protection Zone to 30 m. All applications for subdivision will be referred to the Rural Fire Service and applicants should NOT assume that 30m will be sufficient. Reference should be made to '*Planning for Bushfire Protection*' when proposing an appropriate width for the Asset Protection Zone; and
- 3) This Asset Protection Zone may include:
 - a) A 10m fuel reduced zone within the Conservation Area;
 - b) The width of the adjacent road reserve; and
 - c) Front setbacks to dwellings.

South Western precinct

- 1) The creation of Outer Protection Areas 10m in width within the Flora and Fauna Conservation Areas;
- 2) Inner Protection Areas 25m in width be maintained within residential areas adjoining the Flora and Fauna Conservation areas; and

- 3) The creation of Inner Protection Areas 20m in width beside the M4 Motorway and the Public Recreation area adjoining the Flora and Fauna Conservation area and be maintained by property owners.

2.3.7 Air Quality

A. Objectives

- a) To ensure that development does not have an undue adverse effect on air quality; and
- b) To identify appropriate compensatory measures that can be taken to help improve air quality in general.

B. Controls

- 1) Use of solid fuel heaters is prohibited; and
- 2) The area of land available for soft landscaping should be maximised.

2.4 Community Services and Recreation

2.4.1 Neighbourhood Parks

A. Objective

- a) To ensure that parks are adequately sized, located and equipped to meet the needs of the anticipated population of the precinct.

B. Controls

- 1) Each precinct shall provide an appropriate area for a neighbourhood park; and
- 2) Neighbourhood parks shall have the following features:
 - a) A minimum area 2,500 m²;
 - b) A central location, accessible to the majority of the population of the precinct;
 - c) Surrounded by a logical road pattern, which provides a safe direct and legible route to the neighbourhood park from the majority of the precinct;
 - d) Suitable embellishment with play equipment, seating, lighting, landscaping and pathways (details to be provided at Development Application stage); and
 - e) Shall not be used as detention basins.

2.5 Recognition of Surrounding Land Uses

2.5.1 Major Roads (Werrington Arterial, Great Western Highway and the M4 Motorway)

A number of major roads surround and intersect Claremont Meadows Stage 2:

- 1) The M4 Motorway provides a boundary to the south;
- 2) The new alignment for the Werrington Arterial along Gipps St separates the eastern and south western precincts; and
- 3) The Great Western Highway adjoins the gateway site in the north.

These roads will have an acoustic, visual and social impact on development and must be considered in all stages of planning.

A. Objectives

- a) To ensure that the negative impact of the roads surrounding and transecting Claremont Meadows Stage 2 is minimised;
- b) To ensure that planning for Claremont Meadows Stage 2 takes account of the noise and vibration associated with major roads; and
- c) To ensure that the visual impact of Claremont Meadows Stage 2 from major roads, particularly the M4 Motorway, is minimised.

B. Controls

General

- 1) Residential development affected by traffic noise associated with Gipps Street, Kent Road, the M4 Motorway, or the Great Western Highway must comply with the NSW Road Noise Policy (Environment Protection Authority);
- 2) A visual and acoustic protection zone shall be provided along the southern boundary of Stage 2, where it adjoins the M4 Motorway. This protection is to be provided within a 20m landscaped buffer zone and may also include a road, and designed such that it does not have a visual impact on the M4 motorway;
- 3) Noise solutions must have appropriate regard for urban design outcomes. It is considered that a combination of distance, landscaped mounding/barriers, and dwelling treatment should be used to obtain appropriate protection from noise. Noise solutions shall be developed in conjunction with the Roads and Maritime Services (RMS). The treatment of all interfaces with major roads shall be negotiated with the RMS as part of the preparation of applications for development;
- 4) Development applications for residential development within 50m of Gipps Street, Kent Road, the M4 Motorway or the Great Western Highway shall include a noise study to demonstrate that the relevant noise standards can be complied with;
- 5) Development applications, which include creation of lots adjoining the M4 Motorway, shall include details of the visual and acoustic barrier, which is to be provided along the southern boundary of Claremont Meadows Stage 2, where it adjoins the M4 Motorway. This barrier is to be provided within a landscaped buffer zone and screened from view from the M4 Motorway (Refer Figure E2.8a and E2.8b), Noise barriers shall demonstrate visual consistency with other noise barriers along the M4 within the Penrith LGA;
- 6) Development applications for residential development along Gipps Street and Kent Road shall include details of the noise treatment along Gipps Street and Kent Road (Refer Figures E2.5 and E2.6). Noise attenuation measures shall integrate with and compliment the design and siting of the proposed residential development; and
- 7) Full details of construction type, colours, materials and maintenance requirements for any acoustic barriers must be submitted to Council.

Eastern Precinct

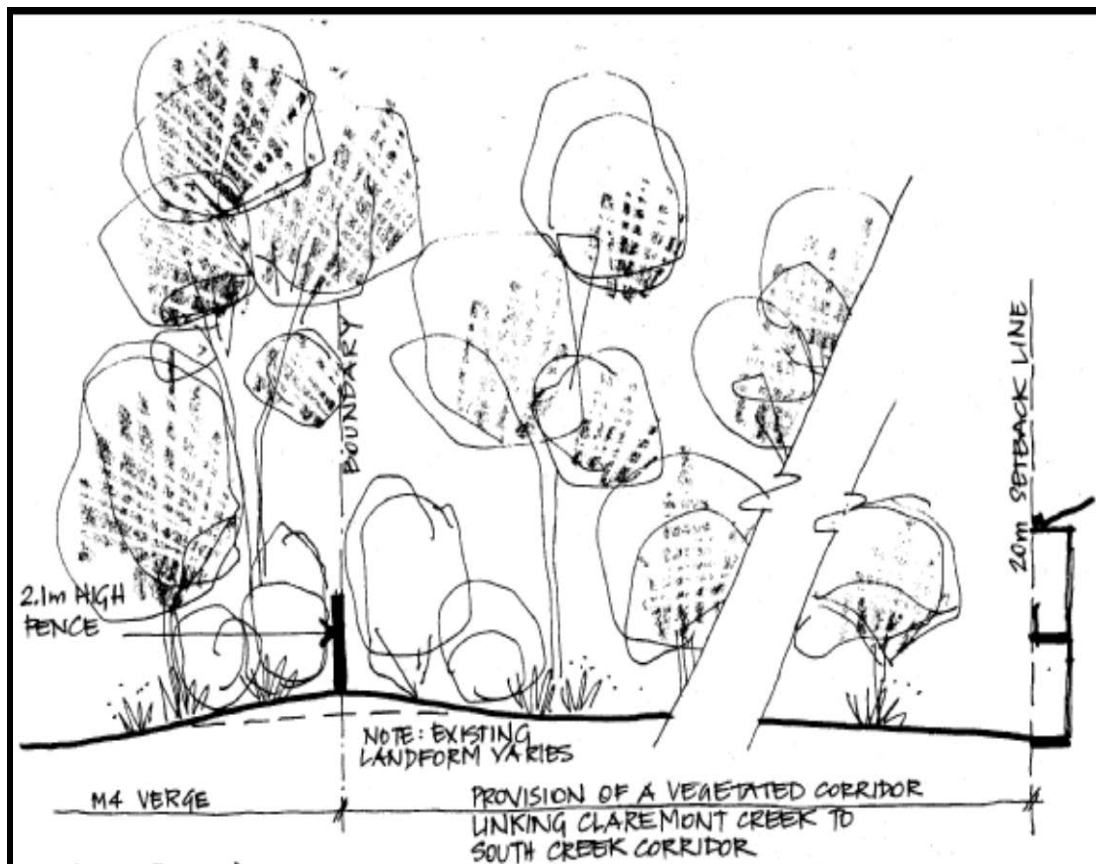
- 1) A 15m wide buffer is required along Gipps St (north of Caddens Road) and as detailed in Figure E2.5. The purpose of this buffer is to minimise the impact of the adjacent road on residential development, and to ensure that acoustic barriers do not dominate the residential character of this road. This buffer will be in addition to the road reserve and will provide the opportunity for landscaping, access and acoustic protection. Landscaping is to

be undertaken in such a manner that it can accommodate future road widening, consultation with RMS is required to determine the most current road widening map. Council may consider a reduced buffer area if it can be demonstrated that these objectives can be achieved in a lesser area;

- 2) A minimum 20m buffer is required along Kent Road (south of Caddens Road) as detailed in Figure E2.6. This buffer shall include, but is not limited to, a landscaped verge, road reserve, footpath and building setback. This measurement is to be taken from the noise wall. In addition to this buffer a minimum 5m landscape strip is required on the other side of the noise wall in accordance with Control (4) below.
- 3) Any application received for subdivision shall include details in relation to the acoustic treatment and should include:
 - a) Cross-sections of the acoustic treatment including landscaping and shall include one section for each different condition.
 - b) A View Analysis of the acoustic treatment including landscaping looking from the road (both internal and external road), this should include a photo montage of any acoustic barriers and proposed development in the background;
 - c) Details of the construction type, colours, materials (minimum masonry) and maintenance of acoustic treatment;
 - d) Landscaping plan including location of acoustic treatment and maintenance schedule; and
 - e) Stepping and variation in the location of the acoustic barrier with opportunity to provide design elements.
- 4) A minimum 5m landscape strip is required along the eastern side of Kent Road in front of any acoustic barriers; this landscape strip is exclusive of any pedestrian/cycleways and the road reserve. The purpose of this landscape strip is to minimise the visual impact of the acoustic barrier on residential development, and to ensure that acoustic barriers do not dominate the residential landscape along this road.

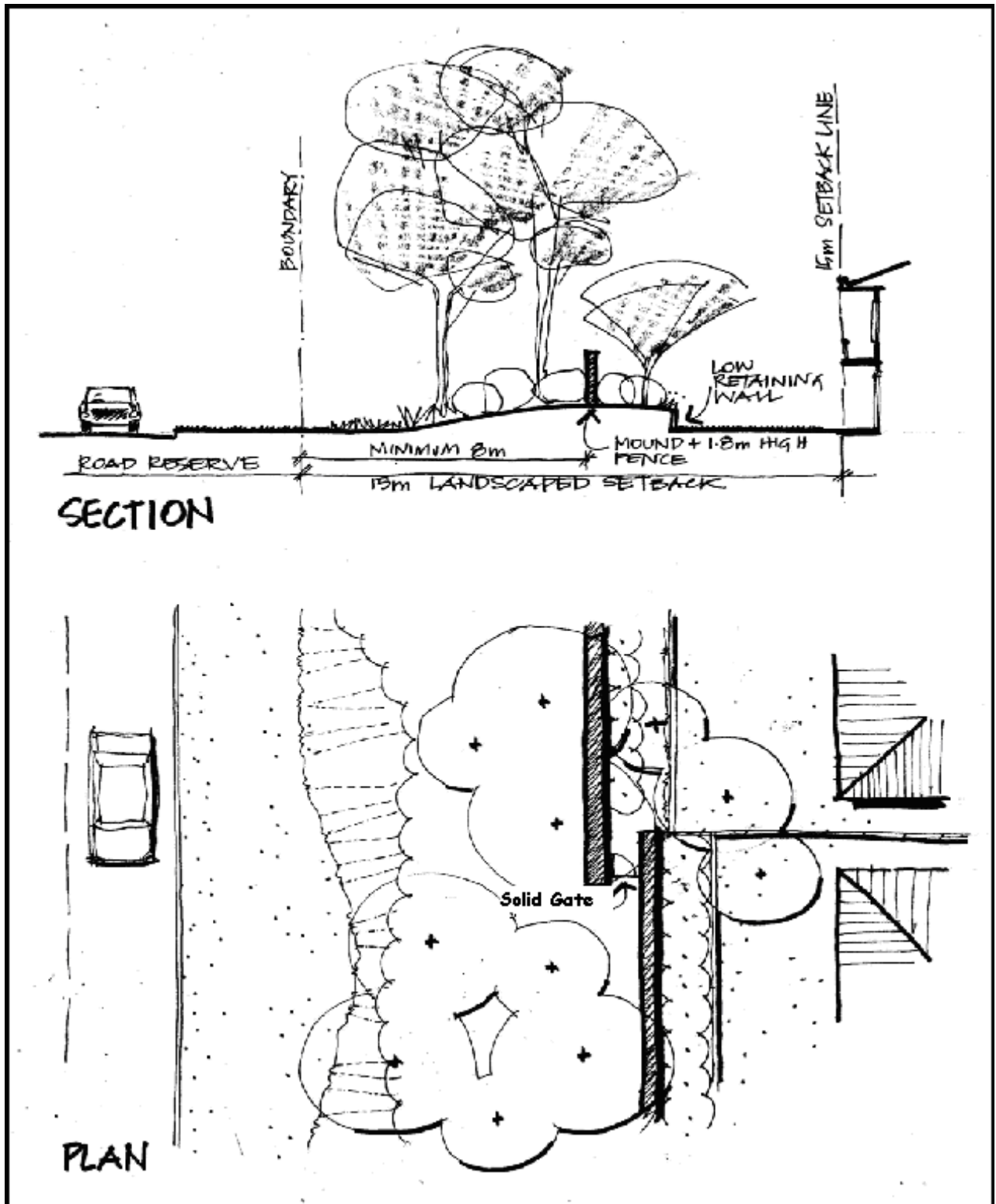
Eastern Precinct – M4 Streetscape

Figure E2.4 – Typical M4 frontage cross-section within the south eastern precinct



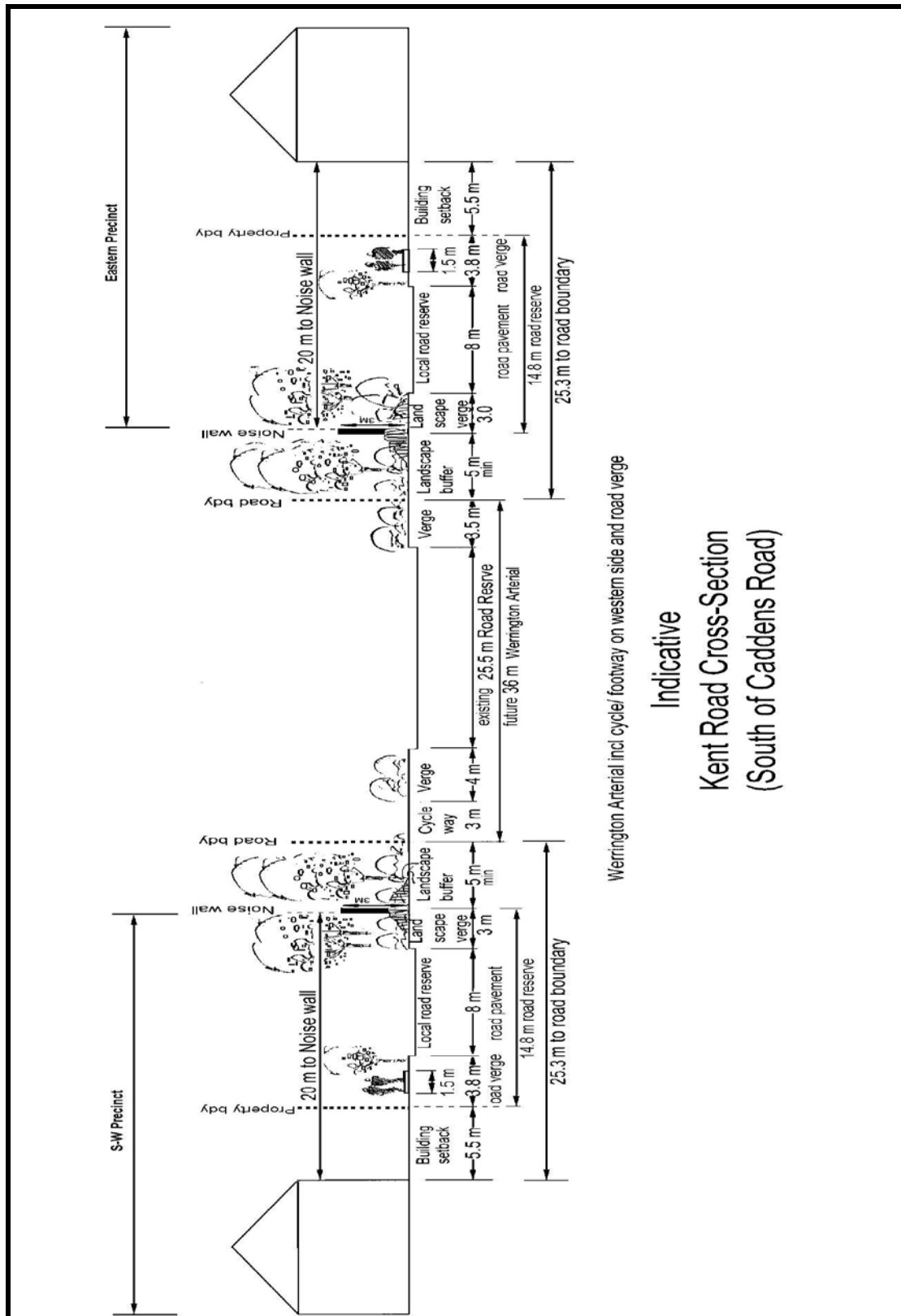
Gipps Street Streetscape

Figure E2.5 – Cross-Section Gipps Street Eastern Precinct North of Caddens Road



Kent Road Streetscape (South of Caddens Road)

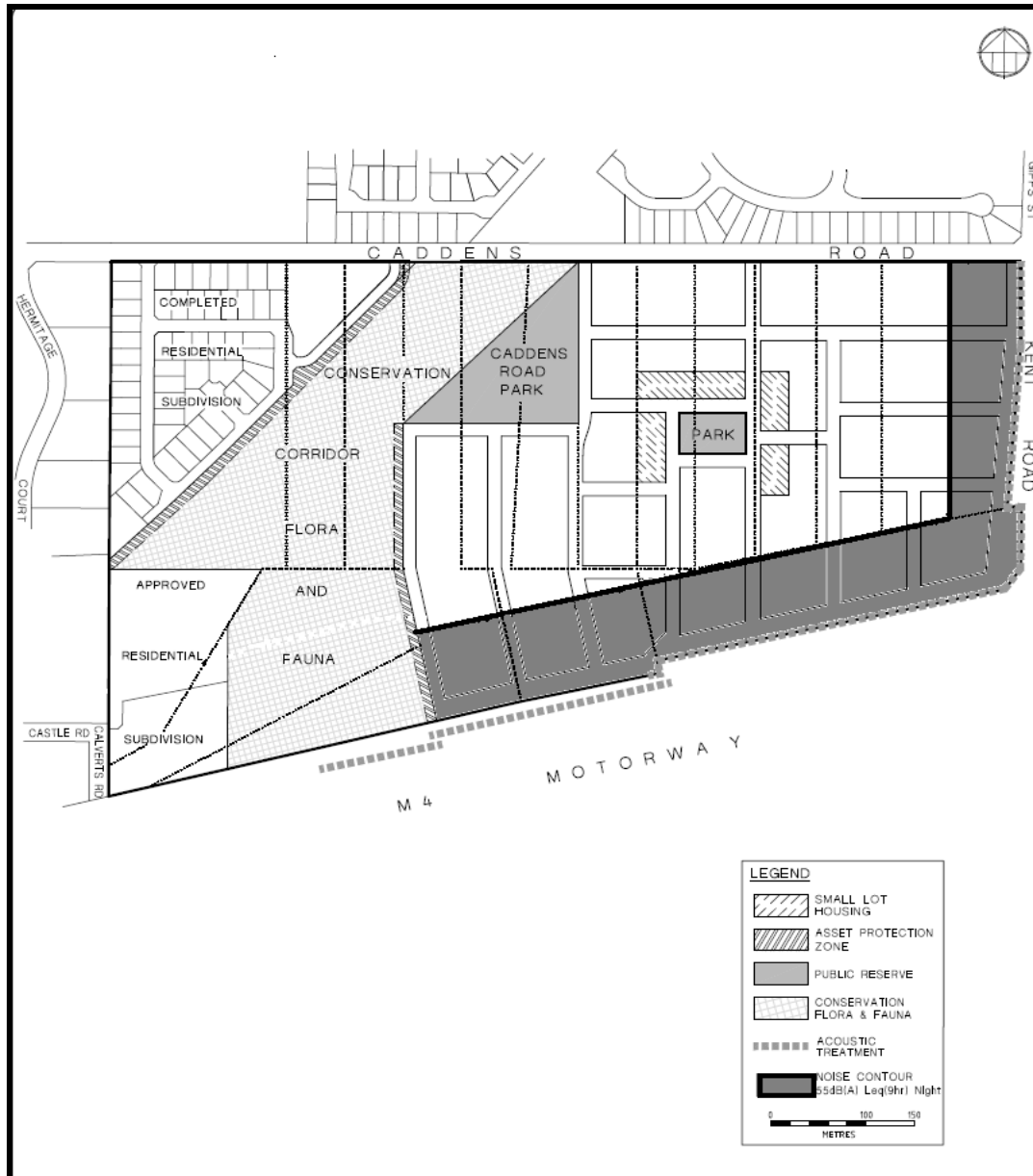
Figure E2.6 – Typical Cross-Section Kent Road South of Caddens Road



South Western Precinct

- 1) Acoustic barriers/treatment including landscaping along the M4 and Kent Road within the south western precinct shall be constructed prior to subdivision commencing on land within the shaded area as indicated on the map (Figure E2.7) below:

Figure E2.7 – Area of Restricted Development due to traffic noise



- 2) A minimum 20m buffer is required along Kent Road as detailed in Figure E2.6. This buffer shall include, but is not limited to, a landscaped verge, road reserve, footpath and building setback. This measurement is to be taken from the noise wall. In addition to this buffer, a minimum 5m landscape strip is required on the other side of the noise wall in accordance with Control (4) below; and

- 3) Any application received for subdivision within the area shaded in Figure E2.7 shall include details in relation to the acoustic treatment and shall include:
 - a) Cross-sections of the acoustic treatment including landscaping and shall include one section for each different condition.
 - b) A View Analysis of the acoustic treatment including landscaping looking from the road (internal and external road), this should include a photo montage of any acoustic barriers and proposed development in the background
 - c) Details of the construction type, colours, materials (minimum masonry) and maintenance of acoustic treatment;
 - d) Landscaping plan including location of acoustic treatment and maintenance schedule; and
 - e) Stepping and variation in the location of the acoustic barrier with opportunity to provide design motif treatment.
- 4) A minimum 5m wide landscape strip is required along the western side of Kent Road in front of any acoustic barrier; this landscape strip is to be exclusive of any pedestrian/cycleways and the road reserve. The purpose of this landscape strip is to minimise the visual impact of the acoustic barrier on residential development, and to ensure that acoustic barriers do not dominate the residential landscape along this road;
- 5) Noise Walls shall be constructed in accordance with the traffic noise assessment prepared by PKA Acoustic Consulting dated June 2006 submitted for the south west precinct.

South Western Precinct

Figure E2.8a – Interface Treatment with M4 and Kent Road South Western Precinct

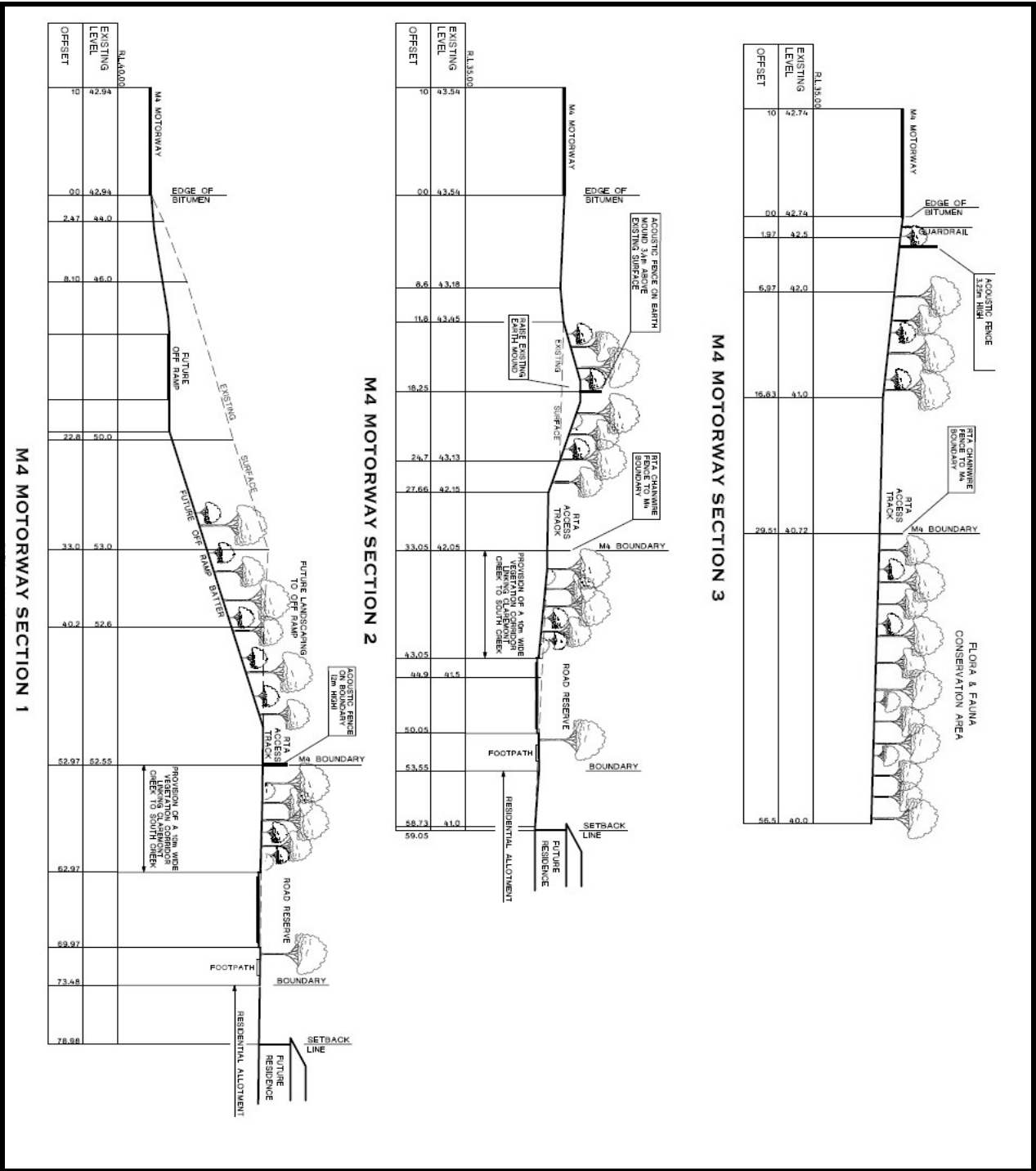
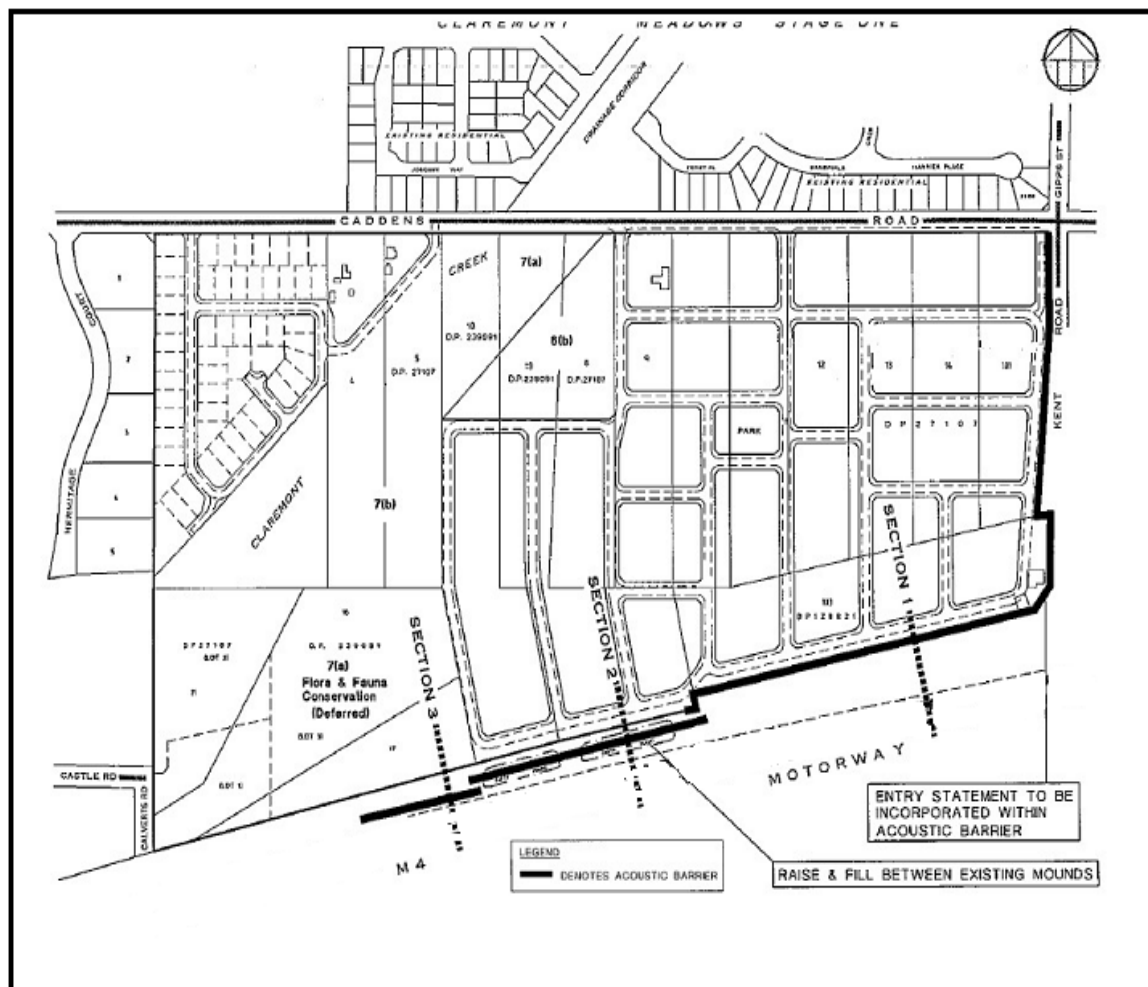


Figure E2.8b – Sections relating to Interface Treatment with M4 detailed in Figure 8a.



2.5.2 Integration with Claremont Meadows Stage 1

Integration on Stage 2 with Stage 1 is essential to allow future residents adequate access to services located in the existing estate. As a result it is important that adequate pedestrian, cycle, public transport and motor vehicle access is provided.

A. Objectives

- a) To ensure that adequate pedestrian and cycle linkages are provided between Claremont Meadows Stage 2 and the existing estate; and
- b) To ensure that planning for Claremont Meadows Stage 2 maximises the benefit of those locations closest to accessing the services in the existing estate.

B. Controls

- 1) The area immediately south of the former tip site should be developed to an appropriate density given its location and zone;
- 2) Development applications shall demonstrate an appropriate road layout for public transport, by ensuring that there is a loop road within the proposed subdivision layout capable of acting as a bus route;
- 3) Development applications shall indicate location for a cycle way which connects to existing facilities outside the precinct, including shops, schools and community facilities in the existing Claremont Meadows Stage 1; and
- 4) Development Applications shall make provision for a pedestrian / cycle link in the south western precinct to link with the open space / drainage corridor in the existing estate.

2.5.3 South Creek Corridor

A. Objective

- a) To ensure that there is recognition of the South Creek corridor as an environmental asset.

B. Controls – Eastern Precinct

- 1) Development Applications for subdivision for the Eastern Precinct shall take account of the presence of the South Creek Corridor as the eastern boundary of Claremont Meadows Stage 2. Particular consideration shall be given when preparing information in the following areas:
 - a) Drainage, particularly water quality and the treatment of all stormwater discharge outside of the riparian corridor before it enters South Creek;
 - b) Appropriate edge treatments are in place and that pedestrian pathway systems are located outside the riparian corridor;
 - c) Biodiversity management and the linkage of remnant vegetation to the riparian corridors;
 - d) Views and vistas; and
 - e) The locating of water quality treatment measures outside the riparian corridor.

2.5.4 Former Gipps Street Landfill Site

A. Objective

- a) To ensure that development takes account of the recreational opportunities of the former Gipps St Landfill site, as well as minimising any negative impacts this site may have.

B. Controls – Eastern Precinct

- 1) Drainage solutions for the eastern precinct shall take account of the possibility of sub surface water movement associated with the former tip site; and
- 2) Development of sites immediately to the north and south of the former tip site should be designed to maximise opportunities for access to future recreational areas and provide appropriately landscaped edges and footpath treatment.

2.6 Public Domain

Council aims to establish a high quality and vibrant urban environment, creating a high level of amenity, convenient access to facilities and services and a feeling of safety and wellbeing for the community.

The public domain is to incorporate design and management requirements for streets, open spaces and parks, drainage and water quality infrastructure, and is to include design and character statements, a schedule of works, delivery timeframes and maintenance requirements for each element.

2.6.1 Management of the Public Domain

A. Objectives

- a) To ensure that facilities provided in the public domain can be effectively managed and maintained.

B. Controls

- 1) The nature of facilities to be provided in the public domain shall be shall include but not limited to:
 - a) Seating;
 - b) Bins;
 - c) Lighting;
 - d) Signage;
 - e) Drainage facilities;
 - f) Shade Structures;
 - g) Public Art; and
 - h) Fencing.
- 2) Development Applications shall include detailed designs and a management and maintenance plan for all facilities proposed for the public domain. This plan shall include a suggested maintenance schedule, outlining the nature and frequency of works required. The purpose of the maintenance plan is to enable Council to properly assess the future maintenance burden of proposed public domain infrastructure.

2.6.2 Landscape Design

A. Objectives

- a) To integrate landscaping in the planning and design of buildings; and
- b) To enhance biodiversity within the precinct by using a diversity of appropriate local native plant species in landscaping design.

B. Controls

- 1) Landscape strategies and design shall be prepared by a suitably qualified person for each precinct;
- 2) Landscapes shall be designed to achieve the amenity, environmental, recreational and townscape objectives of this section and the Landscape Design section of this DCP;
- 3) Design of landscapes shall use a diversity of local native species to minimise need for water and nutrients;
- 4) Mature vegetation that has habitat, civic or heritage values shall be conserved;
- 5) Plant species to take account of remnant Cumberland Plain Woodland in the conservation areas;
- 6) Paving material, lighting, signage and street furniture shall be in accordance with Council guidelines;
- 7) Existing habitat shall be expanded with new plantings configured to provide continuous corridors;
- 8) The design of public streets and parks shall:
 - a) Facilitate multiple uses;
 - b) Be consistent with Council's current management policies and practices;
 - c) Ensure that landmark locations, key thoroughfares and vistas are complemented and reinforced;
 - d) Ensure that drainage reserves are embellished as attractive components within the public domain, as effective adjuncts to wastewater management and as habitat for bird life;
 - e) Provide for the identification of individual neighbourhoods and precincts; and
 - f) Incorporate appropriate local native plant species in the street tree planting.
- 9) Shelter and shade should be provided for buildings and open spaces, moderating the site's natural microclimate.

2.7 Infrastructure

Council has a long term goal of delivering quality assets which meet the needs of the community in a sustainable manner. Infrastructure shall comply with the provisions of Australian Standard 1428 – Design for Access and Mobility, wherever relevant.

2.7.1 Streets and Access

Streets perform a number of functions, including transport, service corridors, and contribution to energy efficiency (through lot orientation) and neighbourhood legibility and amenity. It is important that a proposed road layout take these multiple functions into consideration.

A. Objectives

- a) To provide a street network that is appropriate to environmental design objectives and is economically efficient; and
- b) To provide safe and effective access to individual properties which contribute to a distinctive neighbourhood character and provide high standards of amenity.

B. Controls

- 1) Refer to the Transport, Access and Parking section of this Plan for the various road types.
- 2) The road network shall be designed to accommodate multiple purposes, including:
 - a) Safe and efficient access for pedestrians (including alternative forms of pedestrian activity), cyclists and vehicles which links existing and new infrastructure, public transport services, shopping centres, community facilities and recreation areas. Footpath gradient, safety and surface material must be considered when developing the street pattern;
 - b) Underground routing of service infrastructure;
 - c) Appropriate access for emergency vehicles;
 - d) Contribution to traditional townscape character via street tree amenity including shade to footpaths;
 - e) Provision of vistas to landmarks within the precinct and beyond; and
 - f) Establishment of appropriate solar access for lots, open spaces and buildings.
- 3) Roads shall be designed:
 - a) In accordance with relevant Council policy and design standards and be based on forecast traffic flows (refer to the Transport, Access and Parking section of this Plan);
 - b) To facilitate a configuration of neighbourhood streets appropriate to the desired solar orientation of dwellings;
 - c) To provide safe pedestrian access, and vistas towards landmarks and central destinations within the precinct and beyond, including identification of possible future pedestrian facilities;
 - d) To limit the number of four-way intersections and where they occur, indicate their management;
 - e) To control traffic speeds, incorporating safe pedestrian crossings to central destinations; and
 - f) To incorporate designated pedestrian footpaths, dimensioned and finished to service each precinct according to its desired function and character.
- 4) The streets around the conservation areas and the proposed neighbourhood parks within each sub precinct shall be two way low speed environments. Development Applications shall include details on the measures proposed to achieve this;
- 5) Development Applications shall include cross sections for each type of road proposed in the master plan, including:
 - a) Residential streets;
 - b) The possible future bus route;
 - c) The low speed environment surrounding the park; and

- d) Perimeter roads adjacent to conservation areas and the incorporation of the Asset Protection Zones in the perimeter road.

Cross sections shall indicate overall road reserve, carriageway width, footpath width, location of parking, proposed street tree planting and lighting;

- 6) Road widths shall comply with relevant Council policy;
- 7) A physical barrier is to be provided along the edge of the conservation areas and the proposed neighbourhood park to prevent vehicle access;
- 8) Street trees shall not be planted in the road carriageway. Street tree species selected shall respect the scale and development in the street and not compromise services including lighting; and
- 9) Provision shall be made for any road features (including pedestrian crossings, traffic calming, bus shelters and intersection treatment) anticipated to be needed in the future, when Claremont Meadows Stage 2 has been fully developed.

2.7.2 Sewer and Water

A. Objective

- a) To ensure that development is adequately supplied with sewer and water services.

B. Controls

- 1) Evidence that the precinct can be adequately serviced shall be provided;
- 2) Services shall be planned and designed in conjunction with Sydney Water, including:
 - a) A Section 73 Certificate be obtained from Sydney Water; and
 - b) Compliance with build-over easement restrictions.
- 3) Consultation with the Office of Environment and Heritage is required prior to locating sewer and water utilities in and adjoining riparian corridors for their requirements.

2.7.3 Energy Supplies

A. Objective

- a) To ensure that the site is adequately supplied with energy.

B. Controls

- 1) Evidence that the precinct can be adequately serviced;
- 2) Prior to the submission of an application for development of the site, the owner / applicant shall negotiate the planning and design of services with relevant gas and electricity service providers; and
- 3) Consultation with the Department of Environment and Heritage is required prior to locating gas and electricity utilities in and adjoining riparian corridors for their requirements.

2.7.4 Telecommunications

A. Objective

- a) To incorporate contemporary telecommunications infrastructure that provides access to broadband services to residents and facilitate home businesses.

B. Controls

- 1) Demonstrate that the precinct can be adequately serviced with telecommunications infrastructure;
- 2) Information on contemporary telecommunications services shall be provided, including availability and location of service corridors. Shared service corridors shall have the capacity to accommodate technology advances and any increases in demand;
- 3) Modern telecommunications infrastructure shall be provided with the capacity to support multiple telecommunications services, such as high speed internet (including broad band); voice and data systems; and community intranet; and
- 4) Prior to the submission of a development application, the developer shall negotiate the planning and design of services with Telstra and any other key providers.
- 5) Consultation with the Department of Environment and Heritage is required prior to locating telecommunications infrastructure in and adjoining riparian corridors for their requirements.

Table of Contents

PART A WATERSIDE	2
3.1 WATERSIDE CORPORATE	2
3.1.1.1 PURPOSE OF THIS SECTION	2
3.1.1.2 LAND TO WHICH THIS SECTION APPLIES	2
3.1.2.3 GENERAL OBJECTIVES	2
3.1.3.1 FLOODWAY AND LAKE SYSTEM	4
3.1.3.2 CATCHMENT WATER QUALITY	5
3.1.3.3 WATER QUANTITY	6
3.1.3.4 MANAGEMENT OF THE LAKES SYSTEM	6
3.1.4.1 SITE AND BUILDING WORKS	8
3.1.4.2 ACCESS AND PARKING	9
3.1.4.3 ACOUSTIC REQUIREMENTS	10
3.1.4.4 STREETScape	10
3.1.4.5 BUILDING ENVELOPES	11
3.1.4.6 BUILT FORM – CORNER OF ANDREWS AND CASTLEREAGH ROADS	12
3.1.4.7 BUILT FORM – LATERAL 1	13
3.1.4.8 BUILT FORM - NEIGHBOURHOOD FACILITIES	13
3.1.4.9 LANDSCAPING AND OPEN SPACE	14
3.1.5.1 MANAGEMENT PRINCIPLES	15
3.2 WATERSIDE RESIDENTIAL	18
3.2.1.1 PURPOSE OF THE SECTION	18
3.2.1.2 LAND TO WHICH THE SECTION APPLIES	18
3.2.1.3 VISION FOR WATERSIDE	19
3.2.1.4 AIMS AND PRINCIPLES OF THIS SECTION	19
3.2.1.5 URBAN STRUCTURE AND STAGING	22
3.2.1.6 APPROVAL PROCESS	24
3.2.1.7 SPECIFIC INFORMATION RELATING TO THE R1 GENERAL RESIDENTIAL AND E2 ENVIRONMENTAL CONSERVATION ZONES	25
3.2.1.8 WETLANDS PROTECTION	25
3.2.1.9 OWNERSHIP AND MANAGEMENT UNDER THE COMMUNITY SCHEME LEGISLATION	27
3.2.2.1 FLOODWAY, DRAINAGE AND SITE WORKS	28
3.2.2.2 URBAN DESIGN	34
3.2.2.3 ACOUSTIC REQUIREMENTS	43
3.2.2.4 LANDSCAPE PLANTING AND OPEN SPACE	46
3.2.2.5 ROADS AND CAR PARKING	54
3.2.2.6 RESIDENTIAL DEVELOPMENT	60
3.2.2.6.1 DWELLING TYPES	60
3.2.2.6.2 RESIDENTIAL DEVELOPMENT CONTROLS	65

Part A Waterside

A. Background

This section of the DCP applies to Waterside, which includes both the employment and residential components as identified in Figure E3.1.

Waterside is a 54 hectare residential and employment precinct located approximately 2km north of Penrith City Centre and adjacent to the Penrith Lakes Scheme.

The locality is characterised by a mix of residential, industrial and recreational uses. Large industrial activities are located to the south on the opposite side of Andrews Road. Grey Gums Reserve is located immediately to the east of the site with the residential suburb of Cranebrook located further to the east. The Penrith Lakes Scheme, including the Sydney International Regatta Centre and the White Water Stadium, are located to the west on the opposite side of Castlereagh Road.

3.1 Waterside Corporate

3.1.1 Preliminary

3.1.1.1 Purpose of this Section

The purpose of this Section is to guide development of the Waterside Corporate Precinct.

3.1.1.2 Land to which this Section Applies

This section applies to the land shown on Figure E3.1 below.

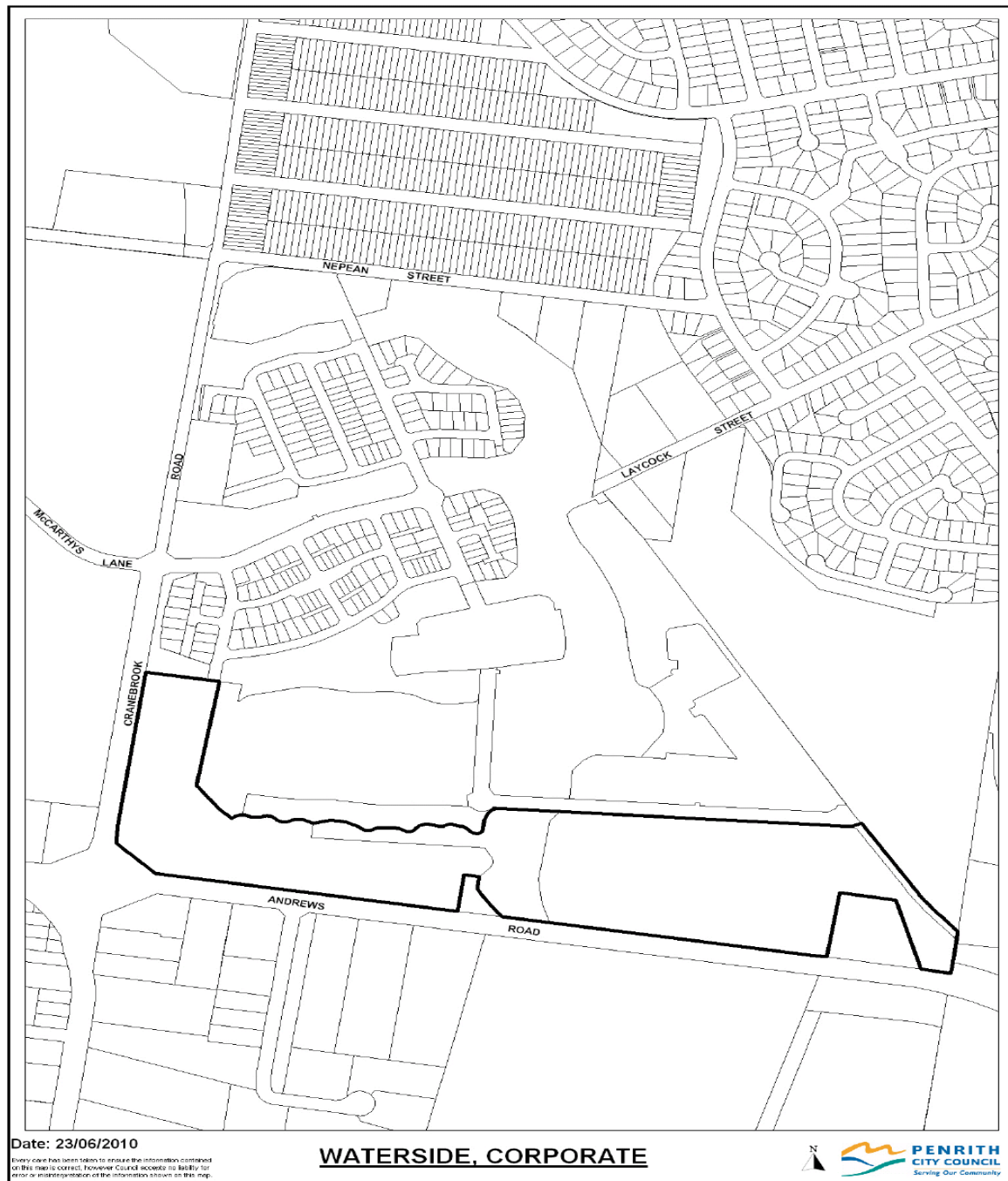
3.1.2.3 General Objectives

A. General Objectives

- a) To provide a clear planning framework for development of the site;
- b) To maintain and enhance the views through and across the subject land to the Penrith Lakes, the Nepean River and the Mountains;
- c) To encourage development that enhances the area's gateway location to Penrith and Penrith Lakes;
- d) To minimise any adverse impact to residential development from noise as a result of industrial development;
- e) To manage stormwater runoff, water quality and flooding in a safe, effective and environmentally responsible manner;
- f) To provide opportunities for employment, visitor accommodation, child care facilities, neighbourhood shops and community facilities; and

- g) To ensure the visual quality and the operating function of Waterside Corporate and the lakes system complement future development in the adjoining residential zone and achieve an appropriate and suitable interface between the two zones.

Figure E3.1: Land to which the 'Waterside Corporate' Part applies.

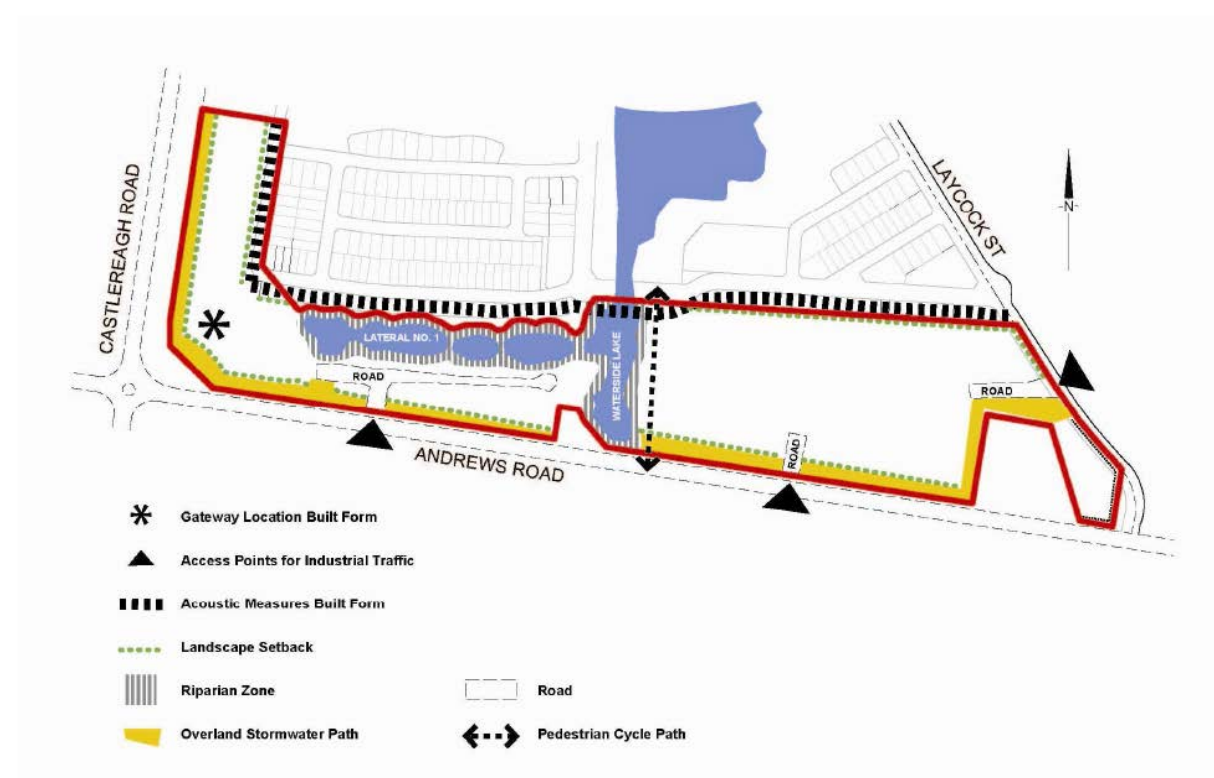


3.1.2 Site layout

The site is to be developed generally in accordance with the Key Design Elements shown in Figure E3.2: Key design Elements (Waterside Corporate). Council will consider variations to

this layout where it can be demonstrated that the objectives of this section of the DCP can be met.

Figure E3.2: Key Design Elements (Waterside Corporate)



3.1.3 Site development controls

3.1.3.1 Floodway and lake system

A. Objectives

- To ensure development of the site is compatible with the flooding characteristics of the locality;
- To ensure no adverse impact from flooding is experienced upstream and downstream as a result of development of this land; and
- To ensure that development is appropriately protected from flood inundation.

B. Controls

- The floodway and lake system shall be located generally in accordance with Figure E3.2: Key Design Elements (Waterside Corporate).

- 2) The floodway/main lake system shall have a width no less than that determined by Council having considered both flood conveyance requirements and modelled pre/post development flood impacts/variances for the 1% AEP (Annual Exceedance Probability), 0.5% AEP and 0.2% AEP local catchment and Nepean River flood events.
- 3) The lakes and lake foreshores (particularly the depth and grading) shall be designed to maximise safety.
- 4) Habitats, including islands, shall be constructed in each of the major lakes generally as indicated in Figure E3.2: Key Design Elements (Waterside Corporate) to provide habitat for local flora and fauna.
- 5) The floodway and lake system and their habitats are to be constructed and operated so as not to be conducive to mosquito breeding.
- 6) A recirculation system for the lakes shall be provided. The system must comprise components which will:
 - a) Minimise the likelihood of stratification of lakes, if this is necessary due to lake depth; and
 - b) Allow for full or partial draining of the lakes for maintenance purposes.

3.1.3.2 Catchment water quality

A. Objectives

- a) To ensure that an adequate and environmentally sustainable method of controlling surface water and storm water is implemented;
- b) To ensure appropriate water quality standards are maintained throughout the system and that post development water quality is an improvement on pre development water quality;
- c) To maintain adequate water quality levels throughout the lakes system at all times; and
- d) To ensure that water quality standards are not compromised for the lakes system.

B. Controls

- 1) Water quality is to be improved and maintained by every proposed development.
- 2) Adequate velocity and the controlled flow of water through the system shall be maintained at all times, to ensure the quality of the water and to reduce mosquito populations.
- 3) Water quality shall be enhanced by trapping and removing all debris. Gross pollutant traps are to be provided where the floodway enters the property at the Andrews Road boundary and where drainage from the south western corner of the public reserve enters the property at its eastern boundary.
- 4) Macrophyte planting is to be provided around the perimeter of the lakes to assist in the filtering of nutrients.

- 5) The use of fertilisers and other sources of nutrients may adversely impact on water quality and shall be minimised.
- 6) A process for monitoring the quality of discharges from this land is required to ensure system performance is maintained. This process, and agreed outcomes, shall be established through negotiation with the Penrith Lakes Development Corporation, Council, Department of Environment, Climate Change and Water. The monitoring process shall include maintenance of nutrient levels, and shall be undertaken on a regular basis. Details of the program shall be submitted with the development application/s for the construction of the lakes system.

3.1.3.3 Water quantity

A. Objectives

- a) To ensure adequate circulation and stable water levels through the lake system and branch waterways.

B. Controls

- 1) A permanent water level shall be maintained within the lakes and lateral waterways.
- 2) An internal pumping system must be installed to enable the pumping of water between lakes, and the maintenance of water quality.
- 3) The pump system shall be enclosed, or provided with acoustic treatment or barriers, to ensure residents are not affected by the noise generated by its operation.
- 4) Water levels in the lakes and all laterals shall comply with the approved Water Management Plan (see 3.1.3.4 control (3)(c)).

3.1.3.4 Management of the lakes system

A. Objectives

- a) To ensure the maintenance of the water management system (floodway, lakes, lateral waterways and stormwater drainage) to appropriate design and environmental standards; and
- b) To encourage innovative design solutions to complement the management of water within the catchment.

B. Controls

- 1) A management plan for the regular maintenance of the lakes system shall be established and enforced. This shall include regular mowing and maintenance of the verges, pruning, structural and operational maintenance of the system, dewatering and desilting the lakes and ponds, and removal and replanting of the macrophytes as required.

- 2) Council shall not issue development consent for a proposal to subdivide or develop the site unless satisfactory arrangements have been made with Council for the ongoing maintenance and management of the lakes system.
- 3) As part of a development application submitted for construction of the lakes system, the following issues must be addressed:
 - a) A proposal, which outlines the agreed responsibilities of all relevant parties, for the ownership and management of the lakes system. Satisfactory arrangements regarding this matter must be achieved prior to granting development consent for construction of the lakes system or subdivision of land;
 - b) Means of improving water quality compared with existing water quality (at the time of submission), and the proposed water quality monitoring regime; and
 - c) A Water Management Plan for the maintenance of the lakes system, including a schedule of proposed maintenance activities, annualized operational costs, and capital replacement costs. The Water Management Plan should also address:
 - i) The water quality and quantity discharge details, including expected changes in water quality and quantity to the existing system due to development (low flows, high flows, total over average rainfall year);
 - ii) A plan for monitoring the quality of water discharge from the site;
 - iii) The management of pollutants, such as oils, grass clippings, etc;
 - iv) The control of exotic flora and fauna;
 - v) Stormwater controls;
 - vi) Groundwater effects (including any plans to draw from the groundwater for supply);
 - vii) Sewer requirements (impact on existing sewer system and lake system);
 - viii) Emergency controls;
 - ix) The handling of water during the various stages of construction, as well as the final system (including site water management plan and sediment and erosion control measures);
 - x) The incorporation of water management facilities;
 - xi) The process of handling contaminated fill, if required;
 - xii) Wastewater reuse and its impact on outflow (quality and quantity);
 - xiii) Internal pumping and the impact on outflow;
 - xiv) A Construction Management Plan in relation to leaching or deposition of materials into the lakes system and control of runoff;
 - xv) A program for mosquito control; and

xvi) Any other relevant matter identified in this section.

3.1.4 Built form controls

3.1.4.1 Site and building works

A. Objectives

- a) To ensure that development meets sound environmental and flood planning practices and standards;
- b) To make adequate provision for stormwater runoff in and through Waterside; and
- c) To ensure that any contaminated land found on the site is properly managed and remediated to a level appropriate for the subject development.

B. Controls

- 1) All buildings on the site shall be designed and built such that their structural integrity can withstand flood flows generated by a flood equivalent to the Nepean River 'Flood of Record'- equating to the 0.5% AEP Flood Event. Damage potential is to be determined considering flood duration, flood depth and flow velocity such that buildings do not sustain structural damage or loss of load bearing capacity following immersion. Council will be guided by reference to available documentation provided in the 'Nepean Floodplain Management Strategy' in its determination as to whether flood compatible building design and material selection have been adequately considered. Appropriate modelling and mapping is to be undertaken to determine those areas of the site, which when fully developed, would present landform/development characteristics where special flood compatible building design is required.
- 2) All lots should have their finished surface at least 0.5m above the 1% AEP flood level generated by local catchment or Nepean River flood flows, whichever generates the higher flood levels.
- 3) Where finished ground levels are not 0.5m above the 1% AEP flood event level, all floor levels shall be constructed a minimum of 0.5m above the flood level.
- 4) Finished surface and ground levels shall fall to property boundaries and along roads to achieve adequate drainage.
- 5) Stormwater from individual lots shall be captured and stored, where feasible, for future use in landscape maintenance. Dispersed points of discharge to the waterway system (using roads, paths or open spaces) shall be provided. This may include a piped drainage system and grassed swales through open space areas.
- 6) Roof and surface water not reused on each lot is to be discharged into the lake system in a controlled manner.
- 7) All stormwater being discharged into the lake system is to be free of harmful pollutants, contaminants, grass litter and biodegradable matter.

- 8) The stormwater system shall be designed and constructed in accordance with Council's engineering standards.
- 9) A Stage 2 Environmental Site Assessment must be submitted to Council as part of any development application for bulk earthworks.
- 10) Any contaminated land must be remediated in accordance with the land management requirements of this DCP.

3.1.4.2 Access and parking

A. Objectives

- a) To ensure safe and functional vehicle access and parking arrangements;
- b) To prevent direct vehicular access to or from any development and Castlereagh Road and/or Andrews Road;
- c) To provide a functional link between Waterside Residential and Waterside Corporate but to discourage unnecessary commercial traffic movements through the residential zone; and
- d) To ensure safe, accessible and functional pedestrian and bicycle movement.

B. Controls

- 1) The significant entries to Waterside Corporate shall be located generally in accordance with Figure E3.2: Key Design Elements (Waterside Corporate). The type, size and specific location of the entry must be supported by a detailed traffic analysis prepared by an appropriately qualified professional.
- 2) Roads within Waterside Corporate shall be constructed above the 1% AEP flood level.
- 3) Access to or from Andrews and Castlereagh Roads shall only be permitted via an approved road. Individual driveways for site-specific developments will not be permitted.
- 4) Access to or from the neighbourhood facilities will be via Road 3 as shown in Figure E3.2: Key Design Elements.
- 5) Bus bays/shelters are to be provided to specifications and at locations to be determined by Council.
- 6) An evacuation plan for Waterside Corporate shall be developed in conjunction with the State Emergency Service. Details of this plan shall be submitted to Council prior to occupation of any building.
- 7) Below ground parking is not permitted.
- 8) Parking within the front building setback may be considered where it can be shown that the objectives of Section 3.1.4.9 Landscaping and Open Space will be achieved.
- 9) Publicly accessible bicycle/pedestrian paths are to be provided as indicated in Figure E3.2: Key Design Elements (Waterside Corporate).

- 10) Pedestrian pathways and cycleways shall be linked to provide a safe, integrated and continuous pedestrian/cycle network around the lake system and within the site.

3.1.4.3 Acoustic requirements

A. Objectives

- a) To minimise any adverse impact to residential development of noise from nearby industrial development; and
- b) To ensure that the design of any acoustic measures contribute to the visual amenity of Waterside and are suitably integrated with the built form and landscaping of the site.

B. Controls

- 1) All development applications are to be accompanied by an acoustic report or noise impact statement prepared by a qualified acoustic consultant as follows:
 - a) Where development is to provide the principal acoustic buffer between residential and industrial development, an acoustic report is required to demonstrate the development will satisfy the noise criteria of Waterside Clause of Penrith LEP 2010; and
 - b) All other development proposals are to be accompanied by a noise impact statement prepared in accordance with and demonstrating compliance with the noise and vibration requirements of this DCP.
- 2) All acoustic measures must be designed to:
 - a) be compatible with the flood characteristics of the estate;
 - b) integrate with adjoining buildings;
 - c) be aesthetically and visually pleasing;
 - d) be compatible with the locality when viewed from both the residential and industrial areas of the estate;
 - e) be constructed of robust and readily maintained materials that also minimise opportunities for vandalism;
 - f) integrate with and accommodate the pedestrian/cycle network, riparian areas and landscaping within the estate; and
 - g) creatively respond to site characteristics and constructed with visually permeable elements where they cross water bodies.

3.1.4.4 Streetscape

A. Objectives

- a) To enable flexibility in building height and design to provide variety in facades and external appearance;

- b) To ensure that development creates a varied streetscape consistent with the envisaged built form scale in the locality;
- c) To ensure the design and appearance of buildings and/or development, particularly when viewed from the waterways, other public places and Cranebrook is of a high standard; and
- d) To coordinate lighting design and solutions across Waterside Corporate.

B. Controls

- 1) Buildings adjacent to the residential zone are to be of a scale and design sympathetic to nearby residential dwellings.
- 2) Development adjacent to residential houses should reflect the change in both detailing and massing and should not overlook private open spaces.
- 3) Architectural design along Andrews Road should be of a high standard, utilising quality materials and finishes.
- 4) Development is to provide a general image of buildings within a green setting, through the combination of appropriate setbacks and landscaping.
- 5) The aesthetic appeal of the street is to be maintained while providing a primary service role for vehicular and pedestrian access.
- 6) Roof plant must be effectively screened from view.
- 7) To soften the effect of development, landscaping must be of an appropriate scale and size consistent with the bulk and scale of buildings.
- 8) Service areas are to be placed to the rear or side of buildings, unless it can be established that they will not impact adversely on visual amenity or the acoustic requirements of this Section.
- 9) An integrated design for lighting is to be implemented throughout the site that is also complementary to the Waterside Residential lands.

3.1.4.5 Building envelopes

A. Objectives

- a) To provide a visual and supplementary acoustic barrier between residential and industrial development;
- b) To enhance the views through and across the subject land to Penrith Lakes, the Nepean River and the Blue Mountains;
- c) To provide quality urban design at an appropriate scale;
- d) To provide appropriately landscaped setbacks to roads and along boundaries adjoining residential and riparian areas; and

- e) To provide building envelopes consistent with the scale of adjoining development, the desired streetscape and future amenity of the locality.

B. Controls

- 1) The setbacks of buildings from the boundary are to be in accordance with Table E3.1: Building Setbacks below.
- 2) Minor variations in setbacks will be considered where they will contribute to a varied and attractive streetscape and do not compromise relevant objectives.

Table E3.1: Building setbacks

Location	Minimum setback
Andrews Road	10m
Castlereagh Road	10m
Laycock Street	9m
Buildings fronting secondary and internal roads	5m
Buildings on lots adjoining residential land and riparian corridors	5m

3.1.4.6 Built form – corner of Andrews and Castlereagh Roads

A. Objectives

- a) To enhance the gateway location at the intersection of Andrews Road and Castlereagh Road through strong built forms;
- b) To reflect the gateway location with well-designed buildings incorporating a strong corner element;
- c) To provide built form with additional architectural emphasis, such as varied building height, distinctive roof forms, articulated wall elements and bold use of materials;
- d) To provide a suitable acoustic barrier to residential development to the north; and
- e) To ensure that car parking is not visually intrusive.

B. Controls

- 1) Buildings are to address Andrews and Castlereagh Roads.
- 2) Front facades are to provide visual interest through articulation and the use of architectural treatments such as projections, indentations and roof elements.

- 3) Elevations are to display a variety of different materials and textures but endeavour to have a cohesive outcome.
- 4) Parking is to be visually unobtrusive and blend in and respect the overall character of the built form.
- 5) Any multi-storey car parking is to be integrated into the built form and screened from public view by appropriate landscaping and creative use of materials, e.g. perforated screens.

3.1.4.7 Built form – Lateral 1

A. Objectives

- a) To provide access arrangements, building orientation and building design that address the riparian corridor.

B. Controls

- 1) Buildings are to front Lateral 1.
- 2) The front and rear elevations of buildings are to provide visual interest through articulation and architectural treatments, such as projections, indentations and roof elements.
- 3) The Andrews Road frontage of this section of the site is to be densely planted to enhance the presentation of development.

3.1.4.8 Built form - neighbourhood facilities

A. Objectives

- a) To provide a neighbourhood shop, cafes, restaurants and related facilities and services for the local residential community and workers in the locality;
- b) To provide a destination and gathering point for the residential and worker community;
- c) To provide a high level of connectivity for pedestrians and cyclists between the facilities and residential development and employment lands;
- d) To provide active street frontages and consolidate activity around a central area; and
- e) To ensure that parking is unobtrusive and suitably landscaped.

B. Controls

- 1) Any views to the lakes and riparian areas are to be maximised.
- 2) The neighbourhood facilities are to be linked into the broader cycle/pedestrian network.
- 3) Parking areas are to be interspersed with areas of landscaping to soften the visual expanse of hard paving.

3.1.4.9 Landscaping and open space

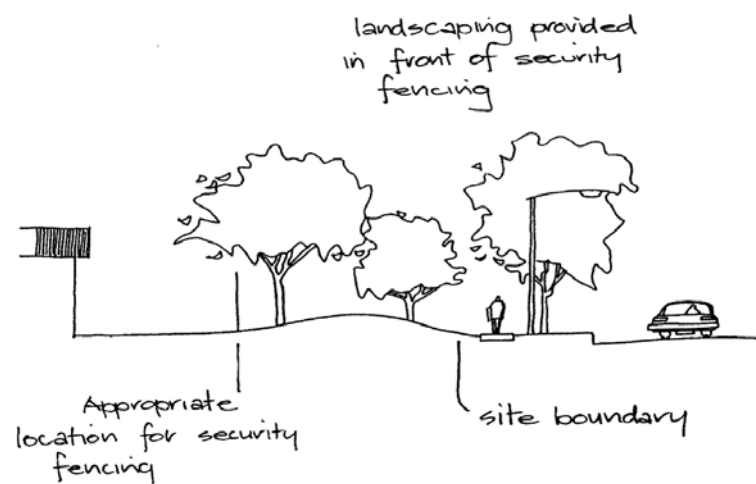
A. Objectives

- a) To provide landscaping which screens and softens building mass and roof form, particularly when viewed from adjoining roads and surrounding areas;
- b) To provide open spaces which are safe and inviting to use;
- c) To ensure the grouping of landscaped areas between adjoining developments, consolidate open space areas and allow a greater density of tree planting; and
- d) To provide high quality and consistent themed landscaping to Castlereagh Road and Andrews Road frontages of the site.

B. Controls

- 1) The design of open space areas and buildings shall enhance existing views and create opportunities for additional views within and through the site.
- 2) The front building setback and setbacks to all public areas must be landscaped to soften building mass and roof forms.
- 3) The building setback adjoining residential development must be landscaped and used for that purpose only.
- 4) Landscaping must comprise canopy trees under planted with suitable shrubs and/or groundcover.
- 5) Landscaping along the Castlereagh Road and Andrews Road frontages of the site is to be of a consistent theme, comprised predominantly of native species.

Figure E3.3: Example of preferred landscaping design



3.1.5 Ownership and management

Waterside Corporate will be subdivided under the community scheme legislation. This will enable the creation of individual lots under Torrens Title, Strata Schemes and Community Property for the shared rights and responsibilities of the Community Association, and the dedication of land to Council. It also ensures that the lakes system can be properly managed without unreasonable demands on Council resources. Under the proposed system, the Community Association will be able to maintain and embellish publicly accessible land to a higher standard than is readily achievable with Council resources.

3.1.5.1 Management principles

- 1) The lake system within Waterside is owned and managed by the Community Association. The lake system consists of:
 - a) The 5 main lakes, the lateral lakes, and the water contained within the lakes;
 - b) The open space surrounding the lakes and below the 1% AEP;
 - c) The culverts and weirs that are not within the road reserves;
 - d) The pump system to maintain water levels and water quality; and
 - e) The water quality devices, such as gross pollutant traps, macrophyte planting and grass swales.
- 2) Arrangements for the maintenance of areas within the development, including the lake system, the internal road system and any other publicly accessible areas shall be made prior to the granting of development consent for construction of the lakes system or subdivision of land and are indicated in Table E3.2: Management Designation below.
- 3) The road system for the development, except the private accessways, shall be dedicated to Council.
- 4) Public access shall be provided and maintained at all times to the parks and bicycle/pedestrian pathways identified in Figure E3.2: Key Design Elements (Waterside Corporate).
- 5) The Community Association shall maintain the lake system, open space areas around the lakes and all bicycle/pedestrian pathways. The Community Association must remove litter that may collect among the macrophyte planting.
- 6) The Community Association shall maintain landscaped areas within the median strips, roundabouts and footpaths.
- 7) The access ways are to be created as restricted neighbourhood property to ensure that the restricted neighbourhood property users will pay for the maintenance and upkeep of those areas.

Table E3.2: Management Designation

Element	Owned By	Maintained By	Cleaned By
Road System	Penrith City Council	Penrith City Council	Community Association
Utility Services	Service Provider	Service Provider	Service Provider
Garbage Services	Penrith City Council	Penrith City Council	Penrith City Council
Acoustic Barrier	Community Association	Community Association	Community Association
Community Facilities ¹	Community Association	Community Association	Community Association
Community Property ²	Community Association	Community Association	Community Association
Landscaping ³	Penrith City Council, Community Association and Neighbourhood Association	Community Association	Community Association
Road Bridges	Penrith City Council	Penrith City Council	Community Association
Road Retaining Wall	Penrith City Council	Penrith City Council	Community Association
Pedestrian Bridges	Community Association	Community Association	Community Association
Main Weirs	Community Association	Community Association	Community Association
Road Culverts	Penrith City Council	Penrith City Council	Penrith City Council
Low Flow Weirs	Community Association	Community Association	Community Association
Road Stormwater Pipelines and Pits	Penrith City Council	Penrith City Council	Community Association
Road Pit Socks	Penrith City Council	Penrith City Council	Community Association
Gross Pollutant Traps	Penrith City Council	Penrith City Council	Penrith City Council
Recirculation	Community Association	Community	Community

Element	Owned By	Maintained By	Cleaned By
System		Association	Association
Macrophyte Planting	Community Association	Community Association	Community Association
Grass Swales	Penrith City Council	Penrith City Council	Community Association
Lake Warning Signs and Fences	Community Association	Community Association	Community Association

Table Notes:

1. *The Community facilities are defined as facilities for the use of proprietors and occupiers of the community scheme.*
2. *The Community property is defined as property owned and maintained by the Community Association.*
3. *The Landscaping on the site is owned by different parties, yet all of it is maintained by the Community Association. Penrith City Council owns the public roads, medians, footpaths in public roads, roundabouts and woodland reserve. The Community Association owns all open space areas associated with the lakes and community property. The Neighbourhood Association owns all neighbourhood property.*

3.2 Waterside Residential

3.2.1 Preliminary

3.2.1.1 Purpose of the Section

The purpose of this Section is to guide residential development of the Waterside area.

3.2.1.2 Land to which the Section applies

This section applies to the land shown on Figure E3.4 below.

Figure E3.4: Land to which the 'Waterside Residential' Part applies.



3.2.1.3 Vision for Waterside

The development at Waterside has evolved in response to on-site and surrounding physical characteristics. The majority of residential traffic will access the site via Castlereagh Road and Laycock Street.

The development is to deliver a broad range of dwelling types that have high levels of amenity and good access to on-site open space areas and facilities.

Landscaping will separate the buildings in the Corporate and Residential zones. The proposed residential development will be separated from the light industrial buildings by dense landscaping to be contained in building setbacks, roadway verges and median strips. This landscaping will provide a transition between the different land uses and building types.

Development of Waterside is to:

- 1) utilise and enhance the natural characteristics of the land to create a unique community identity and special residential environment.
- 2) meet sound environmental planning practices and standards and satisfy ecologically sustainable design principles.
- 3) maintain and enhance the views through and across the subject land to the Penrith Lakes, the Nepean River and the Mountains.
- 4) minimise any adverse impact on residential development from noise on adjacent roads and nearby industrial development.
- 5) manage the collection, storage, disposal and impacts of stormwater in an environmentally sustainable and responsible manner.
- 6) Retain and enhance the existing wetlands adjacent to Nepean Street.
- 7) Enable a diverse range of housing forms and densities to meet the needs of different age groups and family compositions.
- 8) Demonstrate a high standard of residential amenity and urban and architectural design quality.

3.2.1.4 Aims and Principles of this Section

A. Aims of this Section

- a) To provide a clear planning framework for development in the area;
- b) To ensure that development meets sound environmental planning practices and standards and encourage development which satisfies ecologically sustainable design principles;
- c) To protect the environmental heritage of the area, whether it is of historic, aesthetic, architectural, archaeological, natural, cultural, Aboriginal or other significance;
- d) To utilise and enhance the natural characteristics of the land to provide opportunities for a unique community identity and special residential environment;

- e) To supplement and enhance the landscape character of the area;
- f) To maintain and enhance the views through and across the subject land to the Penrith Lakes, the Nepean River and the Mountains;
- g) To encourage development which enhances the area's gateway location to Penrith and Penrith Lakes;
- h) To minimise any adverse impact, to residential development, of noise from traffic on adjacent roads and nearby industrial development;
- i) To responsibly manage drainage, water management and flooding;
- j) To retain and enhance the existing wetlands adjacent to Nepean Street;
- k) To provide opportunities for visitor accommodation;
- l) To ensure that development occurs in an orderly and economic way; and

B. Development Principles

- 1) The management of the lake system will be determined by agreement between all major parties, and will be kept within the ownership of the Community Association. The lake system consists of:
 - a) The 5 main lakes, the lateral lakes, and the water contained within the lakes;
 - b) The open space surrounding the lakes and below the 1% AEP;
 - c) The culverts and weirs that are not within the road reserves;
 - d) The pump system to maintain water levels and water quality; and
 - e) The water quality devices, such as gross pollutant traps, macrophyte planting, and grass swales.
- 2) Arrangements for the maintenance of areas within the development, including the lake system, the internal road system and any other publicly accessible areas shall be made prior to the granting of development consent for construction of the lakes system or subdivision of land and are indicated in Table E3.3: Management Designation under Community Management Statement.
- 3) The road system for the development, except the private accessways, shall be dedicated to Council.
- 4) Public access shall be provided and maintained at all times to the parks and bicycle/ pedestrian pathways identified in Figure E3.11 – Land Accessible to the Public.
- 5) The Community Association shall own and manage all open space with the exception of the Woodland Reserve, which is to be rehabilitated and dedicated as public reserve.
- 6) The Community Association shall maintain the lake system, open space areas around the lakes and all bicycle/pedestrian pathways. The Community Association must remove litter that may collect among the macrophyte planting.

- 7) The Community Association shall maintain landscaped areas within the median strips, roundabouts and footpaths.
- 8) The access ways are to be created as restricted neighbourhood property, to ensure that the restricted neighbourhood property users will pay for the maintenance and upkeep of those areas.
- 9) Dwellings are to be designed to accommodate home-based telecommunications facilities, with shared antenna/television aerials (if necessary) for dwellings on each residential 'island'.

Table E3.3 - Management Designation under Community Management Statement

Element	Owned By	Maintained By	Cleaned By
Road System	Penrith City Council	Penrith City Council	Community Association.
Utility Services	Service Provider	Service Provider	Service Provider
Garbage Services	Penrith City Council	Penrith City Council	Penrith City Council
Acoustic Barrier	Community Association	Community Association	Community Association
Community Facilities ¹	Community Association	Community Association	Community Association
Community Property ²	Community Association	Community Association	Community Association
Landscaping ³	Penrith City Council, Community Association & Neighbourhood Association	Community Association	Community Association
Road Bridges	Penrith City Council	Penrith City Council	Community Association
Road Retaining Wall	Penrith City Council	Penrith City Council	Community Association
Pedestrian Bridges	Community Association	Community Association	Community Association
Main Weirs	Community Association	Community Association	Community Association
Road Culverts	Penrith City Council	Penrith City Council	Penrith City Council

Element	Owned By	Maintained By	Cleaned By
Low Flow Weirs	Community Association	Community Association	Community Association
Road Stormwater Pipelines and pits	Penrith City Council	Penrith City Council	Community Association
Road Pit Socks	Penrith City Council.	Penrith City Council.	Community Association
Gross Pollutant Traps	Penrith City Council	Penrith City Council	Penrith City Council
Recirculation System	Community Association	Community Association	Community Association
Macrophyte Planting	Community Association	Community Association	Community Association
Grass Swales	Penrith City Council.	Penrith City Council.	Community Association
Lake Warning Signs and fences	Community Association	Community Association	Community Association

- (1) *The community facilities are defined as facilities for the use of proprietors and occupiers of the community scheme.*
- (2) *The Community property is defined as property owned and maintained by the community Association.*
- (3) *The Landscaping on the site is owned by different parties, yet all of it is maintained by the Community Association. The PCC owns the public roads medians, footpaths in public roads, roundabouts and woodland reserve. The Community Association owns all open space areas associated with the lakes and community property. While the Neighbourhood Association owns all neighbourhood property.*

3.2.1.5 Urban Structure and Staging

The Waterside Residential Master Plan establishes the urban structure for the planning and development of the subject land. The Plan is illustrated at Figure E3.5: Waterside Residential Masterplan.

Figure E3.5: Waterside Residential Master Plan



The following design principles underpinning the Master Plan must be addressed at subdivision stage:

- 1) Development will be located around the lakes system, community centre and open space areas which will provide focal points for the new community.
- 2) Housing type and density will be provided and located as indicated in Figure E3.8: Residential Densities.
- 3) The development is to deliver a broad range of dwelling types that have high levels of amenity and good access to on-site open space areas and facilities.

- 4) The area will be legible and accessible to the general public. It will incorporate a bus route, cycle routes and walking tracks as indicated in Figure E3.11 – Land Accessible to the Public.
- 5) Dense landscaping contained in setbacks and road reserves will separate the buildings in the Corporate and Residential zones.
- 6) The road layout will accord with Figure E3.10 – Road Hierarchy to minimise traffic movements, with the majority of residential traffic to access the site via Castlereagh Road.
- 7) The staging of the development within the R1 General Residential zone is proposed to generally progress southward and eastward towards the Laycock Street extension. This progressive delivery of the residential development is to accord with the recommendations of the approved Acoustic Strategy as adopted in Council's Meeting dated 8 March 2010.

3.2.1.6 Approval Process

- 1) A Concept Plan shall be submitted for Council's consideration prior to submission of specific applications for development. Separate Concept Plans for each zone may be submitted if, in the opinion of the Council, an appropriate and suitable interface between the zones is demonstrated.
- 2) Each Concept Plan will be reported to Council and, if adopted, will establish in more detail the character, density and built form for development in each zone.
- 3) Each Concept Plan shall demonstrate that the development will satisfy the quantitative and qualitative controls of this section, and shall include:
 - a) An indicative site plan for the lakes, floodway, waterways, development and subdivision (including a provisional staging plan), which provides sufficient detail to enable assessment against the provisions of the LEP and this section;
 - b) A plan of existing significant trees (identifying those which will be retained);
 - c) A plan for the management and maintenance of the water system, including any relevant documentary evidence of agreement/s with relevant authorities/bodies;
 - d) A report assessing the significance of identified Aboriginal sites (including those already known to exist) and a plan detailing the location of any Aboriginal sites;
 - e) A report assessing the significance of existing and potential heritage items, and a statement assessing the impact of the proposed development on those items, and the curtilage and vicinity of those items; and
 - f) An acoustic report in accordance with the provisions of Table E3.5: Acoustic Reports, which:
 - i) Identifies the noise environment of the subject land (including a plan of existing noise contours);
 - ii) Provides an assessment of the impact of external noise sources (in particular, industrial and traffic noise); and

- iii) Proposes acoustic measures to mitigate any noise impacts.
- 4) Any subsequent application for development shall include:
 - a) Details of the proposed development;
 - b) Detailed excavation plans for the relevant land, showing the location of all cut and fill works and finished ground levels;
 - c) An acoustic report detailing any necessary site-specific acoustic measures in accordance with the provisions of Table E3.5 – Acoustic Requirements;
 - d) Information which demonstrates the proposal complies with the relevant LEP and the provisions contained in this section (including any approved Concept Plan); and
 - e) A written description (and samples) of external materials and colours for proposed buildings, fencing, pavements, roads, landscape planting, and special treatments or features.

3.2.1.7 Specific information relating to the R1 General Residential and E2 Environmental Conservation zones

- 1) Master Plans have been submitted to Council for the Waterside Precinct for the subject lands. They were placed on public exhibition and adopted by Council as amendments to this Part.
- 2) Specific requirements for these zones are generally listed under separate headings, except where it was more appropriate to fully incorporate the specific requirements without the use of a separate heading.
- 3) Applications for development in the R1 General Residential and the E2 Environmental Conservation zones must generally comply with both the specific requirements listed for that area and the general provisions of this Section, where relevant.

3.2.1.8 Wetlands Protection

The area of the site north of Nepean Street is zoned E2 Environmental Conservation under the provisions of the Penrith LEP 2010. The wetlands area is also identified as 'Mapped Wetland 156' under the provisions of the *Sydney Region Environmental Plan No. 20 - Hawkesbury Nepean River*. Wetland 156 is mapped as a perennial wetland despite areas of the wetland being dry at various times of the year.

The wetlands cover a total area of approximately 8.2ha in three sections, fragmented by Nepean Street and an existing drainage channel. For the purposes of discussion, the three 3 fragmented areas of Wetland 156 are labelled as A, B and C (refer Figures E3.6 and E3.7). Wetland Area A is the largest, comprising approximately 7.5ha, or 91.5% of the overall area. Wetland Area A is located to the north of Nepean Street, and will not be disturbed. Wetland Areas B and C comprise the remaining 0.7ha, or 8.5%. These two areas are located within the proposed residential area and will be disturbed.

It is proposed to enlarge Area A by closing Nepean Street to through traffic; removing the carriageway of the closed section of Nepean Street; and extending Wetland Area A from the north of Nepean Street to the R1 General Residential zone. The rehabilitation will form one

large wetland rather than three fragmented parts (refer to Figure E3.7). The loss of wetland remnant Areas B and C will be compensated by the enlargement of wetland Area A and the construction of the lake system.

The development of the lake system, in conjunction with the rehabilitation of the wetland, will increase the amount of habitat available for native fauna by approximately 222m². The wetland rehabilitation will maintain and or potentially improve ecological biodiversity.

Figure E3.6 - Existing Conditions of Mapped Wetland 156

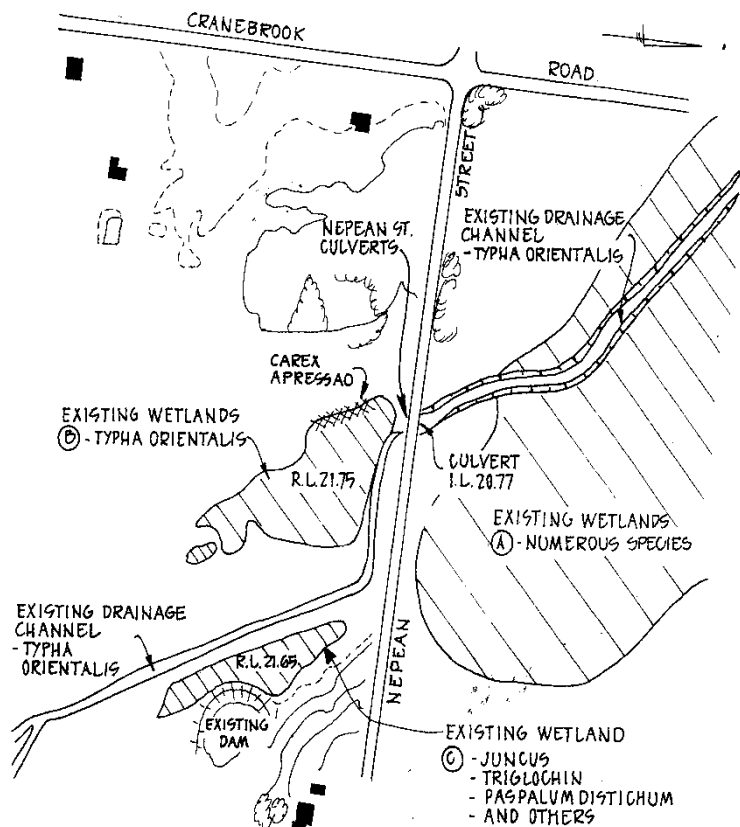
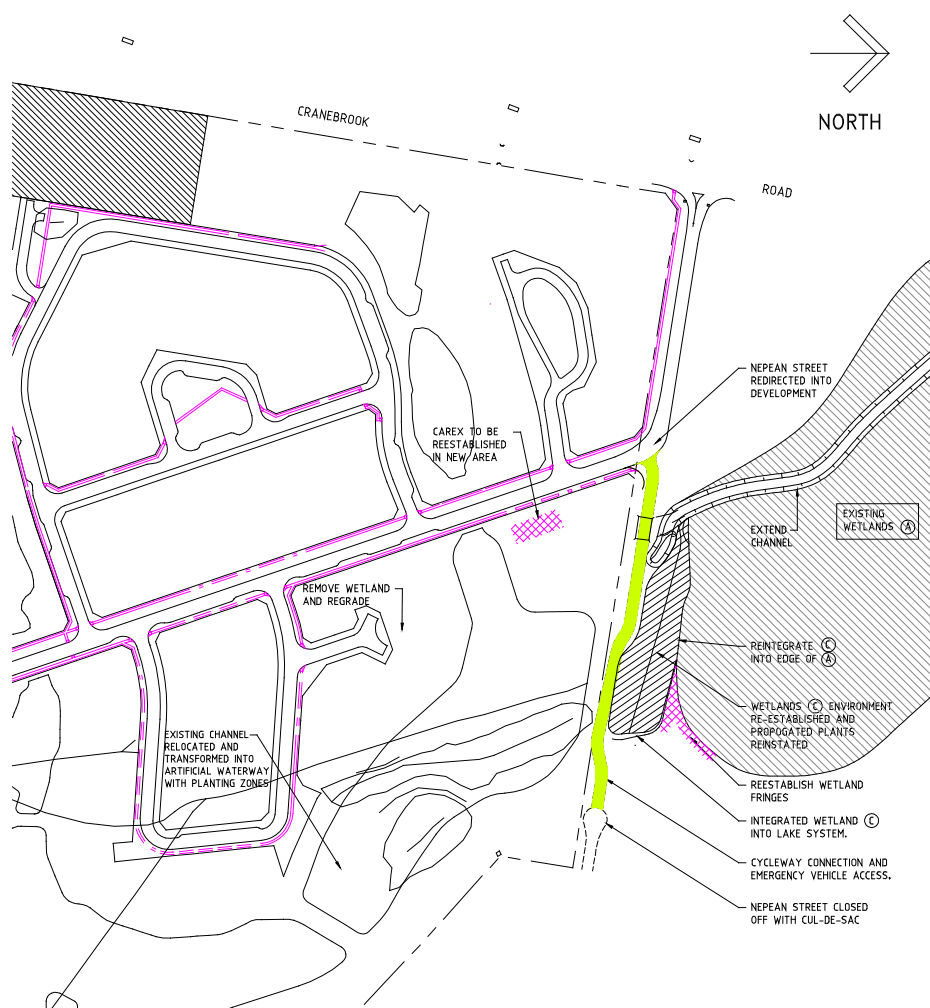


Figure E3.7: Proposed Wetlands Rehabilitation



3.2.1.9 Ownership and Management under the Community Scheme Legislation

The R1 General Residential zone will be subdivided under the community scheme legislation. This will enable the creation of individual lots under Torrens Title, Strata Schemes, and Community Property for the shared rights and responsibilities of the Community Association, and the dedication of land to the Council. It also ensures that the lakes system can be properly managed without unreasonable demands on Council resources.

Under the proposed system, the Community Association will be able to maintain and embellish publicly accessible land to a higher standard than is readily achievable with Council resources. The ongoing management and maintenance of the R1 General Residential zoned land will be the subject of a Community Management Statement. The E2 Environmental Conservation zone will not form part of the Community Scheme. This area will remain under separate title.

3.2.2 Development Requirements

The objectives and specific requirements for elements of any development of the subject land are detailed in the following sections.

3.2.2.1 Floodway, Drainage and Site Works

A. Objectives

General Objectives

- a) To encourage the enhancement of the natural characteristics of the land to provide opportunities for a unique community identity and special residential environment.
- b) To protect the environmental heritage of the area, whether it is of historic, aesthetic, architectural, archaeological, natural, cultural, Aboriginal or other significance.
- c) To maintain biodiversity by providing and increasing habitat for native fauna.

Floodway and Lake System Objectives

- a) To ensure no adverse impact from flooding is experienced upstream and downstream as a result of development of this land by the incorporation of a floodway into the lakes system,
- b) To ensure that development is appropriately protected from flood inundation.

Catchment Water Quality Objectives

- a) To ensure that an adequate and environmentally acceptable method of controlling surface water and storm water is implemented.
- b) To ensure appropriate water quality standards are maintained throughout the system and that post development water quality is an improvement on pre development water quality.
- c) To maintain adequate water quality levels throughout the lakes system at all times.
- d) To ensure that water quality standards are not compromised for the Lakes system.

Water Quantity Objectives

- a) To ensure adequate circulation and stable levels of water through the lake system and branch waterways.

Management of the Lakes System Objectives

- a) To ensure the maintenance of the water management system (floodway, lakes, lateral waterways and stormwater drainage) to appropriate design and environmental standards.
- b) To ensure the maintenance of the water management system to appropriate design and environmental standards.
- c) To encourage innovative design solutions to complement the management of water within the catchment,

Wetland Protection Objectives

- a) To maintain the quantity of water reaching the Nepean Street wetland.
- b) To ensure the retention and enhancement of the existing wetlands adjacent to Nepean Street.

Stormwater Drainage Objectives

- a) To make adequate provision for stormwater runoff in and through the estate.
- b) To ensure the drainage system adequately protects road pavements.
- c) To encourage use of water-permeable paving such as hollow blocks with gravel centres.

Earthworks Objectives

- a) To ensure appropriate erosion and sedimentation control of bulk earthworks construction.

Contaminated Land Objectives

- a) To ensure that any contaminated land found on the site is properly managed and remediated to a level appropriate for the subject development.

Aboriginal Cultural Heritage and Non-Aboriginal Heritage Objectives

- a) To appropriately manage the Aboriginal cultural heritage of Waterside.
- b) To protect and preserve items of local heritage significance.
- c) To ensure that identified items of local heritage significance are adequately recorded by archival means as part of this development, if demolition is deemed necessary.

B. Controls

1) Floodway and Lake System

- a) The floodway and lake system shall be located generally in accordance with this sections relevant map/s.
- b) The floodway/main lake system shall have a width no less than that determined by Council having considered both flood conveyance requirements and modelled pre/post development flood impacts/variances for the 1% AEP, 0.5% AEP and 0.2%AEP local catchment and Nepean River flood events.
- c) The lakes and lake foreshores (particularly the depth and grading) shall be designed to maximise safety.
- d) Additional habitats, including islands, shall be constructed in each of the major lakes generally as indicated on the E3.12: Key Design Elements (Waterside Residential) to provide a habitat for local flora and fauna.
- e) A recirculation system for the lakes shall be provided. The system must comprise components which will:

- i) Minimise the likelihood of stratification of lakes, if this is necessary due to lake depth;
- ii) Allow for full or partial draining of the lakes for maintenance purposes; and
- iii) Prevent the formation of habitat conducive to mosquito breeding.

2) Catchment Water Quality

- a) Water quality shall be improved and maintained by each proposed development.
- b) Adequate velocity and the controlled flow of water through the system shall be maintained at all times, to ensure the quality of the water and to reduce mosquito populations.
- c) Water quality shall be enhanced by trapping and removing all debris. Gross pollutant traps are to be provided where the floodway enters the property at the Andrews Rd boundary and where drainage from the south western corner of the public reserve enters the property at its eastern boundary.
- d) Macrophyte planting is to be provided around the perimeter of lakes edges to assist in the filtering of nutrients.
- e) The use of fertilisers and other sources of nutrients may adversely impact on water quality and shall be minimised.
- f) A process for monitoring the quality of discharges from this land is required to ensure system performance is maintained. This process, and agreed outcomes, shall be established through negotiation with the Penrith Lakes Development Corporation, Council and NSW Office of Environment and Heritage. The monitoring process shall include maintenance of nutrient levels, and shall be undertaken on a regular basis. Details of the program shall be submitted with development application/s for the construction of the lakes system.
- g) A management plan for the regular maintenance of the lakes system shall be established and enforced. This shall include regular mowing and maintenance of the verges, pruning, structural and operational maintenance of the system, dewatering and de-silting the lakes and ponds, and removal and replanting of the macrophytes as required.
- h) A draft management plan shall be submitted with development application/s for the construction of the lakes system.

3) Water Quantity

- a) A permanent water level shall be maintained within the lateral waterways.
- b) An internal pumping system must be installed to enable the pumping of water between lakes, and the maintenance of water quality.
- c) The pump system shall be enclosed, or provided with acoustic treatment or barriers, to ensure residents are not affected by the noise generated by its operation.
- d) Water levels in the Lakes and all laterals shall comply with the approved water management plan.

4) Management of the Lakes System

- a) Council shall not issue development consent for a proposal to subdivide or develop the site unless satisfactory arrangements have been made with the Council for the ongoing maintenance and management of the lakes system.
- b) As part of a development application submitted for construction of the lakes system, the following issues must be addressed:
 - i) A proposal which outlines the agreed responsibilities, of all relevant parties, for the ownership and management of the lakes system. Satisfactory arrangements regarding this matter must be achieved prior to granting development consent for construction of the lakes system or subdivision of land;
 - ii) Means of improving water quality compared with existing water quality (at the time of submission), and the proposed water quality monitoring regime;
 - iii) A Water Management Plan for the maintenance of the lakes system, including a schedule of proposed maintenance activities, annualized operational costs, and capital replacement costs. The Water Management Plan should also address:
 - The water quality and quantity discharge details, including expected changes in water quality and quantity to the existing system due to development (low flows, high flows, total over average rainfall year);
 - A plan for monitoring the quality of water discharge from the site;
 - The management of pollutants such as oils, grass clippings etc.;
 - The control of exotic flora and fauna;
 - Stormwater controls;
 - Groundwater effects (including any plans to draw from the groundwater for supply);
 - Sewer requirements (impact on existing sewer system and lake system);
 - Emergency controls;
 - The handling of water during the various stages of construction, as well as the final system (including site water management plan and sediment and erosion control measures);
 - The incorporation of water management facilities;
 - The process of handling contaminated fill, if required;
 - Wastewater re-use and its impact on outflow (quality and quantity); and
 - Internal pumping and the impact on outflow;
 - A Construction Management Plan in relation to leaching or deposition of materials into the lakes system and control of runoff; and

- A program for mosquito control and any other relevant matter identified in this section.

5) Wetland Protection

- An Environmental Impact Statement (EIS), in accordance with the provisions of the *Environmental Planning and Assessment Act 1979*, must be submitted for any works which will impact on Mapped Wetland No.156.
- The rehabilitation of Mapped Wetland No. 156 shall be generally be in accordance with the concept plan shown in Figure E3.7: Proposed Wetlands Rehabilitation, unless this is varied by the EIS process described above.
- Appropriate erosion and sedimentation control measures must be provided for any development in Waterside, to ensure no sediment from that development enters the wetland system.
- Plantings for the rehabilitated wetland area must be consistent with existing natural species to blend both natural and made elements.

6) Stormwater Drainage

- All components of the drainage system shall be designed to convey the 1% AEP flow. Pipe networks within roads shall convey the 20% AEP with the road carriageway containing additional flows up to the 1% AEP. Requirements set out in the subdivision section of this DCP must be complied with.
- Dispersed points of discharge to the waterway system (using roads, paths or open spaces) shall be provided. This may include a piped drainage system and grassed swales through open space areas.
- Ground waters shall be protected from the impacts of any surface waters.
- Innovative design solutions for stormwater management are encouraged. On-site stormwater detention, dual water supply and / or reuse shall be considered, and details provided for Council's consideration.
- Any proposed drainage system shall be designed to protect road pavements.
- The stormwater drainage system shall be designed to facilitate maintenance of footpath and road reserve areas.
- Roof and surface water not reused on each lot is to be discharged into the lake system in a controlled manner.
- All stormwater being discharged into the lake system is to be free of harmful pollutants, contaminants, grass litter and biodegradable matter.
- The stormwater system shall be designed and constructed in accordance with the requirements of the Engineering Works requirements in Appendix F3 – Submission Requirements of this DCP and the accompanying guidelines.

7) Earthworks

- a) All earthworks shall be undertaken in accordance with the NSW Government's "*Managing Urban Stormwater: Soils and Construction Manual*" (Volume 2A, January 2008) and shall minimise the potential for soil loss and pollution.
- b) Full details of soil erosion and sediment control measures shall be submitted with all subdivision or development applications which will involve soil disturbance.

8) Contaminated Land

- a) Geotechnique Pty Ltd. undertook a Preliminary Environmental Site Assessment in February 1999. The assessment involved:
 - i) A desktop study of all available information from the NSW Environmental Protection Authority, Lands Title Office and Land Information Centre;
 - ii) Review of soils and geological maps; and
 - iii) Site reconnaissance to identify the presence of potential contaminants.

The report concluded that the site should be suitable for the proposed development, subject to further contamination investigation and subsequent remediation, if required.

- b) A Stage 2 Environmental Site Assessment must be submitted to Council as part of any development application for bulk earthworks;
- c) Contaminated land must be remediated to an acceptable level prior to commencement of any earthworks in the affected area; and
- d) Remediation shall involve the treating and / or mitigating of the contaminants to the satisfaction of an EPA qualified auditor, and in accordance with Land Management section of this Plan).

9) Aboriginal Cultural Heritage

- a) A fully comprehensive archaeological survey of the subject land is to be undertaken to identify surface remains and areas of potential artefact bearing deposit.
- b) Archaeological and cultural sensitivity maps are to be prepared.
- c) A program of subsurface testing is to be undertaken in the areas of archaeological or cultural sensitivity or subsurface potential to determine the presence or absence of sites and their archaeological or cultural significance.
- d) If any sites are found, an Aboriginal Cultural Heritage Management Plan may be required.
- e) If an Aboriginal Cultural Heritage Management Plan is required, that plan must be submitted prior to commencement of construction of the lake system. Should it be deemed that any aspect of that construction will compromise any aboriginal cultural material, prior consultation with the National Parks and Wildlife Service and the Deerubbin Local Aboriginal Land Council (DLALC) is required.

- f) Proposed earthworks shall be assessed by members of the DLALC. Onsite monitoring by the DLALC during excavation in the vicinity of identified or potentially significant sites may be required.
- g) All Aboriginal cultural heritage assessment and archaeological investigation should be conducted in consultation with the DLALC.

3.2.2.2 Urban Design

A. Objectives

General Objectives

- a) To recognise the unique setting of the site, and to express Penrith's role as a regional city, in the development of essential design elements for buildings within the estate.
- b) To protect the environmental heritage of the area, whether it is of historic, aesthetic, architectural, archaeological, natural, cultural, Aboriginal or other significance.

Design Elements Objectives

- a) To encourage development which satisfies principles of Environmentally Sustainable Development.
- b) To enhance views through and across the subject land to Penrith Lakes, the Nepean River and the Blue Mountains.
- c) To achieve a range of housing forms and densities.
- d) To provide opportunities for visitor accommodation,
- e) To provide a level of development that complements and enhances the waterways system.
- f) To maintain adequate building envelopes to achieve appropriate levels of scale consistent with landscaping, the desired streetscape, and the desired future amenity.

External Materials and Finishes Objectives

- a) To ensure that external materials and finishes complement the landscaping and urban design of the development.
- b) To enhance the streetscape and roofscape through the use of a diverse range of materials and finishes.
- c) To encourage the use of high quality external materials and finishes.

Energy Efficiency Objective

- a) To promote energy efficient development and minimise the need for artificial lighting, heating or cooling.

Site and Building Works Objectives

- a) To ensure that development meets sound environmental planning practices and standards.
- b) To provide a satisfactory and appropriate level of landscaping.
- c) To ensure that the design and establishment of development, community facilities, open space and waterways is undertaken in an integrated fashion.
- d) To encourage the most effective, orderly and economic provision of service infrastructure for the area.
- e) To ensure that site facilities are effectively integrated into the development, and that they are contemporary, practical, attractive and easily maintained.

Advertising Objectives

- a) To prevent the proliferation of advertising signs.
- b) To allow signage and advertising which is complementary to the R1 General Residential built form, and does not detract from a high quality urban environment.

B. Specific Objectives for the R1 General Residential zone

- a) To provide a suitable interface between R1 General Residential and the E2 Environmental Conservation zones.
- b) To encourage the use of the open space areas by providing an interconnected pathway system through the entire estate.

Residential Diversity

- a) To deliver a broad range of dwelling types that have high levels of amenity and good access to on-site open space areas and facilities.

Building Envelopes

- a) To maintain views of Penrith Lakes, the Nepean River and the Blue Mountains for the residents of Cranebrook.
- b) To provide a variety of facades and external appearances, to create a distinctive image for the estate.

External Materials and Finishes Objectives

- a) To maximise the use of recycled materials, or components in which recycled materials have been used.

Privacy

- a) To ensure visual privacy between dwellings.
- b) To avoid overlooking of living spaces in buildings and private open spaces.

Energy Efficiency

- a) To minimise the need for artificial lighting, heating or cooling.
- b) To ensure reasonable access to sunlight for living spaces within buildings and open spaces around buildings.
- c) To encourage the siting, design and construction of dwellings that will receive the maximum benefit from solar energy and provide for energy conservation measures.
- d) To allow for active solar energy devices such as domestic water heaters and / or use of solar energy for all household power requirements,

Fencing

- a) To ensure fencing complements development style.
- b) To ensure fencing does not contribute to problems relating to safety and overlooking.

B. Controls

1) Design Elements

- a) The design and appearance of each building and/or development, particularly when viewed from the waterways, other public places and Cranebrook must be of a high standard which meets the design requirements of the section.
- b) The design of each building and/or development must satisfy ecologically sustainable design principles.
- c) An integrated design for lighting and signage is to be implemented throughout the estate.
- d) The wetlands at the northern end of the estate shall not be adversely affected by any development.

2) External Materials and Finishes

- a) The external finishes of all development are to be:
 - i) Durable, high quality, low maintenance materials.
 - ii) Compatible with the overall design and form of the estate.
 - iii) Considered in association with proposed planting and landscape treatment; and
 - iv) Considered in the context of their ability to mitigate acoustic impact.
- b) Roof materials shall not be highly glazed or reflective.
- c) Large areas of reflective materials will not be accepted.
- d) Fencing must integrate with the built form and landscape character, with a continuity and consistency to its design (form, material and colour).

3) Energy Efficiency

- a) Winter solar penetration should be maximised and summer solar penetration minimised.
- b) Natural ventilation opportunities should be maximised.

4) Site and Building Works

- a) All buildings on the site shall be designed and built such that their structural integrity can withstand flood flows generated by a flood equivalent to the Nepean River 'Flood of Record'- equating to the 0.5% AEP Flood Event. Damage potential is to be determined considering flood duration, flood depth and flow velocity such that buildings do not sustain structural damage or loss of load bearing capacity following immersion. Council will be guided by reference to available documentation provided in the 'Nepean Floodplain Management Strategy' in its determination as to whether flood compatible building design and material selection have been adequately considered. Appropriate modelling and mapping is to be undertaken to determine those areas of the site which when fully developed would present development characteristics where special flood compatible building design is required.
- b) All lots should have their finished surface at least 500mm above the 1% AEP flood level generated by local catchment or Nepean River flood flows, which ever generates the higher flood levels.
- c) Where finished ground levels are not 0.5m above the 1% AEP flood event level, dwellings shall be constructed with habitable floor levels a minimum of 0.5m above the flood level.
- d) Water quality, downstream of any proposed development, shall be improved and maintained throughout any construction and/or development works.
- e) Stormwater on each lot shall be captured and stored, where feasible, for future use in landscape maintenance.
- f) Recycling of stormwater for garden irrigation shall be implemented by the provision of on-site stormwater detention to standards specified by Council.
- g) Finished surface and ground levels shall fall to property boundaries and along roads to achieve adequate drainage.
- h) Soil erosion and sediment control measures shall be in accordance with the NSW Governments' *"Managing Urban Stormwater: Soils and Construction Manual 2004"* (Landcom, 2004). Details shall be submitted to Council with each development application.

5) Site Facilities

- a) Waste and recycling facilities are to be provided in accordance with the Waste Management Section of this Plan.
- b) A Waste Management Plan is required to be submitted with any development application for demolition, construction and or use of residential, commercial and industrial development.

6) Advertising

- a) All advertising is to comply with the advertising and signage requirements of this plan and be:
 - i) Constructed of high quality durable materials;
 - ii) Considered in conjunction with the design and construction of buildings; and
 - iii) Contained wholly within the site.
- b) Hoardings may be displayed during construction, subject to Council's approval, and must be removed upon completion of the relevant building/s.
- c) Real Estate signs may be displayed during periods of sale, providing the signs are located within the relevant property boundaries, and not located on footpaths and other pedestrian areas.
- d) The Community Association shall be responsible for the cleaning of any graffiti that occurs within the estate.

7) Residential Densities

- a) Development shall establish a range of housing densities and forms across the estate:
- b) Subdivision may be in the form of 'A' type lots, 'B' type lots, 'C' type lots, 'D' type lots and 'E' type lots (Refer to the Residential Development part of this Section).
- c) A mix of housing lots and types shall be generally consistent with the residential densities and lot layout shown in Figure E3.8: Residential Densities; and
 - i) The notional yield for each of the 'dwelling types' are outlined in Table E3.4 General Residential Design Elements.
- d) The location of the 'dwelling types' shall comply with the requirements of the section except where it can be demonstrated that:
 - i) the overall density of the proposed development parcel will still be achieved, and
 - ii) the proposed densities, range of lot sizes, and built form/designs still achieve the aims, objectives and requirements of the section.

8) Streetscape and Amenity

- a) A mixture of housing designs shall be provided, to create attractive and varied streetscapes.
- b) Dwellings adjoining pathways and access ways should be designed, through placement of living spaces and windows, in such a way that the public areas can be observed from the dwellings. This is to increase security and to encourage a sense of ownership by the occupants.
- c) Buildings, materials and fencing should be articulated and designed to integrate pathways and access ways. This is intended to increase security and create a sense of ownership.

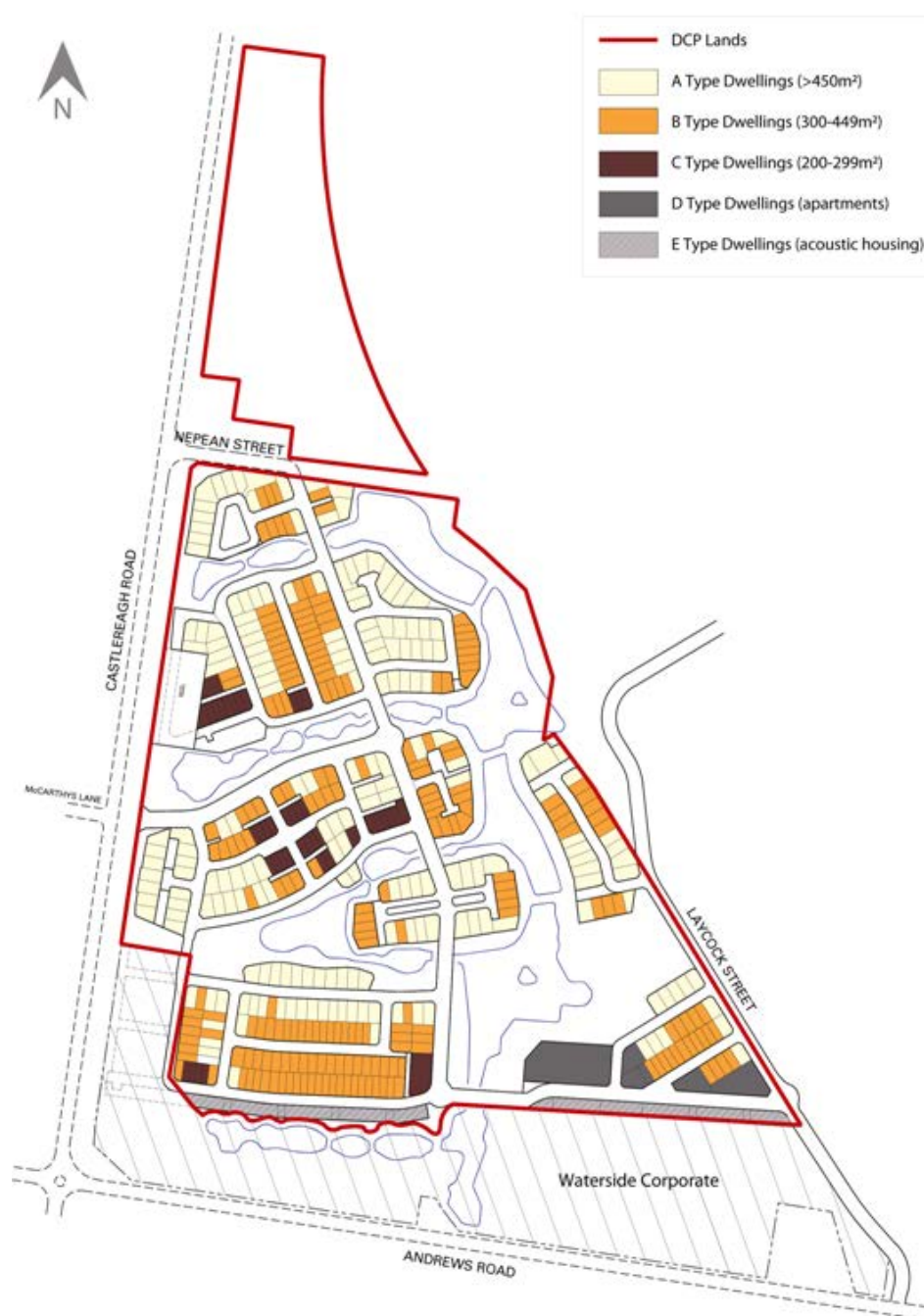
- d) Dwellings adjoining public open spaces, pathways and waterways shall be provided with outdoor spaces in which privacy can be ensured without obstructing the important public views.
- e) The streetscape, dwelling designs and site layouts should generally reflect the indicative concept site plans in Section 3.2.2.6.1 Dwelling Types.

Table E3.4: R1 General Residential Design Elements

Design Elements	'A' Type Dwellings	'B' Type Dwellings	'C' Type Dwellings	'D' Type Dwellings	'E' Type Dwellings
% of notional yield	34%	38%	7%	5%	16%

Note: Percentages based on yield, not developable area.

Figure E3.8: Residential Densities



9) Building Envelopes

- Variations in setbacks and building heights may be considered where they will not compromise the objectives of this section, and will contribute to a varied and attractive streetscape.
- Any changes in scale of 'D' type dwellings, adjacent to lower density residential housing, should reflect the change in both detailing and mass.

- c) Design and built form of 'D' Type dwellings are to be considered in accordance with relevant principles of *State Environmental Planning Policy 65 – Design Quality of Residential Flat Development*.
- d) 'E' type dwellings are to be designed to be groups of interconnecting dwellings made up of approximately 7 to 11 dwellings.
- e) Each group of 'E' type dwellings are collectively not to have site coverage of more than 60% of the total site area.
- f) Parking under buildings shall be considered to be a storey if it is more than 1.5m above finished ground level.
- g) Projections permitted into the setback areas include eaves, sun hoods, gutters, down pipes, flues, light fittings, electricity or gas meters. Any of these elements may project a maximum of 1.0m.

10) External Materials and Finishes

- a) Material selection must take into account the life cycle effect of their manufacture, use and disposal to minimise the effect on the environment. The following environmental factors shall be considered in such analysis:
 - i) environmental impact throughout their life cycle;
 - ii) energy use throughout their life cycle;
 - iii) carbon dioxide emission during manufacture, use and disposal;
 - iv) toxicity content and toxin production during manufacture, use and disposal;
 - v) reactive organic compound content;
 - vi) rare and non-renewable material content;
 - vii) potential for re-use or recycling;
 - viii) re-use or recycled material content;
 - ix) transport and distribution requirements;
 - x) thermal comfort;
 - xi) maintenance;
 - xii) durability; and
 - xiii) cost.
- b) No materials or construction techniques are to be used which may in some way leach or deposit pollutants into the ecological system of the lakes. A Construction Management Plan must be submitted to Council for approval prior to commencement of construction. The Construction Management Plan must address:
 - i) the type of the staging and timing of construction;

- ii) building materials used;
- iii) the measures to prevent any leaching or deposition of materials into the lake system;
- iv) the method of sorting waste for recycling, e.g. separation of metal, concrete and timber in individual containers prior to transportation from the site, and (v) control of stormwater runoff; and placement and storage of building related elements.

11) Privacy

- a) Visual privacy shall be achieved by:
 - i) using windows that are narrow, translucent or have distorted glass,
 - ii) ensuring windows do not face directly onto the windows, balconies or courtyards of adjoining dwellings, and
 - iii) screening opposing windows, balconies and courtyards.
- b) Windows, doors and balconies, particularly those above ground level, shall be designed or placed to minimize overlooking of neighbouring outdoor open spaces.

12) Energy Efficiency

- a) Any development or buildings for residential purposes shall:
 - i) Be designed to ensure that the northern facade of new dwellings, and 50% of their private and / or landscaped open space (including the main area), receive a minimum of 3 hours direct sunlight between the hours of 9am and 3pm on 21 June each year;
 - ii) Be designed and located to ensure that adjoining residential buildings and 50% of their private and / or landscaped open space (including the main area), receive a minimum of 3 hours direct sunlight between the hours of 9am and 3pm on 21 June each year;
 - iii) Include ceiling insulation to an equivalent thermal rating of at least R2.0 and wall insulation to an equivalent thermal rating of at least R1.5; and
 - iv) Include protection from the entry of summer sunlight by shading devices on external openings to habitable rooms.
- b) All dwellings shall be designed to achieve relevant BASIX requirements.

13) Site Facilities

- a) Outdoor clothes-drying areas for multiunit housing (other than for 'D' type dwellings) shall be provided in separate enclosures, to maximise security. These drying areas should be screened from the public view.
- b) A central reception aerial / master antenna shall be provided for any proposed development of more than two dwellings. Satellite dishes shall be screened from any public place. Details of any proposed aerial, antenna or dish shall be submitted with the development application.

- c) Dwellings are to be designed to accommodate home-based telecommunications facilities and information technologies, by allowing for:
 - i) Additional telephone lines and outlets;
 - ii) Additional electrical outlets; and
 - iii) Satellite or cable-based reception.

14) Fencing

- a) The type, style and design of the fencing must complement surrounding buildings and the landscape design.
- b) The following types of fencing are prohibited:
 - i) Colorbond; and
 - ii) Mesh wire fencing; and
 - iii) Chain link fencing.
- c) Fences bounding the edge of the lake system shall have a maximum height of 1.5m.
- d) Fences bounding pathways and access ways shall be no higher than 1.8m.
- e) Fencing and courtyard walls forward of the building line shall be a maximum of 1.2m, with exception of 'E' type dwellings.
- f) Side fences (to the rear of the building line) and rear fences shall not exceed 1.8m.

3.2.2.3 Acoustic Requirements

A. Objectives

General Objectives

- a) To ensure that development meets sound environmental planning practices and standards.
- b) To minimise any adverse impact, to residential development, of noise from traffic on adjacent roads and nearby industrial development.
- c) To ensure that the residential uses of this site do not restrict, by way of additional noise controls or requirements, future development or expansion of adjacent industrial activities.
- d) To ensure that the design of any acoustic measures contribute to the visual amenity of Waterside and are suitably integrated with the built form and landscaping of the site.

B. Specific Objectives for the R1 General Residential zone

- a) To facilitate residential development by requiring acoustic barriers along Castlereagh Road.
- b) To facilitate residential development by ensuring appropriate acoustic measures along Andrews Road.
- c) To require acoustic barriers that are aesthetically appealing.

Table E3.5: Acoustic Reports

Submission	Details
Acoustic Report with each Concept Plan	Proposed acoustic measures for the estate
Acoustic Report with each Development Application	Site-specific acoustic measures for each proposed development.
Certificate Of Compliance when the lake system and waterways have been completed.	Compliance required with outdoor noise criteria in residential areas.
Certificate Of Compliance when any relevant acoustic barrier/s or buildings have been completed.	Compliance required with outdoor noise criteria in affected areas prior to proceeding with residential development.
Certificate of Compliance prior to occupancy of each residential building.	Compliance required with internal noise criteria in affected areas.

B. Controls

1) Acoustic Requirements

- a) An acoustic report, prepared by an accredited acoustic consultant approved by Council, shall be submitted at each relevant stage of development, as specified in Table E3.5: Acoustic Requirements.
- b) A certificate of compliance, prepared by an accredited acoustic consultant approved by Council, shall be submitted at each relevant stage of development, as specified in Table E3.5: Acoustic Requirements.
- c) If Council considers that an acoustic report or certificate of compliance does not adequately address all relevant issues, or provide all relevant information, Council may require additional acoustic surveys to be undertaken or the submission of additional information.
- d) Noise attenuation measures along Andrews Road and Castlereagh Road shall be designed to be consistent with the landscape setting of the estate.
- e) Noise attenuation measures shall consist of a range of treatments such as (but not limited to) landscaped mounds, varied setbacks, appropriate building designs, acoustic treatments (such as double glazing) and acoustic barriers.

- f) Noise attenuation measures shall integrate with and complement the design and siting of the proposed residential development.
- g) Landscape planting in any acoustic measures shall comply with the Landscape Design section of this Plan.

2) Noise Measurement Criteria

- a) A minimum of 2 weeks' measurement of ambient noise levels, which provides a minimum of 150 valid data samples.
- b) A minimum of 1 week's measurement of traffic noise.
- c) A minimum of 2 weeks measurement of industrial noise, which provides a minimum of 150 valid data samples, for each of the specified time periods, being:
 - i) noon to 4.00pm (day time)
 - ii) midnight to 4.00am (night time).
- d) A minimum of 4 logger points, at the worst affected locations as specified by Council, within the Waterside site.
- e) A minimum of 2 logger points for control monitoring, at relevant locations specified by Council, outside the Waterside site (e.g. Graham Close and Echo Place).

3) Noise Prediction Criteria

- a) The acoustic report is to include, where relevant, predictions using a recognized calculation procedure, such as the Calculation of Road Traffic Noise (CORTN) or the FHWA method and the latest available annual average daily traffic volume figures supplied by the Roads and Maritime Services (RMS) or Council.
- b) The acoustic report is to recognise, where relevant, future traffic noise levels, given anticipated changes in usage.

4) Report & Certificate Information

- a) The following information, where relevant, shall be provided with each acoustic report or certificate:
 - i) Details of local topography, existing and proposed buildings, and exposed or shielded situations which may affect the results (*and any relevant allowances made*);
 - ii) Details of meteorological conditions during the periods of acoustic measurement;
 - iii) The measured noise levels for all noise sources in (2)(b), 2(c) and 2(d) above;
 - iv) The predicted traffic noise levels at specified locations, being the midpoint of each site boundary and, where relevant, 1m from the external facade walls of each floor of any building;
 - v) Details of outdoor noise levels relevant to the calculated interior noise levels for each building;

- vi) The sound insulation performance ratings of external facade walls in terms of individual components and composite construction (*test result data may be required*);
- vii) Plans and sections of the site detailing buildings, logger locations and other relevant details; and
- viii) A statement of opinion confirming compliance with the relevant acoustic criteria.

5) Acoustic Requirements – R1 General Residential zone

- a) Dwellings in the R1 General Residential zone shall not be occupied unless the indoor and outdoor noise levels comply with the provisions of the Waterside Clause in Penrith LEP 2010.
- b) Acoustic barriers shall be provided along the site's Castlereagh Road frontage. The acoustic barriers must be designed to achieve compliance with the provisions of the Waterside Clause in Penrith LEP 2010.
- c) The acoustic barriers may comprise a combination of earth mounding, timber, steel, bricks, concrete and transparent acrylic and may be integrated with residential development such as in the case of 'E' type dwellings.
- d) Dense landscaping shall be provided between the acoustic barriers and Castlereagh Road to maintain aesthetic appeal.
- e) Where the 'Building Interior Noise Criteria' outlined in the LEP are exceeded, after construction of the acoustic barrier along Castlereagh Road, additional sound-rated glazing for affected rooms may be required.
- f) An acoustic report, prepared by an accredited acoustic consultant approved by Council, shall be submitted with any development application for a dwelling, which verifies compliance with the relevant provisions of the Waterside Clause in Penrith LEP 2010.

3.2.2.4 Landscape Planting and Open Space

A. General Objectives

- a) To ensure that development meets sound environmental planning practices and standards.
- b) To enhance the landscape character of the area.
- c) To enhance the views through and across the subject land to Penrith Lakes, the Nepean River and the Blue Mountains.
- d) To ensure that the design and establishment of development, community facilities, open space and waterways is undertaken in an integrated fashion.
- e) To provide open spaces which are safe and inviting to use.
- f) To encourage the most effective, orderly and economic provision of service infrastructure for the area.

- g) To preserve the natural landscape where feasible and provide habitat for native fauna.
- h) To encourage planting of species appropriate to both the development and the locality.
- i) To retain significant trees wherever possible.
- j) To provide landscaping which screens and softens building mass and roof form, particularly when viewed from surrounding areas.
- k) To encourage the grouping of landscaped areas between adjoining development to consolidate open space areas and allow a greater density of tree planting.
- l) To encourage landscaping that is suitably integrated with acoustic treatment, particularly along the boundaries of the site.

B. Specific Objectives for the R1 General Industrial zone

Tree Preservation

- a) To preserve the natural landscape where feasible, and provide habitat for native fauna.

Landscaping

- a) To embellish the site through quality landscaping.
- b) To encourage the planting of species consistent with the overall estate development and surrounding locality.

Planting

- a) To encourage the planting of species consistent with the overall estate development and surrounding locality.
- b) To encourage the planting of trees that when mature are similar in scale to the specific developments.
- c) To provide screening where required and to 'soften' building masses through appropriate tree planting layout and species selection.
- d) To encourage the grouping of landscaped areas between adjoining developments to consolidate open space areas that allow a greater density of tree planting.

Landscaped Open Space

- a) To ensure that adequate landscaped open space is provided for residential development, and

Private Open Space

- a) To ensure that adequate private open space is provided for residential development.

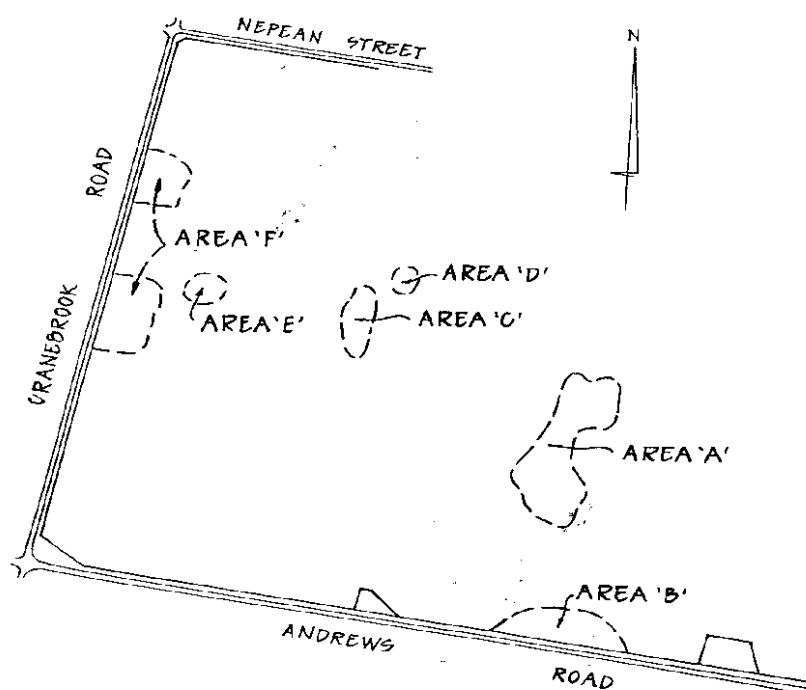
B. Controls

1) Design Elements

- a) Design of open space areas and buildings shall enhance existing views and create opportunities for additional views within and through Waterside.
- b) Dwellings shall face towards streets, open spaces, footpaths and cycleways to provide for visual surveillance of public spaces.
- c) A minimum 40m separation shall be provided between dwellings and/or other buildings on opposite edges of a lake or lateral waterway.
- d) Existing trees are to be preserved when possible, and supplemented by additional landscape planting.
- e) Pedestrian pathways and cycleways shall be linked to provide a safe, integrated and continuous pedestrian/cycle network around the lake system and within the development.
- f) Pathways must not be fenced from view, except where they are short straight paths between properties, with both ends visually open.
- g) Evergreen and flowering hedges are encouraged as a strong visual component of all streetscapes.
- h) Super-advanced tree planting shall be planted along all roadways, and fast-growing species are encouraged.
- i) Large canopy native trees which are common to this region, including those species currently present, shall be planted along the major roads and throughout the open space areas and shall consist of species such as:
 - i) *Casuarina cunninghamiana*
 - ii) *Casuarina glauca*
 - iii) *Eucalyptus amplifolia*
 - iv) *Eucalyptus moluccana*
 - v) *Eucalyptus tereticornis*
 - vi) *Melaleuca linariifolia*
 - vii) *Schinus areira*
- j) Planting along avenues, and feature planting in the open space areas shall consist of species such as:
 - i) *Acer negundo*
 - ii) *Celtis australi*
 - iii) *Gleditsia 'sunburst'*

- iv) *Lagerstroemia indica*
 - v) *Populus deltoids*
 - vi) *Populus yunnanensis*
- k) Landscape planting in shareways and access ways shall consist of small scale plantings such as:
- i) *Callistemon citrinus*
 - ii) *Callistemon viminalis*
 - iii) *Camellia sasanqua*
 - iv) *Lagerstroemia indica*
 - v) *Magnolia grandiflora*
 - vi) *Melaleuca linarifolia*
 - vii) *Melaleuca styphelioides*
 - viii) *Robinia psuedoacacia* "Frisia"
- l) Water edge treatment is subject to Council being satisfied that public safety and maintenance have been adequately addressed.

Figure E3.9 - Existing vegetation on site (Plan courtesy of Bowdens Group)



2) Tree Preservation

- a) The 7 factors in Section 5A of the *Environmental Planning and Assessment Act 1979* must be taken in account and be addressed in any development application that may impact on vegetation within mapped 'Area A' in Figure E3.9 Existing vegetation on site.
- b) A rehabilitation and management plan shall be prepared for the stand of trees mapped as Area A, which includes a requirement for the removal of the weeds that currently exist on the site, and to ensure its future use as a public reserve. A planting regime will be required in conjunction with a management regime to suppress further weed growth.
- c) Care should be taken to ensure that the Grey Box E. *Moluccana* is not affected or impacted upon by altering the existing hydrological processes in the course of earthworks or any other works.

3) Landscaping

- a) Plant species shall generally be chosen from the suggested species list provided in Table E3.6: Suggested Species List.
- b) The Castlereagh Road, Nepean Street and Laycock Street frontages are to be densely planted between the boundary alignment and the carriageway.
- c) Sydney Water and Integral Energy are to be consulted with regard to the location of landscape planting along Castlereagh Road, to prevent any conflict with service provision.
- d) No imported topsoil is to be used. All existing topsoil must be stockpiled and rehabilitated on the site.

4) Planting

- a) Landscape planting and built elements shall be used to provide internal privacy without obstructing views from dwellings.
- b) Property owners are encouraged to plant species from the suggested species list provided in Table E3.6: Suggested Species List in this Section.
- c) The planting of *Typha orientalis* - *Cumbungi* is prohibited due to the adverse impact that species has on waterway systems.
- d) 2m wide landscaped areas are to be provided between car parking aisles.
- e) In car parking areas, trees should be planted every 10 spaces in defined planting nibs a minimum of 2m wide.

5) Landscaped Open Space

- a) The following minimum landscaped open space requirements apply for each dwelling type:
 - i) A' type dwellings 50% of site area

- ii) B' type dwellings 40% of site area
 - iii) C' type dwellings 35% of site area
 - iv) D' type dwellings 35% of site area
 - v) E' type dwellings 20% of site area
- b) Any landscaped area having a dimension less than 2.0m shall not be included in the calculation of landscaped open space for A, B and C Type dwellings only.
 - c) Private open space is included in the calculation of landscaped open space.
 - d) Notwithstanding Control 5(a), where single story dwellings are proposed, the minimum landscaped open space requirements are as follows for A and B Type dwellings:
 - i) A' type dwellings 50% of site area (where allotments are >550m²)
 - ii) A' type dwellings 40% of site area (where allotments are 450-550m²)
 - iii) B' type dwellings 30% of site area

6) Private Open Space

- a) An area of usable private open space, at ground level as a garden or courtyard, or as a balcony, shall be provided for each dwelling
- b) 'A' 'B' 'C' and 'E' type dwellings are to have a minimum of 20% of the lot area allocated as private open space which is to include:
 - i) A principal area of 24m² with a minimum dimension of 4m, directly accessible from a major living area of the dwelling; and
 - ii) At least 65% of the private open space is to be unroofed soft landscaping excluding swimming pools and outdoor rooms.
- c) Upper storey 'E' type dwellings are to have a minimum of 20% of the lot area allocated as private open space which is to include a principal area of 24m² with a minimum dimension of 4m, directly accessible from a major living area of the dwelling.
- d) Private Open space for 'D' type dwellings is to be determined by design.
- e) The principal area of private open space shall be located to:
 - i) have direct access from the living room(s),
 - ii) to receive at least 3 hours of sunlight between 9am – 3pm on June 21 each year,
 - iii) maximise privacy for the residents and neighbours, and
 - iv) minimise overshadowing from adjoining properties.
- f) Private open space can be made up of more than 1 courtyard provided that 1 area has a minimum area of 24m² and a minimum width of 4.0m.

- g) Where the siting and location of 'D' type dwellings prevents adequate solar access to private open space, an alternative building design providing private open space in the form of roof terraces, may be considered.

Table E3.6 - Suggested Species List

Native Trees	
Angophora floribunda	Rough-barked Apple
Casuarina cunninghamiana	River Oak
Casuarina glauca	Swamp Oak
Eucalyptus amplifolia	Cabbage Gum
Eucalyptus crebra	Narrow-leaved Ironbark
Eucalyptus elata	Peppermint
Eucalyptus globoidea	White Stringybark
Eucalyptus maculata	Spotted Gum
Eucalyptus moluccana	Grey Box
Eucalyptus sideroxylon	Pink Flowered Iron Bark
Eucalyptus tereticornus	Forest Red Gum
Ficus hillii	Hills Weeping Fig
Lophostemon confertus	Brush Box
Melaleuca decora	Paperbark
Melaleuca linariifolia	Snow in Summer
Melaleuca quinquenervia	Broad-leaved Paperbark
Melaleuca styphelioides	Prickly-leaved Paperbark
Tristaniopsis laurina	Water Gum
Native Shrubs	
Acacia implexa	Hickory
Acacia decurrens	Sydney Green Wattle
Acacia parramattensis	Parramatta Green Wattle
Callistemon sp.	Bottle Brush
Daviesia ulicifolia	Gorse Bitter-pea

Dillwynia juniperina	Prickly Parrot-pea
Dodonaea viscosa purpurea	Hop Bush
Grevillea 'Honey Gem'	Grevillea
Indigofera australis	Native Indigo
Native Aquatic Plants	
Carex appressa	Tall Sedge
Cyperus gunnii	Spike
Elaeocharis acuta	Rush
Elaeocharis sphacelata	Common Rush
Juncus usitatus	Tassel Cord-rush
Resteo tetraphyllus	
Scirpus validus	
Exotic Street Trees	
Fraxinus oxycarpa	Claret Ash
Gleditsia "Sunburst"	Honey Locust
Lagerstroemia indica	Crepe Myrtle
Pistacia chinensis	Chinese Pistacia
Prunus sp	Cherry
Sapium sebiferum	Chinese Tallowood
Ulmus parvifolia	Chinese Elm
Zelkova serrata	Japanese Elm
Grasses and Accents	
Agrostis avenacea	Blown Grass
Cymbopogan refractus	Barbed Wire Grass
Carex appressa	Tussock Sedge
Cyperus exaltatus	Tall Flat-sedge
Cyperus polystachyos	

Dianella revoluta	Spreading Flax Lily
Danthonia sp	Wallaby Grass
Dichelachne micrantha	Short-hair Plume Grass
Echinopogon caespitosus	Tufted Hedgehog Grass
Eragrostis elongata	Lavender Grass
Gahnia sieberiana	Red-fruited Saw-sedge
Hemarthrix uncinata	Matgrass
Lomandra longifolia	Spiny-headed Mat-rush
Microlaena stipoides var stipoides	Weeping meadow Grass
Phragmites australis	Common Reed
Poa labillardieri Eskdale	Tussock Grass
Themeda australis	Kangaroo Grass

3.2.2.5 Roads and Car parking

A. Objectives

General Objectives

- a) To ensure the road network is designed and constructed to provide long term performance with minimal maintenance.
- b) To ensure that development meets sound environmental planning practices and standards.
- c) To ensure a safe and efficient internal road system, and a safe and secure environment for pedestrians and cyclists.
- d) To prevent direct vehicular access to or from any development from designated roads (Castlereagh Road).
- e) To ensure the provision of safe, convenient and attractive car parking areas throughout the estate for the use of residents and visitors.
- f) To encourage the most effective, orderly and economic provision of service infrastructure for the area.
- g) To provide distinct, functional and attractive entrances to the development.
- h) To avoid disruptions to through traffic travelling along Castlereagh and Andrews Roads.
- i) To clearly define road hierarchies through effective planting.

- j) To provide convenient and functional public transport routes.
- k) To ensure that adequate on-site parking is provided to meet the needs of each development.
- l) To ensure parking area layout enhances the function and appearance of the development.
- m) To screen parking areas from public view.
- n) To ensure that underground parking entrances and loading docks do not dominate building facades and do not detract from the streetscape.

Road Network Objectives

- a) To provide distinct, functional and attractive entrances to the site.
- b) To avoid disruptions to through traffic travelling on the main thoroughfares of Castlereagh Road and Andrews Road.
- c) To delineate road hierarchies through effective road planting.
- d) To provide convenient, safe and publicly accessible bicycle/pedestrian paths.
- e) To provide convenient and functional public transport routes.

On-Site Parking and Pedestrian Access Objectives

- a) To ensure each development provides adequate parking on site to accommodate all parking demands generated by the development.
- b) To encourage the development of a parking layout which enhances the function and appearance of the development.
- c) To ensure that garage doors and entrances to underground car parking areas do not dominate building facades and do not detract from the desired streetscape.
- d) To ensure safe and functional pedestrian movement.

B. Controls

1) Road Network and Design

- a) All roads shall be generally designed and constructed in accordance with the road widths outlined in the Transport, Access and Parking Section of this Plan and the Road Hierarchy shown at Figure E3.10 – Road Hierarchy.
- b) The significant entries to the estate shall be located generally in accordance with Figure E3.12: Key Design Elements (Waterside Residential).
- c) All roads into and within the estate shall be landscaped with super-advanced trees and plants.
- d) Roads within the estate shall be constructed above the 1% AEP flood level.

- e) Direct vehicular access from any designated road shall not be permitted, other than access for existing dwellings, or access via the defined entries to the estate.
- f) Access for developments, from Castlereagh Road or the 'Entry Avenue' off Laycock Street, shall only be permitted via an approved road. Individual driveways for site-specific developments will not be permitted.
- g) Roads within the estate shall be designed to minimise traffic speeds, maximise traffic and pedestrian safety and provide visual reinforcement for different functions by the use of a variety of surface materials and colours.
- h) Roundabouts shall be constructed to specifications, and at locations, to be determined by Council. Specifically roundabouts or similar control mechanisms will be required at the intersections of:
 - i) McCarthy's Lane and Castlereagh Road.
 - ii) Andrews Road and Laycock Street.
- i) All roads are to be sign posted at their design speed.
- j) On completion of the Laycock Street extension, Nepean Street shall be closed and rehabilitated.
- k) Bus bays/shelters are to be provided to specifications, and at locations, to be determined by Council.
- l) The bus shelters must be constructed from high quality materials and designed to complement the surrounding streetscape.
- m) Traffic calming devices shall be provided to specifications, and at locations, to be determined by Council.
- n) An evacuation plan for the residents and visitors of the estate shall be developed in conjunction with the State Emergency Service. Details of this plan shall be submitted to Council prior to occupation of any residential development.

2) Pedestrian / Cycleway Network

- a) Publicly accessible bicycle / pedestrian paths are to be provided in the locations shown on the map at Figure E3.11: Land Accessible to the Public.
- b) A physical barrier and median strip refuge must be provided where the bicycle / pedestrian paths intersect with a roadway.
- c) Parking areas are to be designed to minimise vehicular / pedestrian conflict. A pedestrian pathway connection between the car parking areas and the building access points shall be provided.

Figure E3.10 – Road Hierarchy

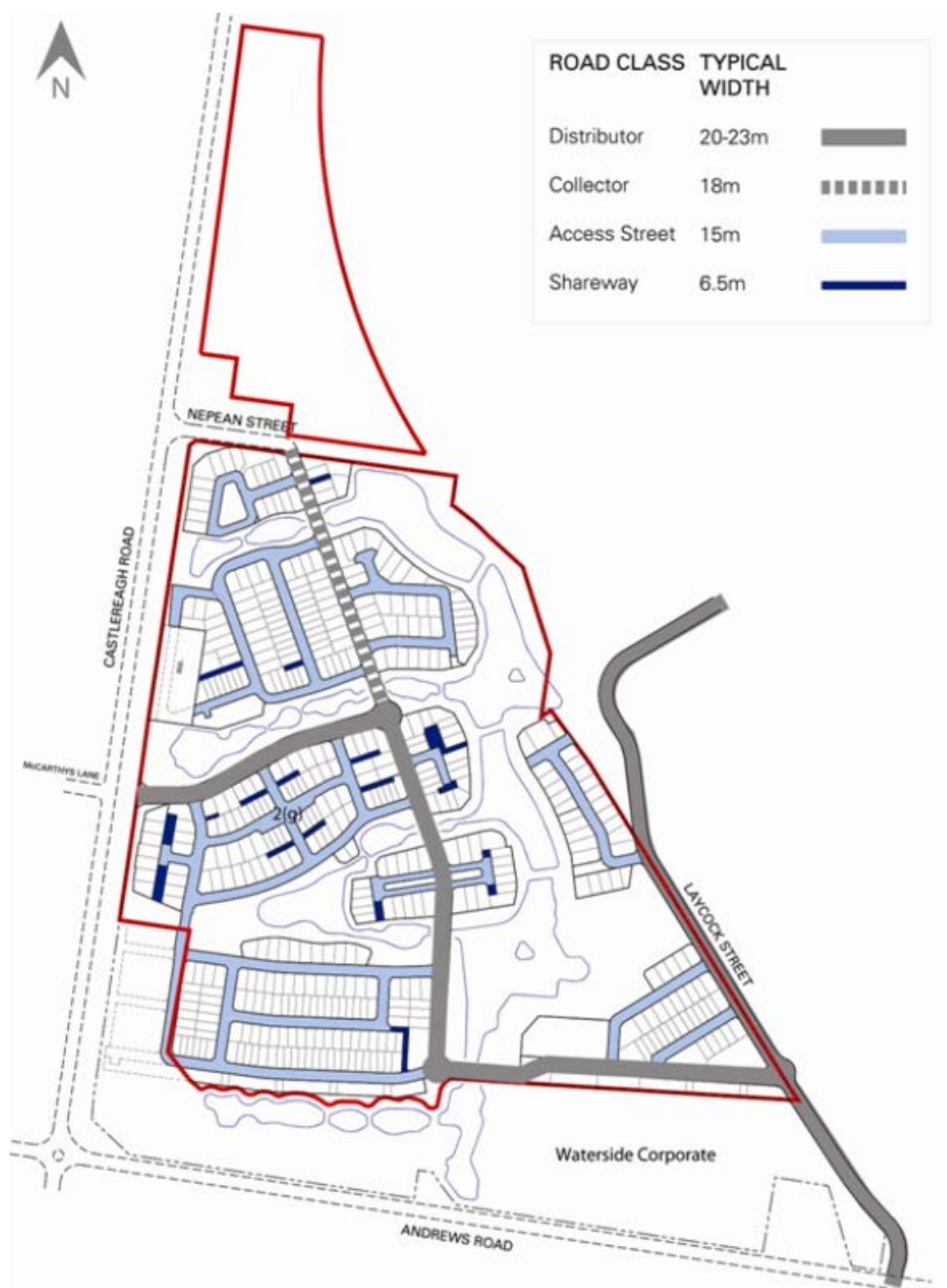


Figure E3.11 – Land Accessible to the Public



3) Garage Requirements

- a) Garages must not dominate the streetscape.
- b) Where an access way is provided to a lot, garages are to be at the rear of the site.
- c) Where there are no access ways, garages should be carefully integrated with the built form of the dwelling.
- d) Garages facing rear access ways should be positioned to create a private open space for the dwelling while allowing for views from the dwelling to the access way.
- e) To maintain access way security, habitable rooms over garages are encouraged.

Figure E3.12: Key Design Elements (Waterside Residential)



3.2.2.6 Residential Development

This Part provides more detail objectives and performance criteria for a variety of typical development forms.

A. Objectives

Residential development in Waterside shall be designed to:

- a) Provide specific controls for residential development in Waterside.
- b) Be compatible in scale with the mass and character of adjacent building types.
- c) To ensure development is appropriately scaled to suit the dwelling's local context.

3.2.2.6.1 Dwelling Types

The dwelling types which reflect the controls in the next section are described as follows:

'A' type Dwelling – Custom House Lots

Lots 450m² or greater, sold as land upon which housing, constructed by any builder, may be constructed provided the design complies with this section and any adopted Design Guidelines. The house will generally be detached, in single or two storey form. Lot modules are *generally* a 15m or greater frontage and a 30m or greater depth.

Figure E3.13: Type 'A' Dwelling example

TYPE A DWELLING



'B' type Dwelling – Designer Lots

Lots 300m² or greater, but less than 450m², sold as land to the public, upon which, housing, constructed by one of only three pre-selected builders, using pre-approved designs (complying with this section and any adopted Design Guidelines) may only be constructed. The house may be either attached or detached, single, part single and part two storey (to avoid overshadowing of solar courts) or two storeys. Lot modules are *generally* 10m x 30m (with zero lot line) or 12.5m x 30m. Garages may be on the lot boundary.

Figure E4.14: Type 'B' dwelling example (1)

TYPE B DWELLING



Figure E3.15: Type 'B' dwelling example (2)

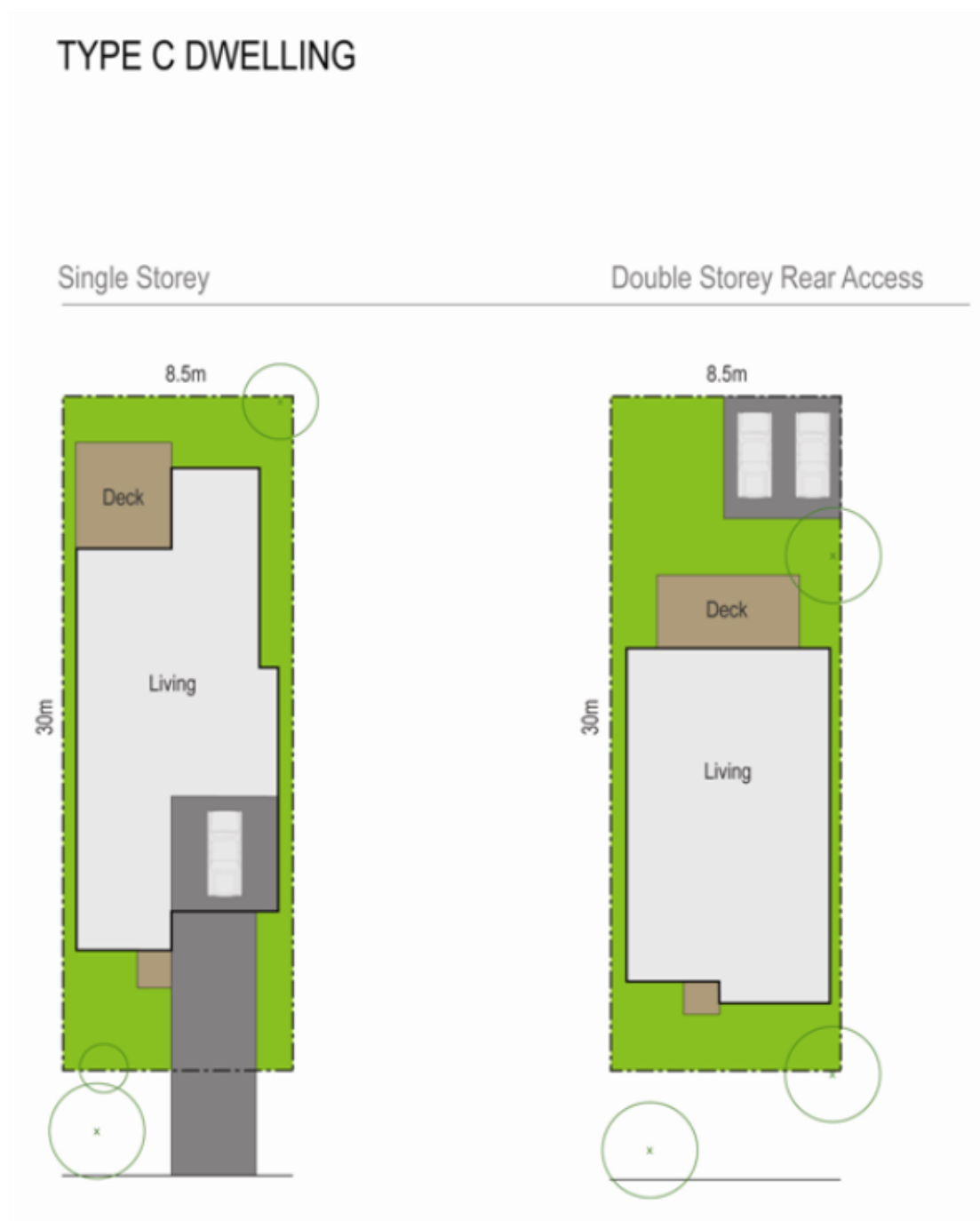
TYPE B DWELLING



'C' type Dwelling – Terrace & Courtyard Lots

Lots 200m² or greater, but less than 300m², which have had the final house design submitted and approved at the subdivision stage. The house will be either attached (i.e. one of two terraces) or detached on a zero lot line with a courtyard.

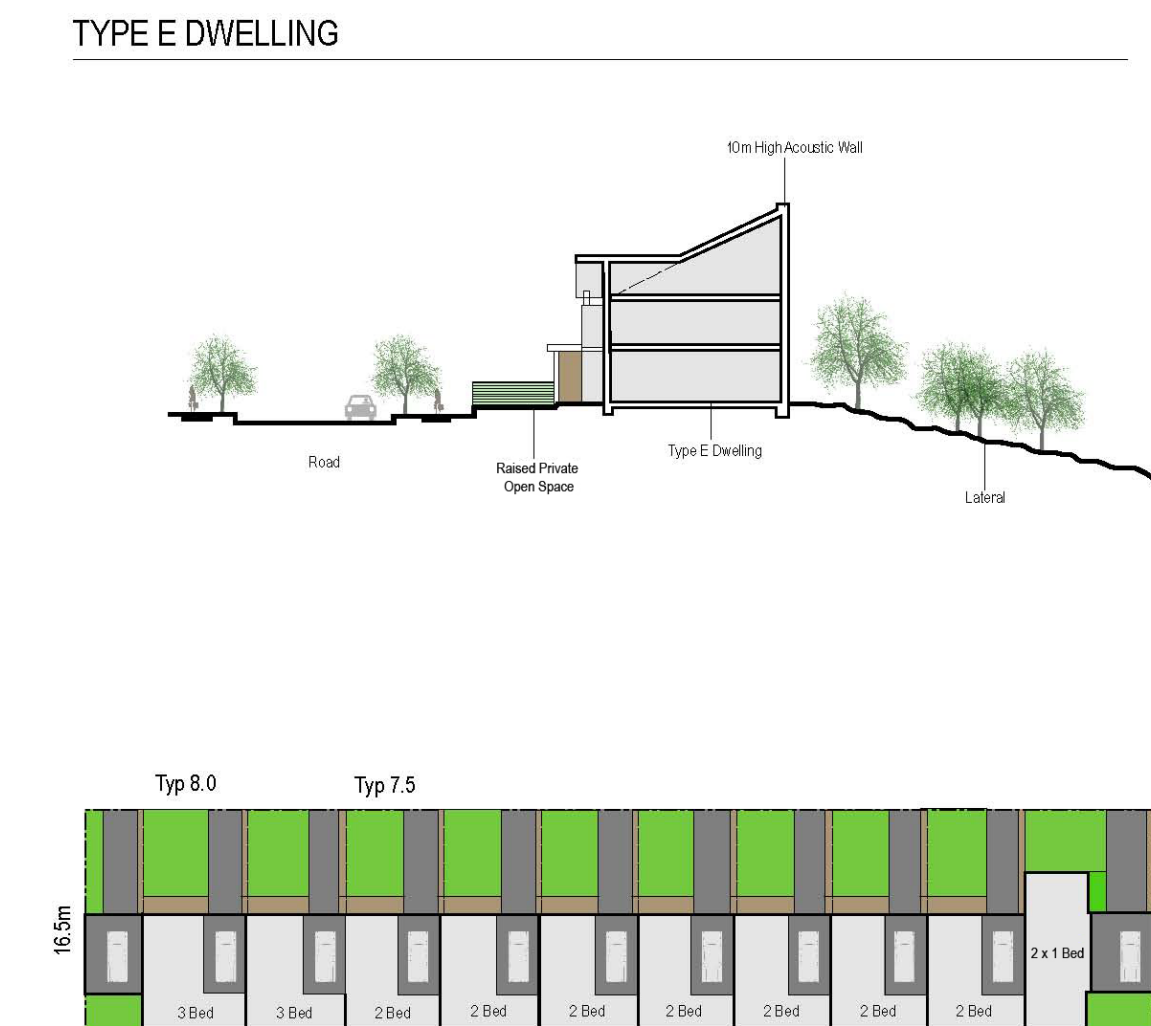
Figure E3.16: Type 'C' dwelling example



‘D’ type Dwelling means three (3) storey multi-unit housing.

‘E’ type Dwelling - these dwellings are designed to provide acoustic attenuation for parts of the R1 General Residential zoned land to ensure compliance with the Waterside Clause of Penrith LEP 2010. They are to be constructed as interconnected terraces comprising of two to three storeys with single garages. Each dwelling is to be integrated into the design of an acoustic wall, which will form the rear wall of the dwellings and will not have any openings. A principle private open space area for each dwelling is to be located to the front of the dwelling, which is to be sufficiently separated from the adjacent street and ensures adequate privacy for occupants. These dwellings may be Torrens or Strata titled.

Figure E3.17: Type ‘E’ dwelling example



3.2.2.6.2 Residential Development Controls

Design Element	'A' Type Dwellings	'B' Type Dwellings	'C' Type Dwellings	'D' Type Dwellings	'E' Type Dwellings
Height (max)	2 storeys	2 Storeys	2 Storeys	3 Storeys	3 Storeys
Front Setback (min)	4.5m	4.5m	3.5m	4.5m setback or see State Government's "Residential Flat Design Code" for guidance	4.5m
Front setback – Porches and verandahs (min)	3m	3m	2.5m		2.5m
Side Setbacks (min)	0.9m	0m on one side, single storey only	0m on one side, single storey only	Refer to State Government's "Residential Flat Design Code" for guidance	0m on both sides
	2.5m to secondary street for corner lots	0.9m alternate side and for upper floor	0.9m alternate side and for upper floor		2.5m to secondary street for corner lots
		2.5m to secondary street for corner lots	2.5m to secondary street for corner lots		
Rear Setbacks (min)	4m for single storey	4m for single storey	4m for single storey	Refer to State Government's "Residential Flat Design Code" for guidance	0m
	6m for upper floor	6m for upper floors (2m incursion for 20%)	6m for upper floors (2m incursion for 20%)		
		0m for rear garage	0m for rear garage		
Landscaped Open Space Area (min)	50% of site area	40% of site area	30% of site area	35% of site area	20% of site area
Landscaped Open Space – Single Storey Dwellings (min)	40% of site area where lot is < 550m ²	30% of site area	30% of site area	N/A	N/A

Design Element	'A' Type Dwellings	'B' Type Dwellings	'C' Type Dwellings	'D' Type Dwellings	'E' Type Dwellings
Private Open Space Area (min)	20% of lot area	20% of lot area	20% of lot area	Refer to State Government's <i>"Residential Flat Design Code"</i> for guidance	20% of lot area, or an area of 24m ² for upper floor dwellings

Table of Contents

<u>PART B – CRANEBROOK NEIGHBOURHOOD CENTRE</u>	68
3.3. COMMUNITY LAND / GROUP NEIGHBOURHOOD CENTRE CRANEBROOK	68

Part B – Cranebrook Neighbourhood Centre

3.3 Community Land / Group Neighbourhood Centre Cranebrook

- 1) Development in the Cranebrook Neighbourhood Centre, as shown in Figure E3.18, should be consistent with Figure E3.18 below.

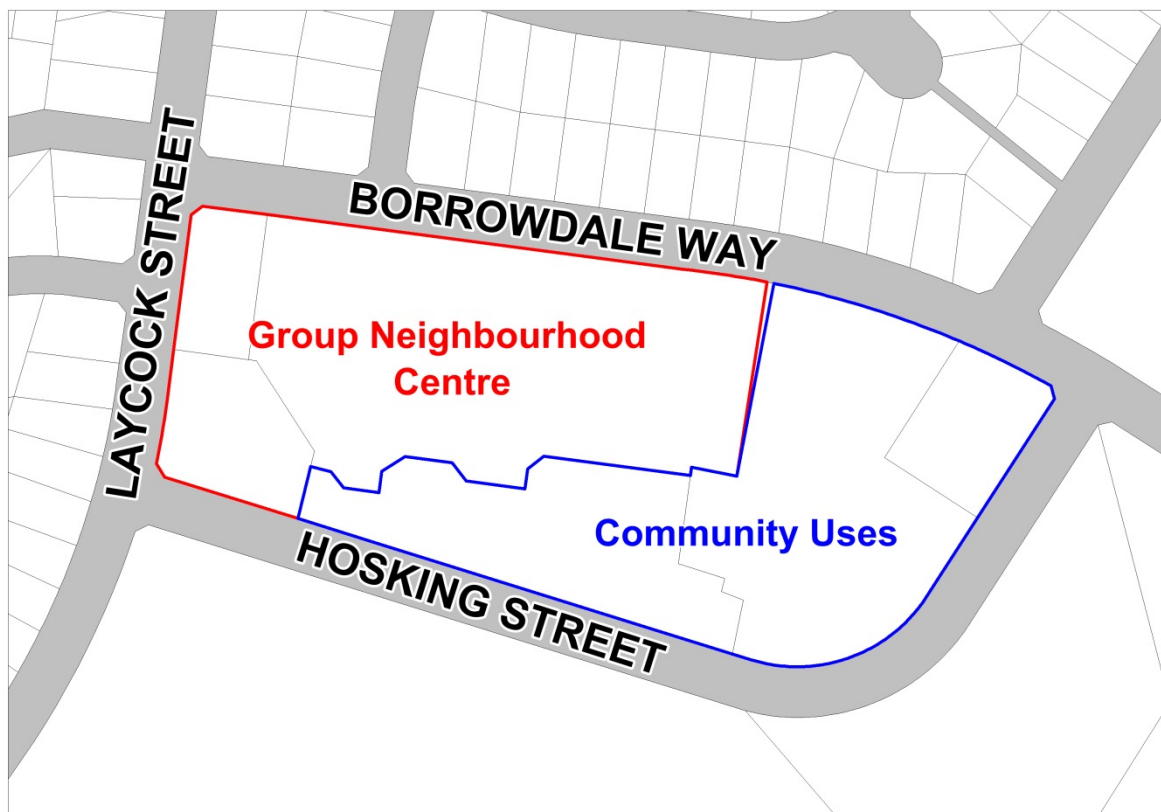


Figure E3.18: Cranebrook Community Land/Group Neighbourhood Centre

TABLE OF CONTENTS

PART C CRANEBOOK RURAL RESIDENTIAL DEVELOPMENT	70
3.4 CRANEBOOK RURAL RESIDENTIAL DEVELOPMENT	70
3.4.1 INTRODUCTION	70
3.4.1.1 LAND TO WHICH THIS PART APPLIES	70
3.4.1.2 GENERAL OBJECTIVES	70
3.4.2 SPECIFIC OBJECTIVES AND POLICIES	71
3.4.2.1 ACCESS AND ROADS	71
3.4.2.2 SUBDIVISION AND LAYOUT	76
3.4.2.3 BUILT STRUCTURES	77
3.4.2.4 LANDSCAPE	82
3.4.2.5 COMMUNITY FACILITIES	82
3.4.2.6 SERVICES	82
3.4.2.6.1 WATER SUPPLY/EFFLUENT DISPOSAL	83
3.4.2.6.2 DRAINAGE	83
3.4.3 MAPS	83

3.4.2 Specific Objectives and Policies

3.4.2.1 Access and Roads

Rural residential development in Cranebrook will necessitate the construction of new roads, and result in an increase in traffic using existing roads.

A. Objectives

- a) To preserve the rural character and streetscape of existing roads in the area;
- b) To encourage a standard of road design for new roads which:
 - i) Complements the rural character and streetscape of existing roads in the area; and
 - ii) Reflects the function of the road.
- c) To minimise encroachment of urban area traffic, and particularly to the denial of through-vehicular access from the residential release area to Linden Crescent;
- d) To encourage the provision of internal roads;
- e) To make provision for upgrading existing roads;
- f) To encourage the shared use of roads and road reserves by pedestrians and cyclists;
- g) To encourage identity for the rural community
- h) To enhance opportunities for further subdivision if required in the future; and
- i) To encourage direct road access and the minimisation of battle-axe lots; as found in traditional rural subdivision and development.

B. Controls

- 1) The road reservation requirements in this Section override those outlined in the Transport, Access and Parking section of this Plan where they are inconsistent.
- 2) All new roads and access ways are to be constructed to the following requirements:
 - a) Road reservation – 20m;
 - b) Road construction – 6m centre seal, to be constructed in accordance with Council's standard for rural roads;
 - c) Grass table drains to be provided in all circumstances, except for steep areas where concrete drainage will be required;
 - d) One way cross falls may be considered in appropriate circumstances; and
 - e) Battle axe access – 20m, to provide for road reservation potential with 3m sealed driveway.
- 3) Council may agree to a narrower road reservation where the Developer can satisfactorily demonstrate that:
 - a) The objectives of the Local Environmental Plan and this DCP can still be achieved;
 - b) All services can be adequately accommodated within the road reservation, together with landscaping;
 - c) Rural style fencing is provided; and
 - d) The engineering requirements can be satisfied.

- 4) All roads and accessways should complement the rural character and streetscape of the existing streets in the area;
- 5) A low density of development is maintained along the Vincent Street frontage;
- 6) No through vehicular access shall be permitted between the Cranebrook residential release and Linden Crescent;
- 7) On-street parking is discouraged. Parking demand from new development should be accommodated on-site;
- 8) All new roads should be designed for low traffic volumes. Road reservation treatments should provide for safe access by pedestrians and cyclists;
- 9) A programme of landscaping and street planting will be undertaken along;
 - a) Existing roads; and
 - b) Proposed roads.
- 10) Landscaped threshold treatment should be given at the entrance to all new roads;
- 11) All access roads and driveways should follow the natural contours where possible;
- 12) Existing sealed roads in the area may need to be upgraded in some areas to satisfy the likely traffic increases. This may be achieved by:
 - a) Section 94 contributions, where the total cost of significant works is divided proportionately by the number of new lots to be created; or
 - b) Conditions of development consent, where each subdivision provides for specialised work adjacent to their property.
- 13) The following figures (Figures E3.21 – E3.26) show some road concepts, access layout and landscaping.
- 14) In general, subdivision should provide public road frontage to new lots. Battle-axe frontage for new lots is discouraged.

Figure E3.20: Roadside Treatment and Layout on Slope

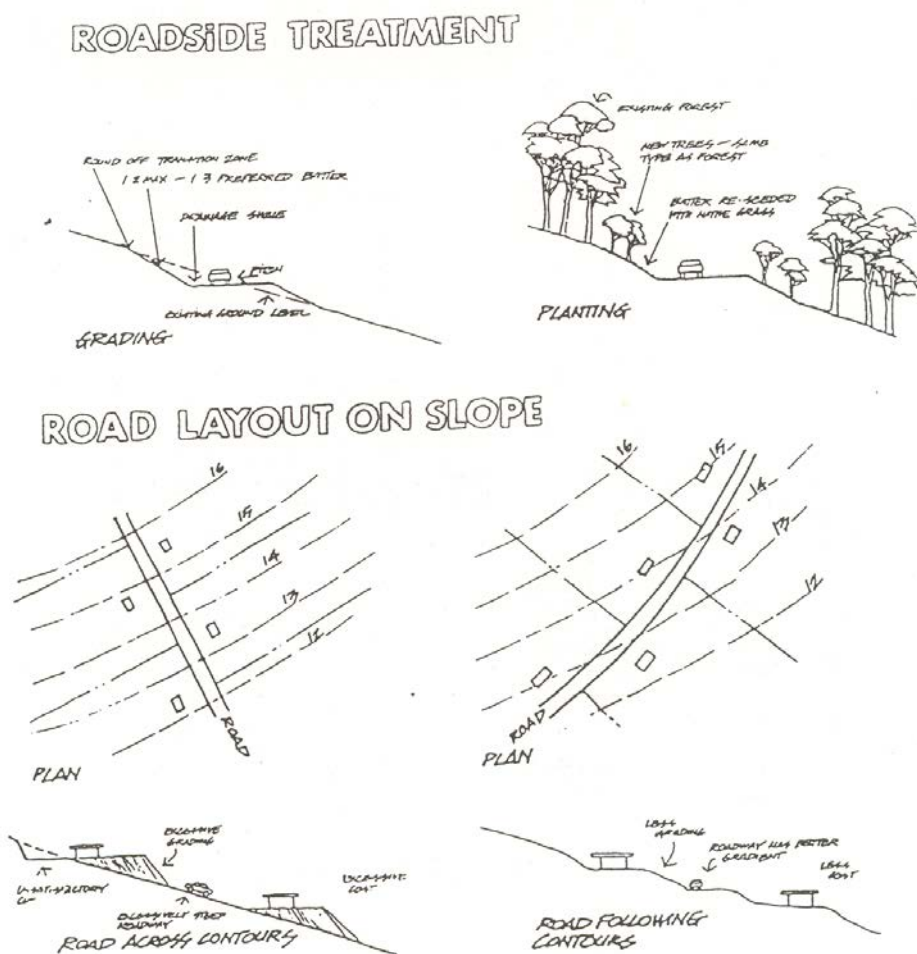
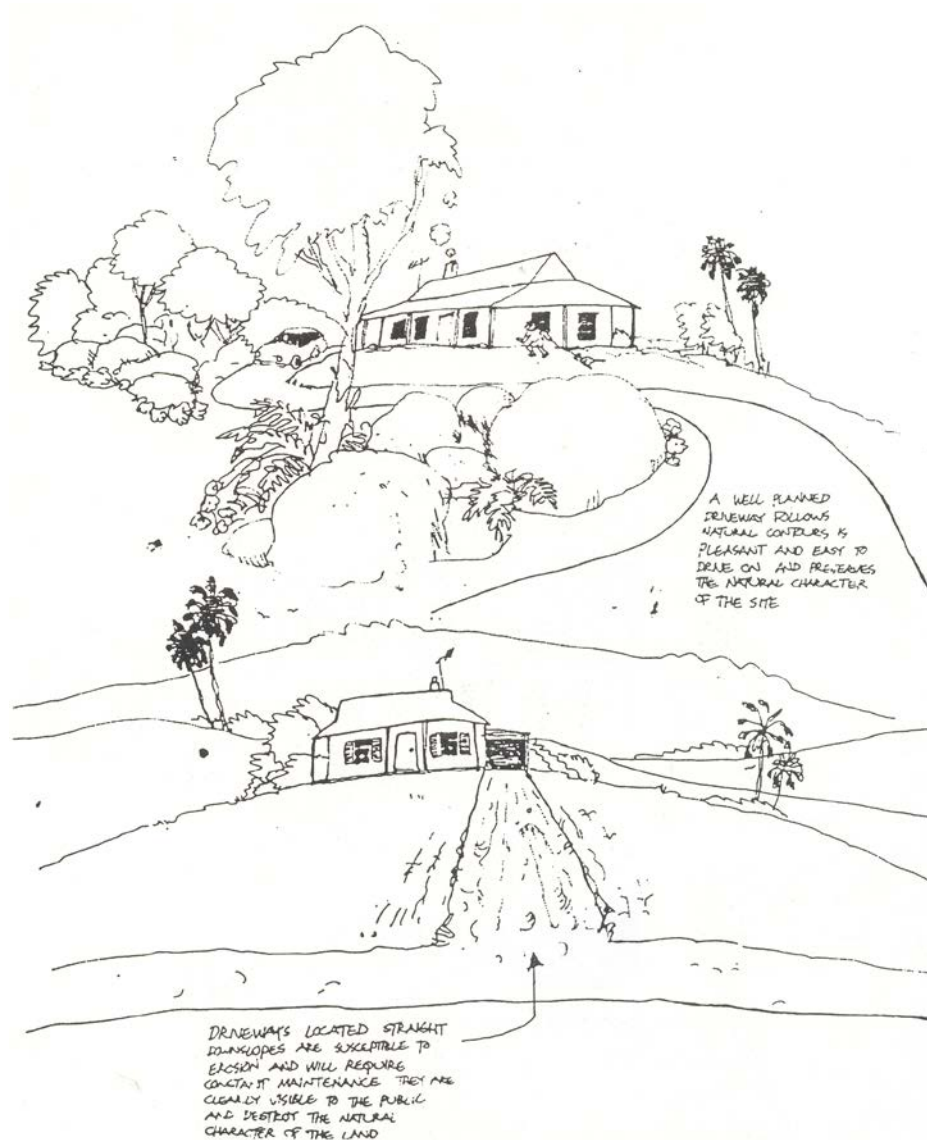
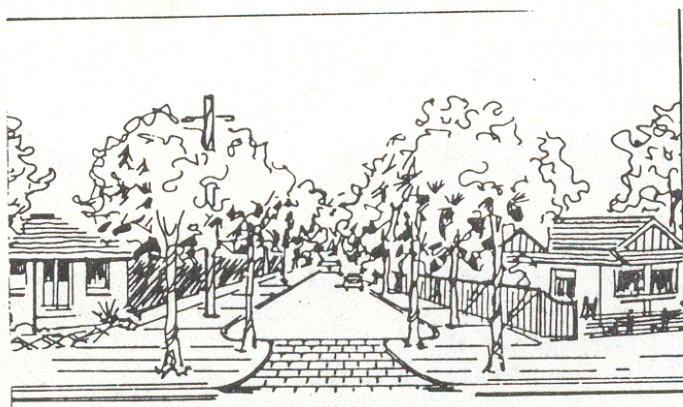
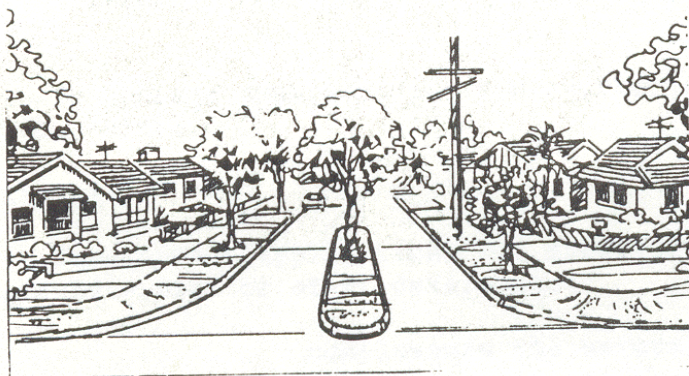
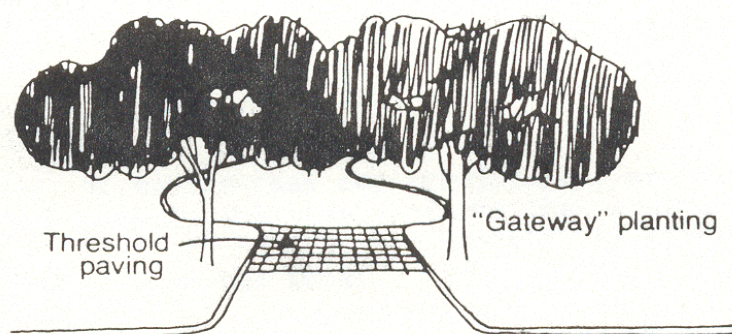


Figure E3.21: Example of access layout and landscaping (1)



E3.22: Example of access layout and landscaping (2)



3.4.2.2 Subdivision and Layout

The minimum lot sizes in Cranebrook are to be in accordance with the LEP. The following provisions provide additional objectives and controls for subdivision in the Cranebrook rural area.

A. Objectives

- a) To ensure that any subdivision, or likely subsequent development, achieves a scheme that recognises and maximises the opportunities offered by the physical attributes and rural character of the area.
- b) To encourage direct road access and the minimisation of battle-axe lots, as found in traditional rural subdivision and development.
- c) To achieve adequate protection of valuable items of heritage significance.
- d) To provide a gradual transition of density controls between the Cranebrook urban and rural areas, running generally east to west.
- e) To enhance opportunities for further subdivision if required in the future.

B. Controls

- 1) Development applications for subdivision should ensure that any subdivision or other development:
 - a) Complements the natural features of slope, aspect and elevation of the land;
 - b) Maintains the strong landscape presence along the ridgelines;
 - c) Maintains the rural character and visual quality of the area;
 - d) Retains and enhances the existing vegetation and natural drainage courses;
 - e) Minimises the effects of intrusive elements in the landscape (e.g. overhead utilities);
 - f) Maximises in lot design valuable opportunities for sunlight and views;
 - g) Retain existing dams wherever possible.
- 2) In general, subdivision should provide public road frontage to new lots;
- 3) Battle-axe frontage for new lots is discouraged.
- 4) Subdivided lots of a simple shape will be encouraged, with boundaries responsive to physical features. Applicants should refer to Figure E11.8 on the following page for examples. Awkward irregular lots and long thin lots will be discouraged. A maximum depth to width ratio of 1:4 is generally to be applied.
- 5) In that land within the E4 Environmental Living zone where there is discretion for further subdivision, applications for subdivision should also;
 - a) Nominate future dwelling locations (Once approved, future dwelling locations will be identified by means of a restriction on the property title.); and
 - b) Address the impact on existing vegetation and landscape and provide supporting landscape proposals.
- 6) All subdivision in the vicinity of an item of Environmental Heritage shall maintain a suitable curtilage.

3.4.2.3 Built Structures

A. Objectives

- a) To ensure that all improvements are complementary to the natural features such as landscape, ridgelines, topography.
- b) To ensure that all development achieves a scheme that recognises and maximises the opportunities offered by the rural character and physical attributes of the area.
- c) To encourage consideration of all the rural components of development such as fencing, outbuildings, driveways and landscaping, in the design of proposed development.

B. Controls

- 1) All development for dwellings, outbuildings, and other buildings should:
 - a) Complement the natural features of slope, aspect and elevation of the land;
 - b) Maintain the strong landscape presence along the ridgelines;
 - c) Maintain the rural character and visual quality of the area;
 - d) Retain and enhance the existing vegetation and natural drainage courses;
 - e) Minimise the effects of intrusive elements in the landscape (e.g. overhead utilities).
- 2) All development for residential purposes should maximise opportunities for sunlight and consider the effect of the development on adjoining properties.
- 3) All built structures should be designed to complement and enhance the rural environment. This includes consideration of the: -
 - a) Height
 - b) Location
 - c) Setback
 - d) Shape
 - e) Building materials
 - f) External features of all proposed buildings.
- 4) Increased development along ridgelines is discouraged.
- 5) Landscape plans will be required with development applications for built structures.
- 6) Boundary fencing should be of an open, rural character, in line with that normally found in rural areas. No objections are raised to internal courtyard fencing, or entry fencing provided such fencing is sensitive to the rural environment.

Figure E3.23: Design Approaches to the Site

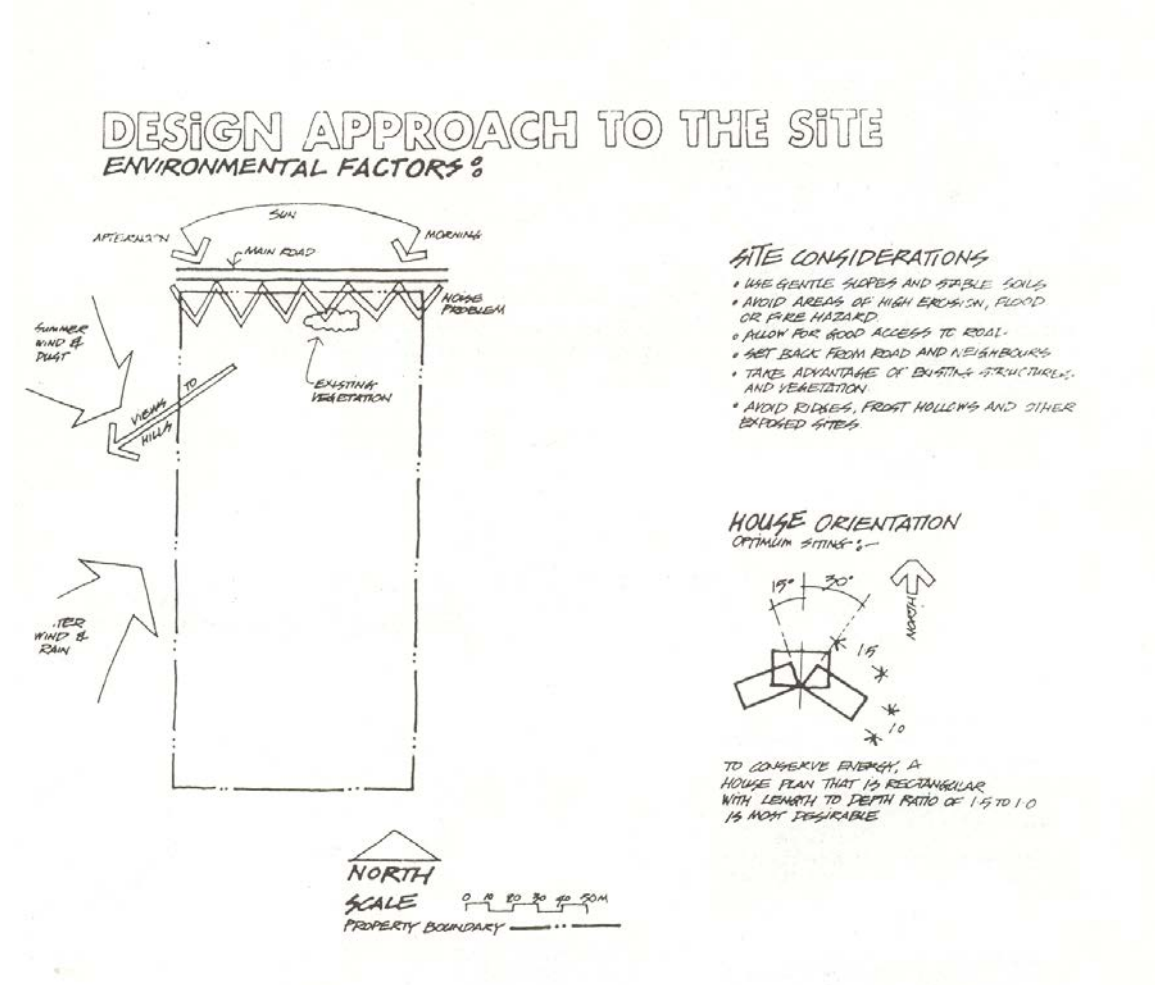
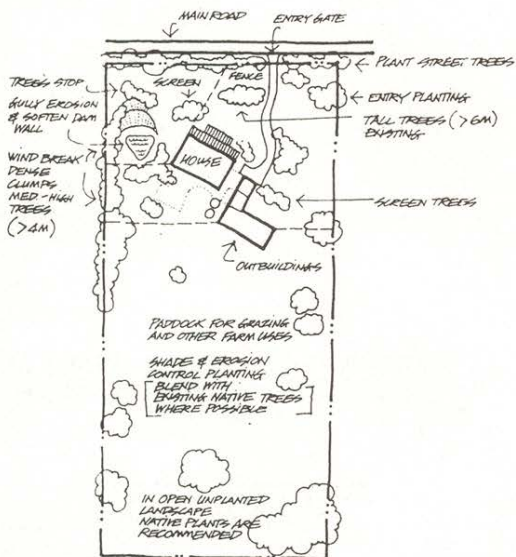


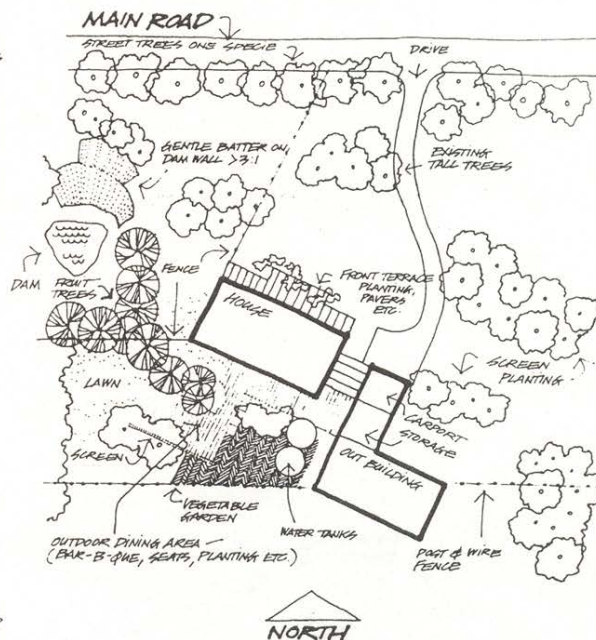
Figure E3.24: Example of a Design Approach

AN EXAMPLE OF A DESIGN APPROACH:

TREE PLANTING



HOUSE LANDSCAPING



TO AVOID CHAOTIC AND INAPPROPRIATE PLANTING BLEND NEW PLANTING WITH EXISTING AND LIMIT THE NUMBER OF SPECIES USED



Figure E3.25: Example of design approach on slope

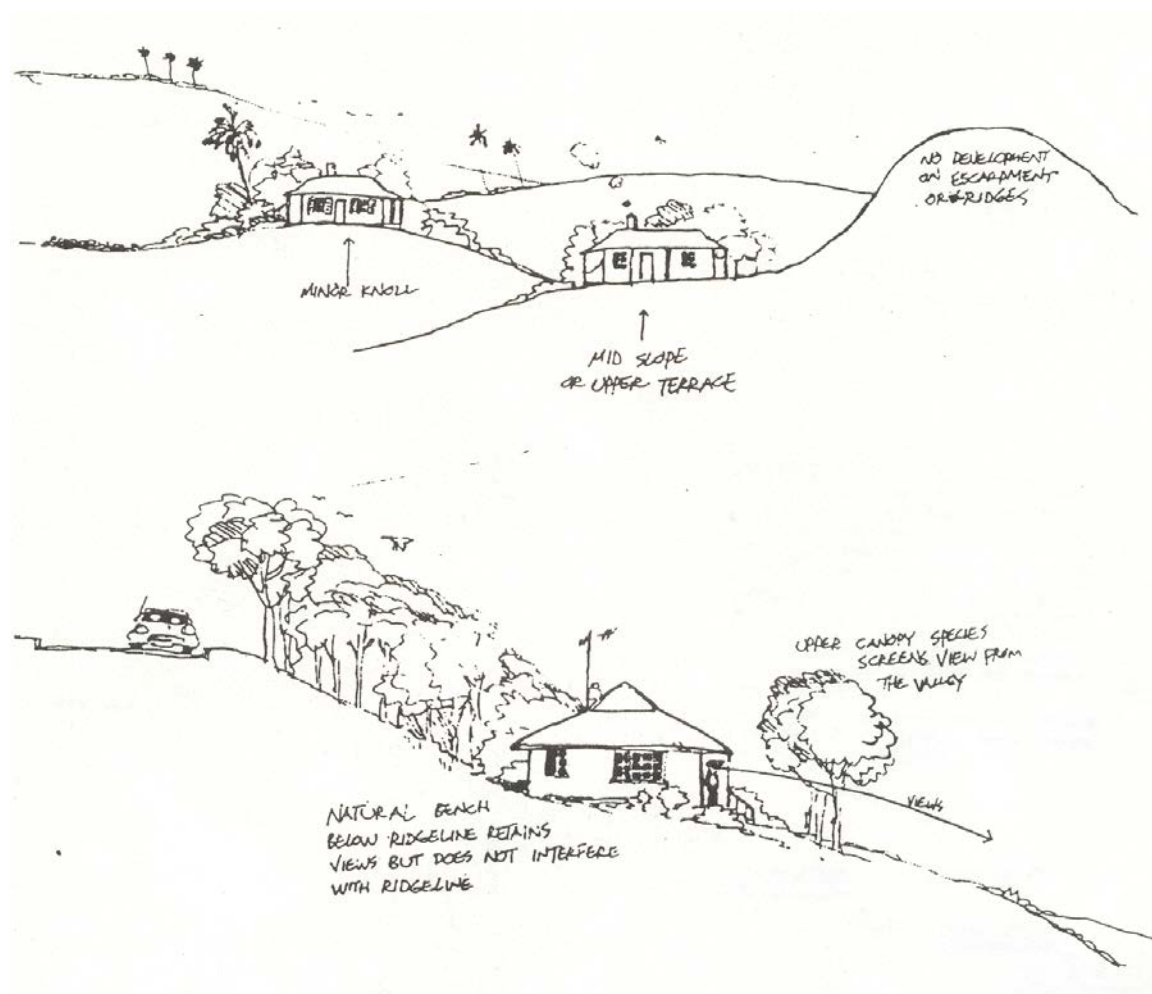
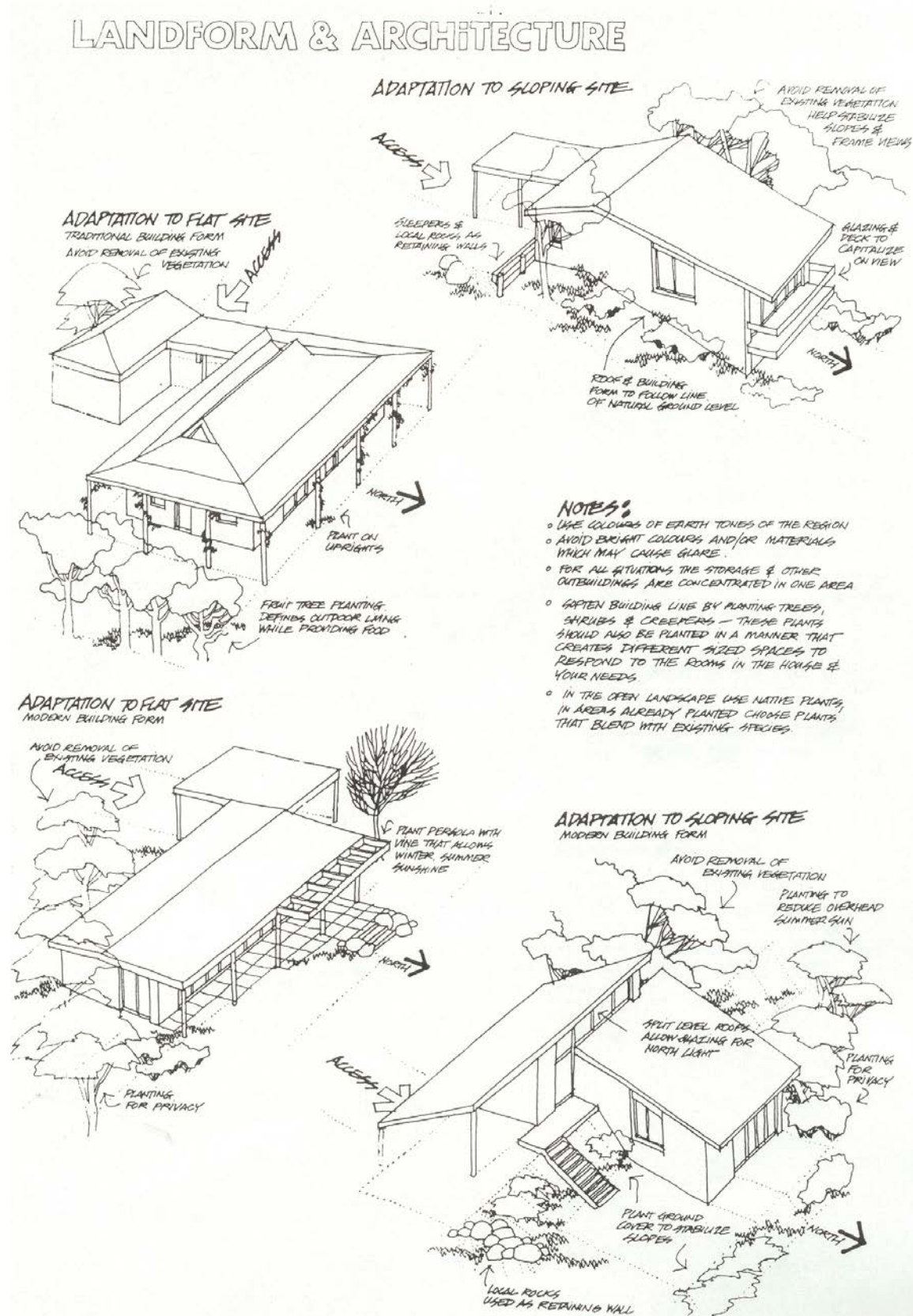


Figure E3.26: Landform and Architecture



3.4.2.4 Landscape

A. Objectives

- a) To retain and enhance the existing landscape, and where disruption is necessary, to minimise the impact of that disruption; and
- b) To identify areas of particular landscape value requiring specialised treatment.

B. Controls

- 1) Existing vegetation should be retained wherever practicable, particularly significant groups of natural vegetation;
- 2) Where vegetation must be removed, additional planting of native species may be required;
- 3) Existing vegetation should be preserved and reinforced;
 - a) Along important ridgelines; and
 - b) In the vicinity of natural drainage lines.
- 4) Plans of landscaping will be generally required for all development applications;
- 5) In that land within the E4 Environmental Living zone where there is discretion for further residential development it will be necessary to:
 - a) Nominate future dwelling locations;
 - b) Address the impact of existing vegetation and landscape; and
 - c) Provide alternative supporting landscaping proposals.
- 6) The removal of trees shall be in accordance with the Vegetation Management Section.

3.4.2.5 Community Facilities

A. Objectives

- a) To provide for the reasonable demand for community facilities and playing fields created by future residents; and
- b) To encourage social integration with adjacent residential areas by shared use, and contribution towards the development of community facilities and playing fields.

B. Controls

- 1) To assess and monitor community needs for the area;
- 2) To provide details on the provision of community facilities and playing fields for the use of residents; and
- 3) To require contribution towards community facilities and playing fields in accordance with the assessed needs with any new development.

3.4.2.6 Services

A. Objective

- a) To ensure the provision of suitable services to the area in a manner that is cost effective and complementary to the overall objectives for the area.

3.4.2.6.1 Water Supply/Effluent Disposal

A. Controls

- 1) Prior to the issue of development consent on any land, satisfactory arrangements must be made with Sydney Water and Council (within their respective areas of responsibility) for:
 - a) Amplification and reticulation of water services to the land to which the application relates (unless Sydney Water certifies that the carrying out of development in accordance with that consent will not require the making of any such arrangement);
 - b) Amplification and reticulation of sewerage services in the case of development creating lots less than 4,000m² in area;
 - c) On-site disposal of effluent for development not requiring sewerage reticulation. Landowners are encouraged to install aerated disposal systems to minimise environmental impact.

3.4.2.6.2 Drainage

A. Objectives

- a) To preserve and upgrade the existing drainage system, and to minimise major engineering works; and
- b) To maintain the quality of stormwater discharge into the downstream drainage system.

B. Controls

- 1) The existing drainage system is to be retained;
- 2) Engineered drainage channels are to be provided only in exceptional circumstances;
- 3) Grass-swale drainage is to be provided, except in steeper areas where concrete lined inverts may be necessary;
- 4) All development should minimise runoff and related pollution, particularly in the vicinity of natural drainage lines;
- 5) A monetary contribution will be required to upgrade road drainage. This contribution will be imposed under Section 94 of the Environmental Planning and Assessment Act; and
- 6) Dams should be retained wherever possible.

3.4.3 Maps

The following maps illustrate the road layouts of Cranebrook, as well as the various amendments to the DCP which apply to the subject land.

Figure E3.27: Road Layouts in Cranebrook

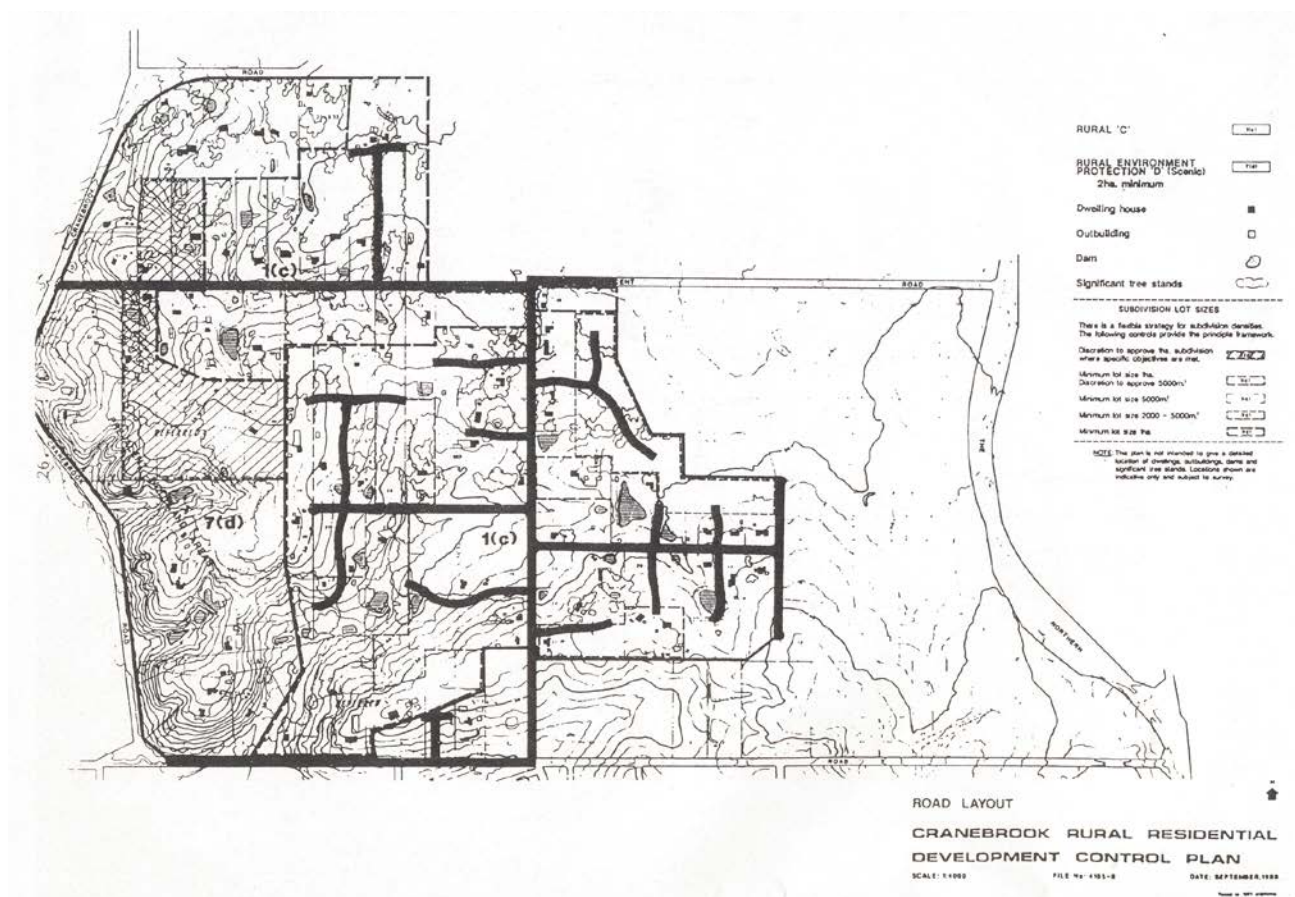


Figure E3.28: Amendment to DCP (1)

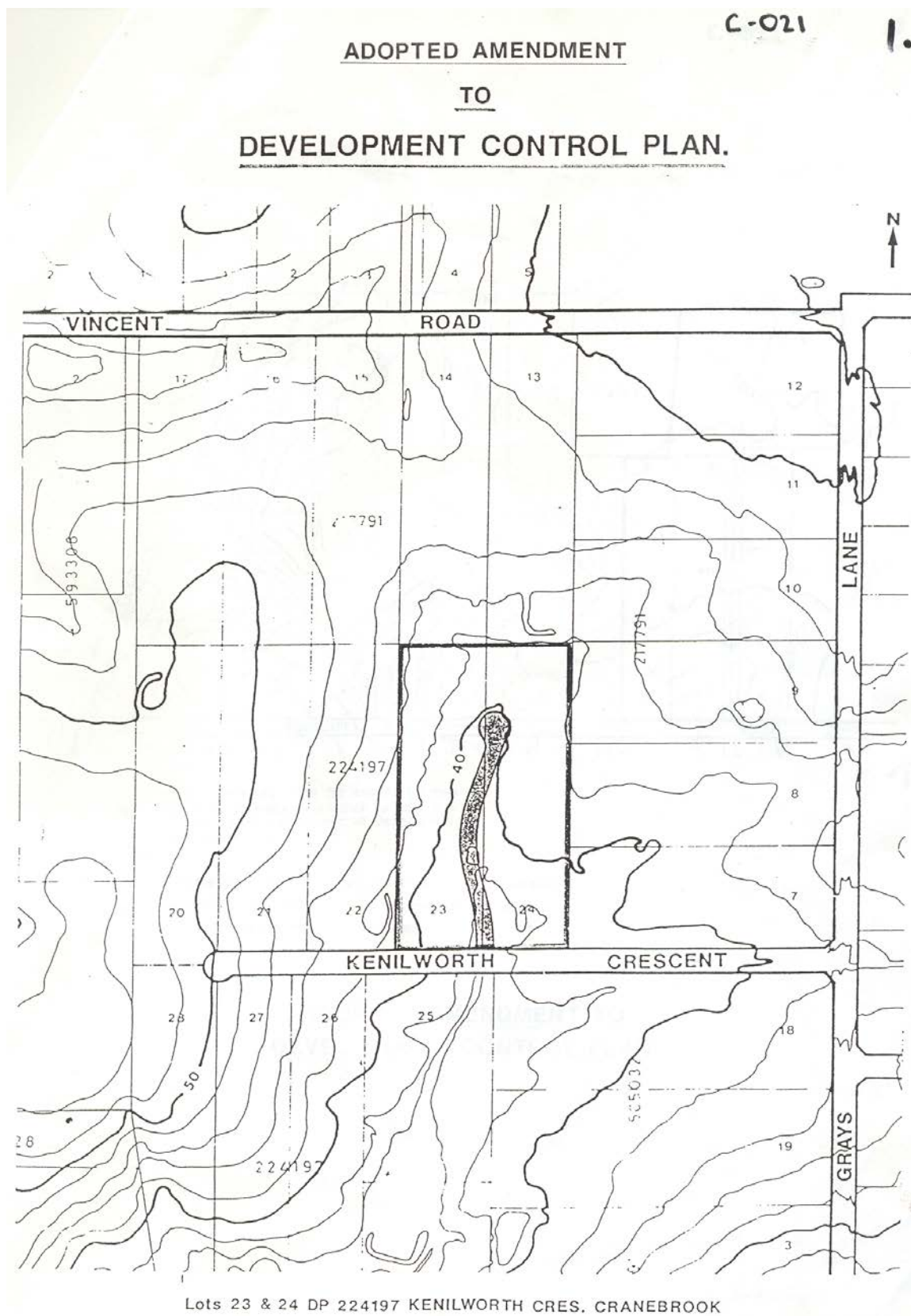


Figure E3.29: Amendment to DCP (2)

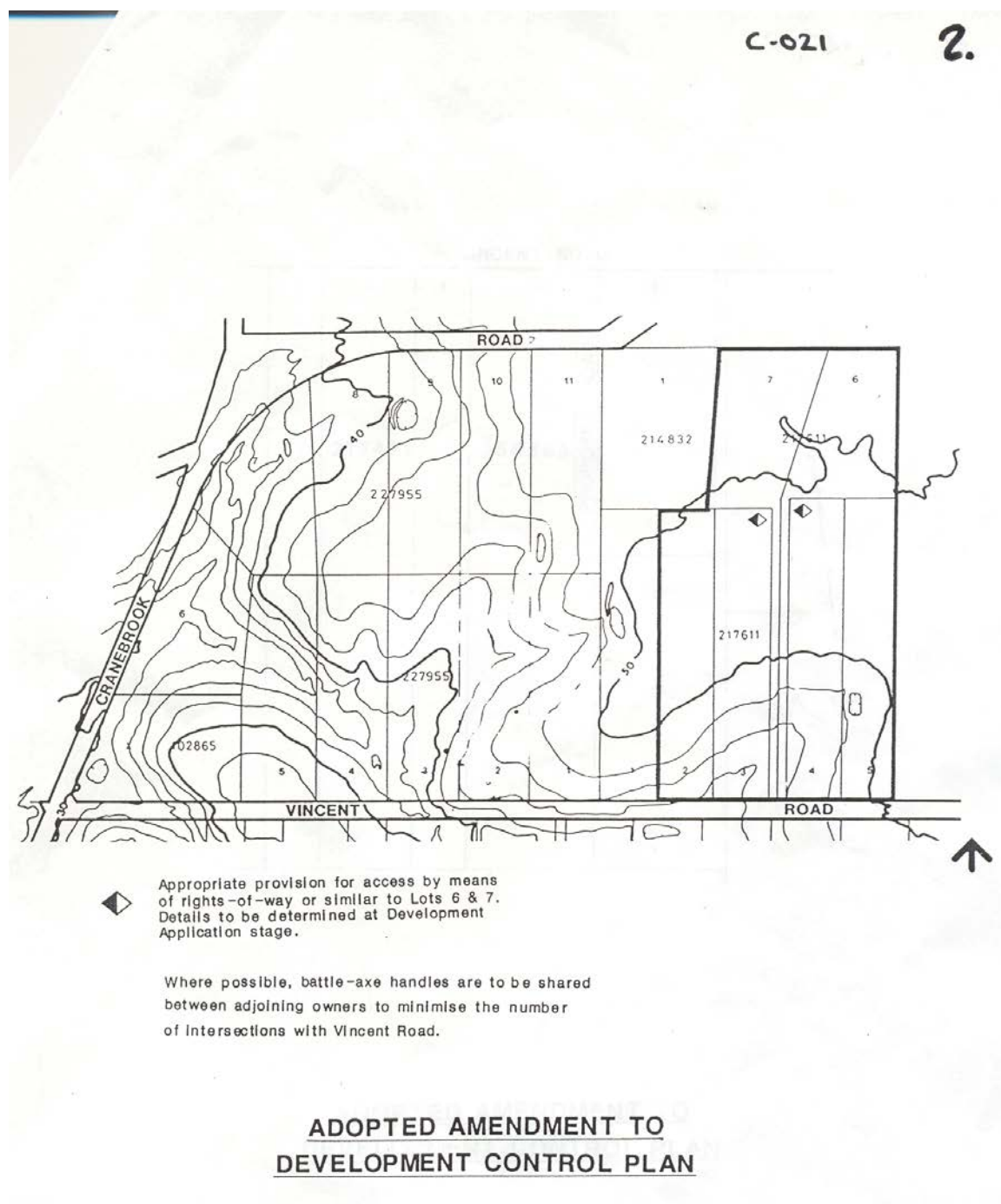


Figure E3.30: Amendment to DCP (3)

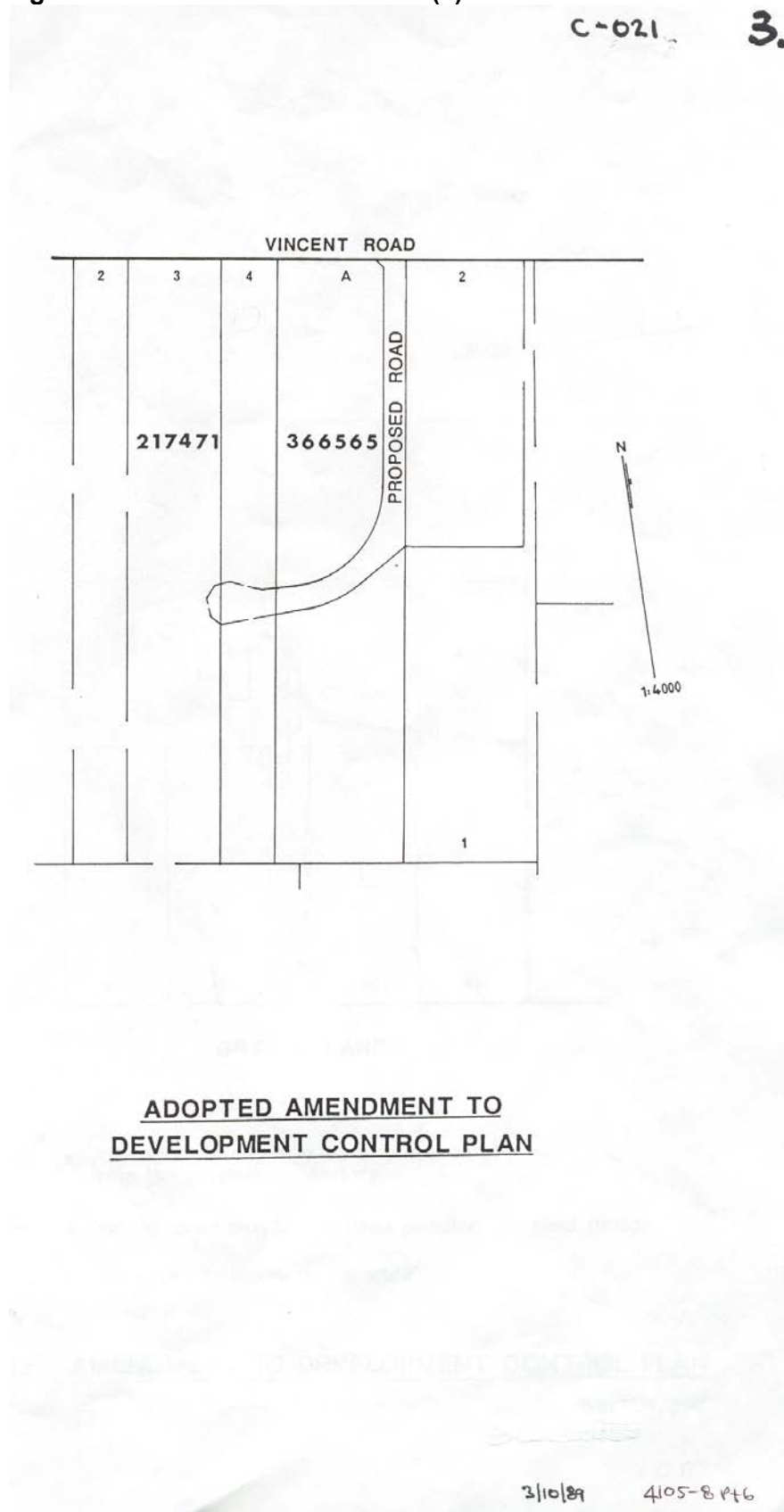


Figure E3.31: Amendment to DCP (4)

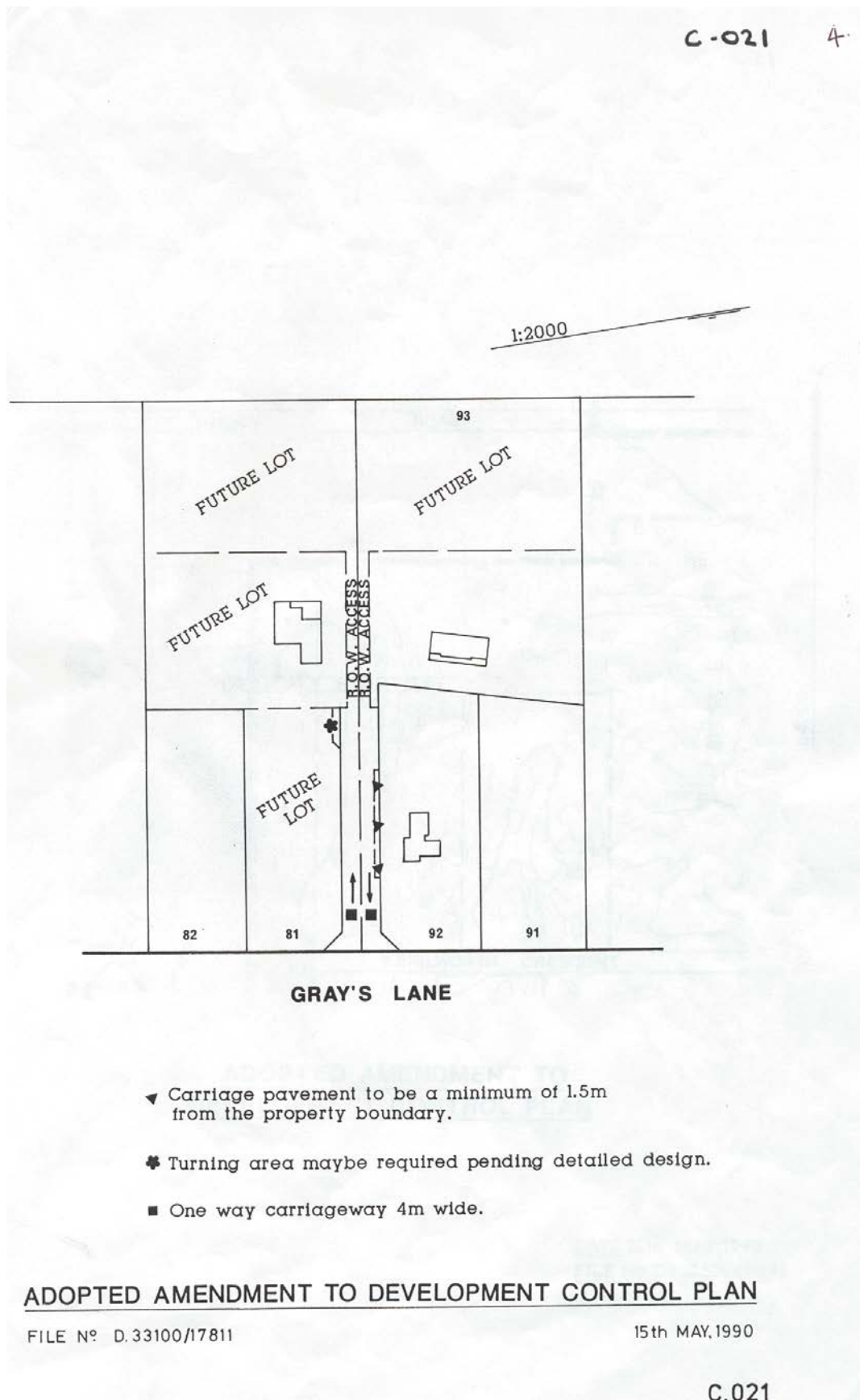


Figure E3.32: Amendment to DCP (5)

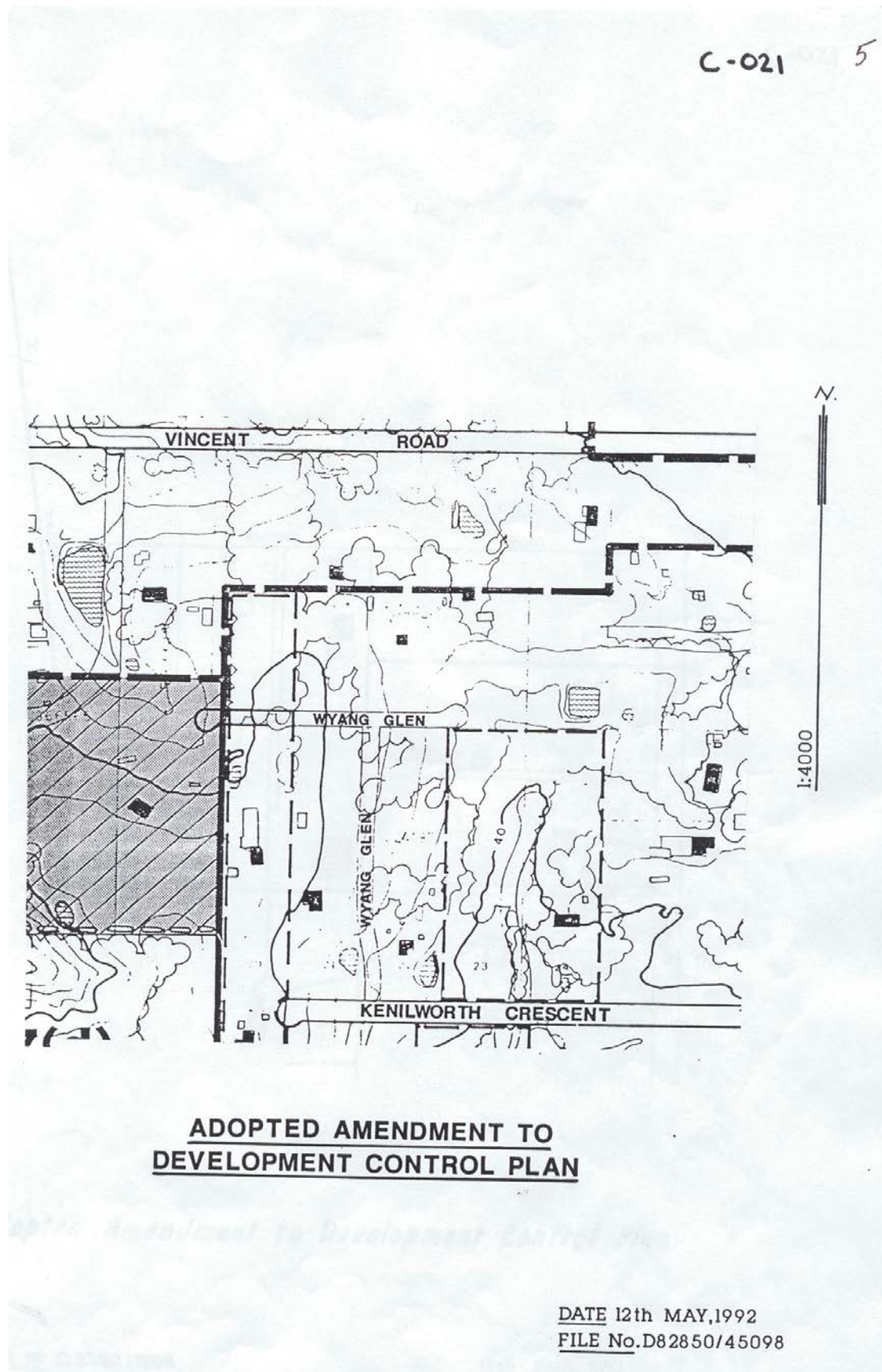


Figure E3.33: Amendment to DCP (6)

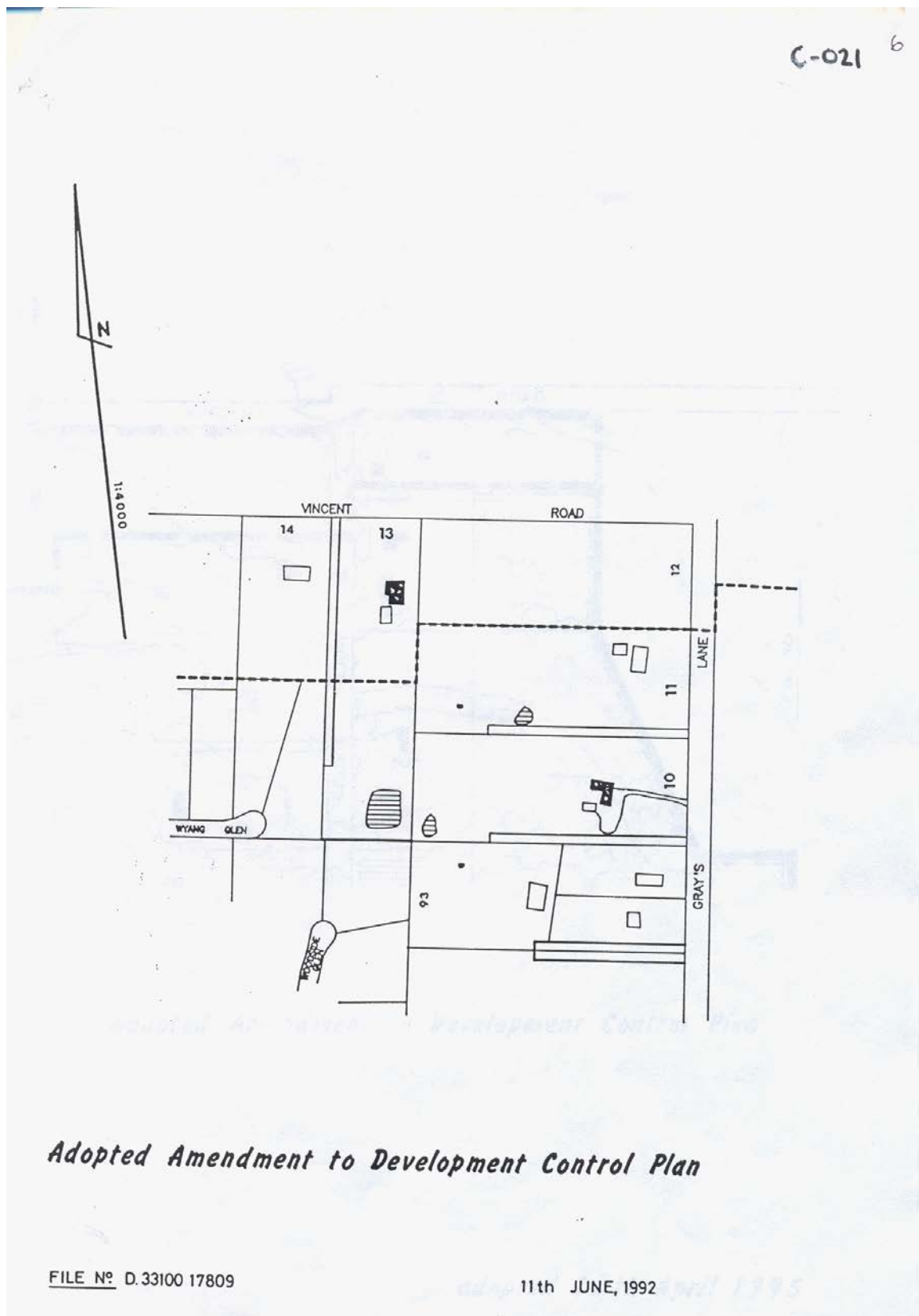
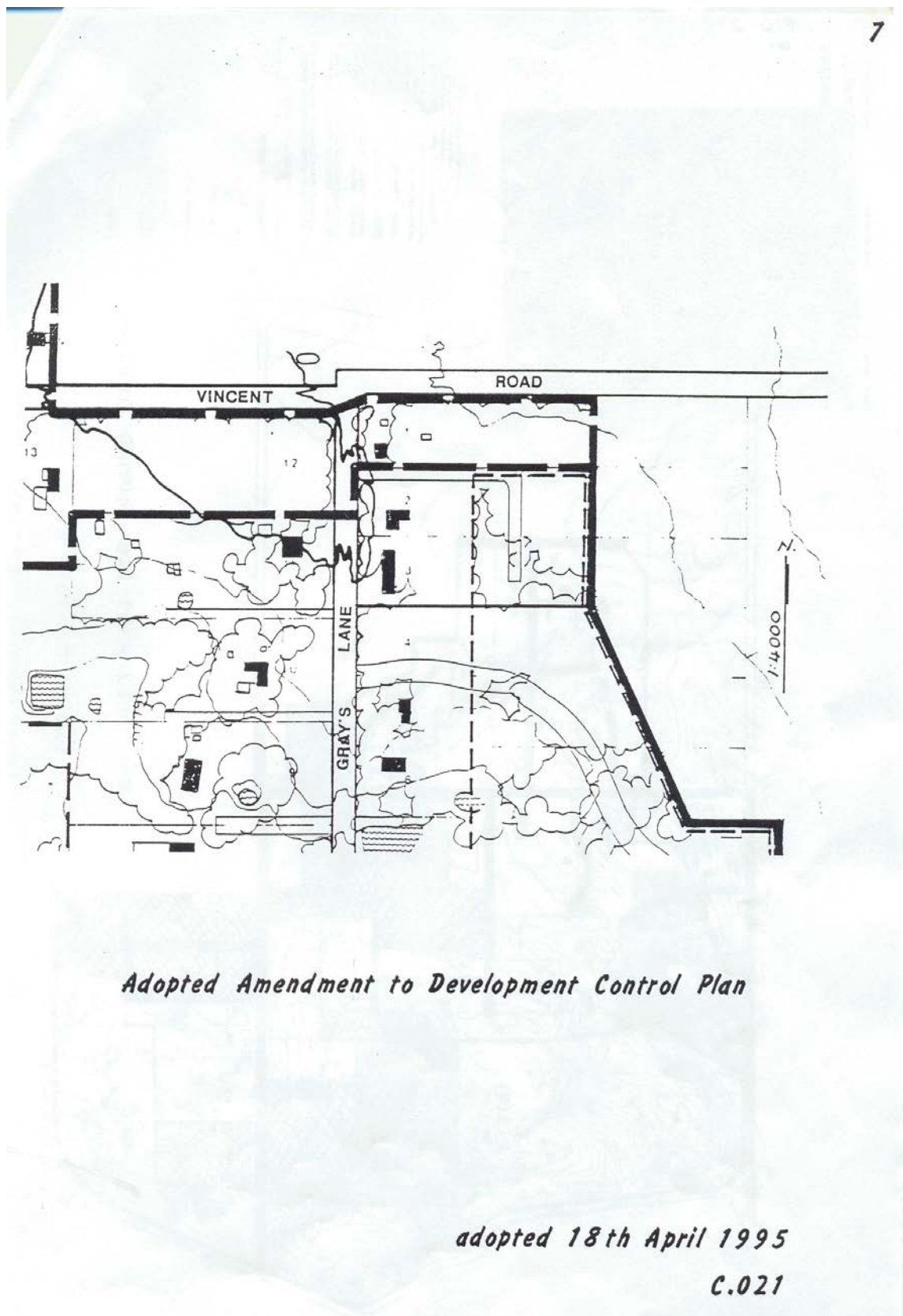


Figure E3.34: Amendment to DCP (7)



E4 Emu Heights – Blue Mountains Eastern Escarpment

Table of Contents

E4 EMU HEIGHTS – BLUE MOUNTAINS EASTERN ESCARPMENT	2
PART A – PRELIMINARY	2
4.1 INTRODUCTION	2
4.1.1 LAND TO WHICH THIS SECTION APPLIES	2
4.1.2 PURPOSE OF THE SECTION	4
4.1.3 AIMS AND OBJECTIVES OF THIS SECTION	4
4.1.4 SPECIAL REQUIREMENTS	4
PART B – CONTROLS	5
4.2 SITING	5
4.3 CONSTRUCTION AND EARTHWORKS	5
4.4 BUILDING DESIGN	6
4.4.1 ROOF FORM	6
4.4.2 BUILDING HEIGHT	7
4.4.3 DOORS AND WINDOWS	7
4.4.4 FENCES	7
4.5 BUILDING MATERIALS	8
4.6 BUILDING COLOURS	9
4.7 SERVICES	9
4.8 ACCESS	10
4.9 LANDSCAPING	10
4.10 BUSHFIRE HAZARD	11
APPENDIX 1: MAPS OF BLUE MOUNTAINS ESCARPMENT AREA	13

E4 Emu Heights – Blue Mountains Eastern Escarpment

Part A – Preliminary

4.1 Introduction

In an area as sensitive as the Blue Mountains Eastern Escarpment, development proposals must be responsive to a wide range of concerns regarding the preservation of the natural and cultural environment.

The following Siting, Design and Management section sets out in full the type of development which is acceptable with respect to the preservation of the visual, topographic, vegetative and cultural features which make the Escarpment unique. All applications to Council must respond to these guidelines and development shall be allowed to proceed only if it is in accordance with the requirements set out in the guidelines.

In areas of moderate and moderate to high bushfire hazard, all development proposals will be required to comply with the section relating to bushfire hazard. In these situations an acceptable compromise between controls relating to visual amenity and those relating to fire hazard must be reached.

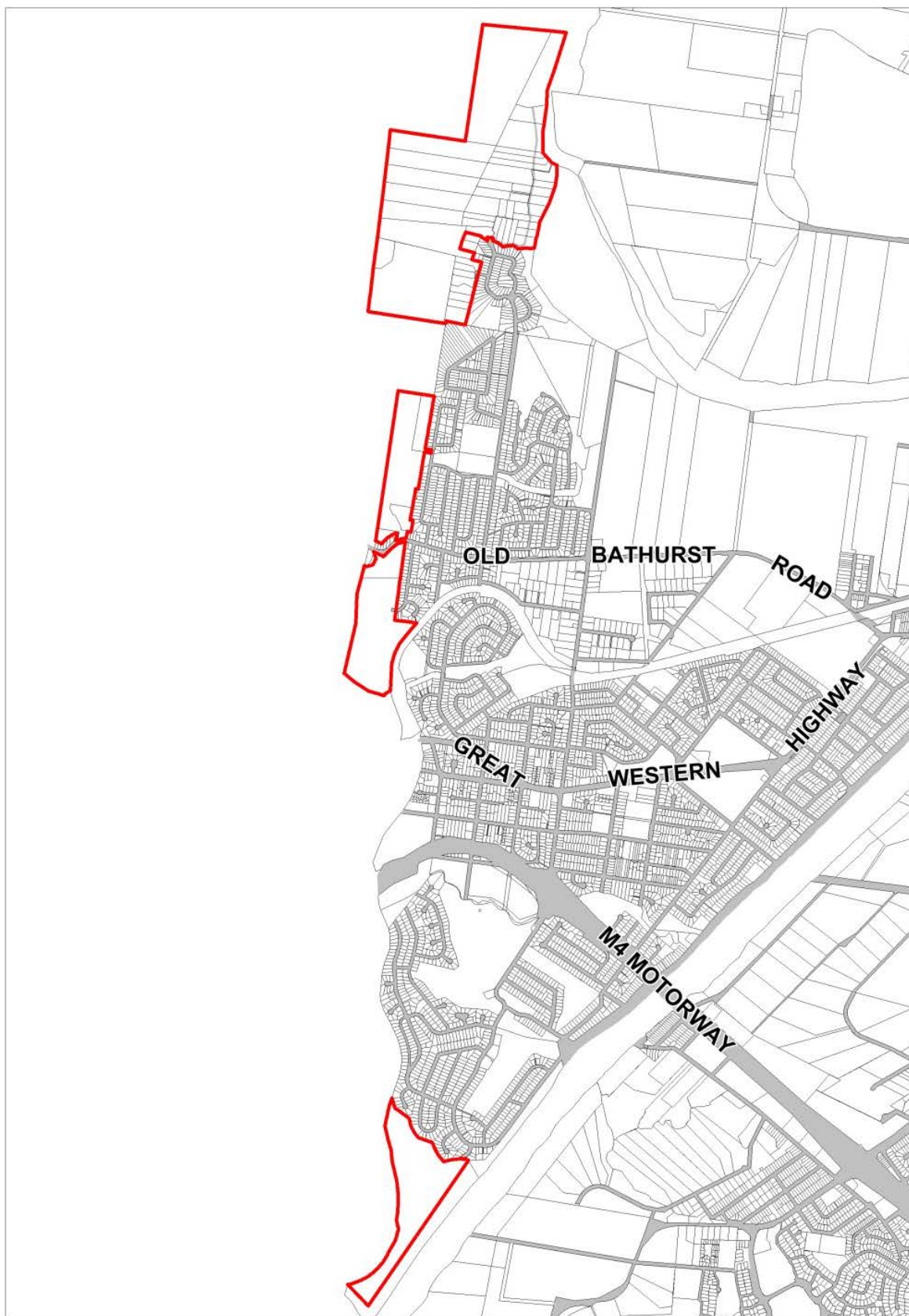
Any application must satisfactorily address development principles, objectives and policies, and must justify any variation, as well as address how the development complies with this section.

Subdivision Applications must be in accordance with the allotment layout contained in the plans accompanying this Section, as shown in Figures E4.4 – E4.8.

4.1.1 Land to which this Section applies

This section applies to the land shown in Figure E4.1.

Figure E4.1: Land to which this Section applies



4.1.2 Purpose of the Section

The purpose of this section is to give detailed guidance to people wishing to carry out development on the Blue Mountains Eastern Escarpment, and to provide Council's policies and controls with respect to development.

4.1.3 Aims and Objectives of this Section

- a) To provide detailed guidelines and controls for development on the Blue Mountains Eastern Escarpment lands.
- b) To provide Council's policies to assist those people wishing to carry out development on the Blue Mountains Eastern Escarpment lands.
- c) To ensure that such development does not compromise the environmental qualities of the Blue Mountains Eastern Escarpment.
- d) To identify lands for environment protection and to strictly control development within these lands.
- e) To ensure that the tree covered natural appearance of the escarpment is retained.
- f) To ensure that in any development of the land, regard is had to physical constraints including bushfire hazard, slopes, soil erosion hazards, flooding and access difficulties, as well as archaeological issues.
- g) To ensure that in any development of the land, regard is had to the visual prominence of the area.
- h) To ensure that in any development of the land, provision is made for an adequate water supply and environmentally acceptable waste water disposal system, drainage systems and electricity supply systems.

4.1.4 Special Requirements

- 1) Easements and Rights-of-Way:** Where indicated on accompanying Figure E4.4 – Map 3, all easements and rights-of-way are to be formally negotiated and registered. A formal fire fighting easement is to be provided in accordance with the accompanying Figure E4.4 – Map 3. It is to be 5m in width, with turning bays in some cases, and is to involve the removal of undergrowth and, where necessary, the removal of trees to allow for the passage of fire fighting vehicles. The fire fighting easement must be grassed and appropriately drained to prevent erosion.
- 2) Plantings:** Replanting is to be carried out using suitable species. On lots so marked on accompanying Figure E4.4 – Map 3, as 'lots marked as such to be planted with fire resistant species', fire resistant species are to be used. This requirement does not imply the removal of all trees on site and replacement with fire resistant species, it relates only to replanting following completion of works on site.
- 3) Protected Lands:** Some of the lands may be subject to the Protected Lands provisions of the *Soil Conservation Act 1938*. Applicants are required to check with the Office of Environment and Heritage about the applicability of those provisions to their proposal. If relevant, Council is required to be notified.
- 4) Siting, Design and Management Guidelines:** The following guidelines set out the detailed controls on development in the area covered by this Section. They aim to minimise impacts on the natural environment of the Escarpment and all development proposals must address the provisions contained within them.

Part B – Controls

4.2 Siting

A. Background

Visual impact, energy efficiency, and access to views and privacy are largely dependent upon where a building is located and how it is oriented. In environmentally sensitive areas particularly, the site selection process must involve consideration of the orientation, direction of views and slopes, relationship to the landscape and retention of existing vegetation.

Building forms must stay below the ridge lines so as to retain the visual character of the escarpment.

B. Controls

- 1) A position on a mid-slope bench where the topography provides a natural enclosure, and where existing vegetation can provide screening, is preferable.
- 2) Buildings must be on slopes less than 1:5 (vertical: horizontal).
- 3) Where possible, and having due regard for the bushfire hazard, orientation of buildings is to be towards the north.
- 4) Generally, a setback minimum of 15m from roads is required. Parking areas are not permitted within this setback.
- 5) A setback of 80m from the Nepean River bank is required.

4.3 Construction and Earthworks

A. Background

On steeper slopes, earthworks will be highly visible and there may be stability problems. Thus, site disturbance is to be minimised so as to retain the visual character of the escarpment.

Details of erosion and sediment control are required for inclusion in a subdivision and development application when site disturbance is proposed.

B. Controls

- 1) Where relevant, proposals for the following erosion control measures must be included in any application:
 - a) Effective sediment traps in drainage courses prior to construction.
 - b) Provision of overland flow diversions above and below development sites.
 - c) Vehicular traffic to be confined to sealed roads or parking bays.
 - d) Suitable ground and/or shrub cover to be established in all landscaped areas as soon as construction is completed.
 - e) Site and excavation works is to be limited to the immediate building envelope.
 - f) Maintenance of control measures.
 - g) Rehabilitation techniques.

These proposals are to be included in an erosion and sediment control plan.

- 2) Surplus excavated material is to be removed from the site.
- 3) Restoration of all site disturbances is required prior to occupation of buildings.
- 4) Cut and fill depth is to be minimised.
- 5) Slab on ground construction is inappropriate on slopes steeper than 1:10. Elevated floors are required on these slopes. Caution must be taken here in areas of bushfire risk.

4.4 Building Design

A. Introduction

Thorough site analysis and planning is essential to ensure that the building responds to the site rather than trying to modify the site to fit the building. This will ensure that the bushland character of the Escarpment is maintained.

Particular attention should be paid to the visual prominence of the buildings. Buildings which have their main lines at right angles to the natural ground slope appear obtrusive. The strong triangular geometry, of for instance an A-frame or a gable, gives an unacceptable vertical emphasis to the building.

B. Controls

- 1) Facades and roof lines should be broken into small elements. No single plane or element is to exceed 10m in any dimension. Walls can be relieved in elevation by use of bays and recesses.
- 2) The longer facades of the building are to be parallel to the contours.
- 3) Horizontal emphasis is to be given to the composition of building elements such as wall panels, windows, roof and verandah lines.
- 4) Verandahs, wide eaves, pergolas and trellises serve to relate structures to natural ground level and to vegetation.
- 5) Split level buildings, which step up and down the slopes, will avoid cutting and filling, and will avoid the need for high walls.
- 6) To avoid piers, stilts and poles, build load bearing structures directly from the ground.
- 7) Tanks, sheds, carports and garages are to be screened by vegetation and walls, and are to be built to link to the main buildings or form part of a group of buildings and should be of similar colours to the dwelling house.
- 8) Round or curved buildings (either in plan or elevation) can be compatible with the landscape.
- 9) Dual occupancy development must be designed in accordance with the provisions of this Section and those of the Residential Development Section of this Plan.

4.4.1 Roof form

A. Background

Roof forms which bring the roof line down towards the earth, blend better with the landscape. Steeply pitched roofs usually appear obtrusive because their slopes are greatly in excess of the natural slope of the ground.

However, in hill country, it is most unusual to see a flat or low pitched roof that reflects and blends with the landform. Hipped roofs are very effective in leading the eye back down to ground level and hence are preferred.

B. Controls

- 1) The roofline is to be below tree canopy level.
- 2) Roof pitch is to be generally parallel to the surrounding ground slope with a minimum pitch of 10 degrees and a maximum of 30 degrees.
- 3) No single plane or element of a pitched roof should exceed 10m in any direction.
- 4) Top edges of roofs are to return at the same pitch rather than terminate in a skillion form.
- 5) It is preferable to finish the roof with wide eaves or verandahs and bring the roof edge as close to the ground as possible.
- 6) Solar energy collector panels are to be non-reflective.

4.4.2 Building Height

A. Background

Height restrictions apply in order to avoid loss of the visual qualities of the area. Generally, a height of more than one level is considered unsuitable.

B. Controls

- 1) Building heights are limited to one level (including garage) except in cases where unacceptable site disturbance will result. Split level development is preferable in such cases.
- 2) Where height is limited to one level, enclosed under house storage will be permitted. In moderate and moderate to high bushfire risk areas, this storage area must be enclosed.

4.4.3 Doors and Windows

A. Controls

To minimise undesirable impacts caused by the use of reflective materials, the following guidelines are appropriate:

- 1) Doors and window openings are to be vertical in proportion.
- 2) Timber construction is appropriate, subject to acceptable treatment to reduce the bushfire hazard potential.
- 3) Aluminium windows and doors are acceptable, provided that the frames are of acceptable colours (brown, green, cream etc.).

4.4.4 Fences

A. Background

To minimise impact on the bushland character of the area, minimal or no fencing may be appropriate in some locations. However, appropriate fencing will be required to assist with bushland management.

B. Controls

- 1) In general, fences are to be unpretentious and simple. Timber post and rail style is appropriate.
- 2) Masonry, brick block work, stone, and light colours, are inappropriate for fences.
- 3) Natural colours are to be used. Natural timber, colours in the green range (excepting bright greens), and grey to light browns are appropriate for fencing.
- 4) Fences are to avoid the “No Development” areas, as identified in Figure E4.4 (Map 3).
- 5) Fences along the boundary of the E2 Environmental Conservation and E3 Environmental Management zones should be of the type which does not allow the passage of domestic animals.

4.5 Building Materials

A. Background

Natural textures and materials are less obtrusive in a bushland setting and are therefore more appropriate. Generally, those which most closely resemble the natural materials in colour and texture are the most appropriate.

Large, flat expanses of reflective materials are best avoided, as are highly textured, variegated or brightly coloured bricks. Consideration must also be given however to the types of materials most suitable in bushfire prone areas.

B. Controls

- 1) Suitable wall materials, subject to bushfire hazard rating, are:
 - a) timber (treated or stained);
 - b) weatherboard;
 - c) treated concrete blocks;
 - d) brick / brick veneer;
 - e) stone;
 - f) steel.
- 2) For rooves,:
 - a) Tile;
 - b) corrugated steel, and
 - c) painted steel deckingare appropriate.
- 3) Large flat areas of glass and sheet metal are not permitted, particularly on eastern elevations.
- 4) Stained and other treated timber materials are to be regularly maintained to reduce the bushfire hazard potential.

4.6 Building Colours

A. Background

The situation and setting of buildings should be considered when selecting materials and colours. Hence, recessive colours which are derived from, and blend with, the landscape and which are natural earthy tones of low reflective quality should be used. Particular care must be taken when the development can be viewed from public places.

B. Controls

- 1) Roof colours – Colours in the green range, except bright greens are acceptable; as are any of the ochre range, and the grey to brown colours.
- 2) Walls and other external surfaces - Natural timber and stone and bricks of the light brown colour range are appropriate. Large facades of dark bricks, even brown, accentuate the size of the structure and are inappropriate. Dark surfaces are permitted only as a plane or element which does not exceed 5m in any direction.
- 3) Minor features - Colour detail is appropriate on minor features such as window frames and doors.
- 4) Fences – Natural timber, colours in the green range (excepting bright greens), grey to light browns are appropriate for fencing.

4.7 Services

A. Controls

- 1) Locate electricity and telephone wires underground.
- 2) Services to be screened by walls and vegetation.
- 3) An easement for access to the transmission lines will need to be created on some allotments.
- 4) All necessary easements shall be created in favour of the relevant servicing authority at no cost to Council or the servicing authority.
- 5) Provisions for subdivisional drainage are to be devised in consultation with, and to the satisfaction of, Council's Engineering Services Manager. Proposals which would result in the pollution of the Nepean River will not be approved. On-site detention of stormwater may be required.
- 6) All cabling and excavations for services are to be undertaken in a manner which will allow bushland rehabilitation.
- 7) All dwellings and other buildings containing toilets are to be connected to the Water Board sewerage system when capacity exists within the system. In the interim, applications are required to stipulate the means of treating and disposing of effluent. This must occur in a manner that does not lead to pollution of the river.

4.8 Access

A. Background

Driveways should follow natural contours or run gently across steep slopes. Drainage lines and areas requiring extensive cut and fill should be avoided for access construction. Informal access can be more appropriate in sensitive areas.

B. Controls

- 1) Roads and rights-of-way are to be constructed in accordance with the plans accompanying this section and to Council's standards in consultation with, and to the satisfaction of, Council's Engineering Services Manager.
- 2) New roads and rights-of-way shall be created at no cost to Council.
- 3) Driveways are to follow natural contours and to avoid damming gullies and streams. Driveways are to be located to retain as much natural vegetation as practicable.
- 4) Slopes and banks of roads and driveways must be stabilised during construction.
- 5) To maintain a 'low key' feeling, narrow roads and driveways are to be constructed.
- 6) Gravel or crushed sandstone surfaces are preferable on low slope driveways. On steeply sloping land, paving or sealing is to be in a dark colour to give a more natural effect.
- 7) Access tracks may be constructed in 'No Development' areas, but only in accordance with the plans accompanying these guidelines.
- 8) It will be necessary for the method of treating and minimising runoff from roads, driveways and sediment control and restoration of all earthworks to be addressed as part of any development application.
- 9) The location of the road pavement within the reservation is subject to detailed survey.
- 10) All accessways, roads, tracks and driveways are to be constructed in such a manner that the disturbance of adjacent areas is to be minimised. This is particularly critical where access is through areas of bushland and across and adjacent to creeks and drainage lines.

4.9 Landscaping

A. Background

It is vitally important that the tree canopy and bushland vistas remain. Species chosen for landscaping purposes should be chosen with the following criteria in mind:

- a) Appropriateness for location
- b) Suitability for purpose e.g. for screening
- c) Fire and drought resistance
- d) Ease of maintenance
- e) Attractiveness

Weeds should be eradicated from natural vegetation, using proven bush regeneration techniques.

A comprehensive list of suitable species is available on Council's website or by contacting Council.

B. Controls

- 1) Permission will not be given to remove natural vegetation from the areas marked as 'No Development' zones. Through the application of these controls, existing indigenous vegetation will be retained wherever possible.
- 2) Local native plant species are preferred.
- 3) The use of fire resistant local native species is appropriate for all allotments, but must be used on certain specified allotments.
- 4) Existing low plants and leaf litter are to be retained as groundcover, except where subject to specific controls in areas of moderate and moderate to high bushfire hazard areas.
- 5) Native grasses are more appropriate than bright green lawns.
- 6) Natural rock features are to be retained.
- 7) Random planting and groups of trees are more in keeping with the natural landscape than formal plantings.
- 8) Landscaping plans, to be prepared in accordance with plans included within this section, are required for all developments.
- 9) Bushland regeneration, using approved bushland regeneration techniques, is to be incorporated where necessary as part of a landscaping plan, and is to be carried out to the satisfaction of Council's Engineering Services Manager.
- 10) All mulching material is to originate from clean native vegetation from the site, to avoid the introduction of exotic species.
- 11) Retain/add habitat for fauna, e.g. logs for reptiles.

4.10 Bushfire Hazard

A. Background

Bushfire risks in bushland settings can be lessened by both safety measures and management measures. The aim is to reduce the use of environmentally unacceptable hazard reduction methods such as controlled burning, by paying attention to building design and siting.

B. Controls

- 1) All allotments must comply with the requirements of *Planning for Bush Fire Protection 2006* and the Australian Standard for the Construction of bush-fire prone areas AS3959-2009 and the guidelines as identified on Figure E4.4 – Map 3. Advice from Council's Development Services Department should be sought prior to lodging an application with Council.
- 2) In order to maintain the firebreak and fuel reduced zones, a 5m wide access-way for fire fighters is to be provided within allotments and registered as fire prevention easements. The final location is to be subject to survey. This access-way is to provide for vehicular movement and may require removal of trees and undergrowth. In all cases, the access-way is to be grassed and appropriately drained to prevent erosion.

- 3) Preferably, houses are to be located on, or at the base of, gentle south or south east facing slopes. These slopes are more damp and usually on the downslope side of a fire.
- 4) When building on slopes, it is safer to build the house on a 'cut in' bench rather than have it perched on the slope on stilts.
- 5) Ensure that there are at least 2 ways out from the site, with one preferably to the south east, so that in the event of fire, escape is away from the primary fire danger zone.
- 6) When siting buildings, consideration should be given to possible uses of existing trees for wind break protection. Eucalypts are preferable for windbreaks as they are capable of regeneration. Firebreak trees should be cleared of branches to a height of 2m above ground level to prevent ground fires climbing the trees.
- 7) Most fire resistant vegetation is that with high leaf moisture content, low resin content and minimal dead matter during the fire danger period. When choosing appropriate species consider:
 - a) The amount of water the trees will receive;
 - b) How trees burn once set alight; and
 - c) Likely regeneration or recovery rate after fire.
- 8) Trees should not touch walls and roofs. Plantings nearer buildings should be of the low hazard type. Fruit trees and vegetable gardens can serve as fire breaks on the fire approach side. Low ground covers should be planted and kept well watered in summer.
- 9) A well protected property still requires annual maintenance to maximise safety in the event of fire.

Appendix 1: Maps of Blue Mountains Escarpment Area

Figure E4.2: Map 1 – Landscape Context

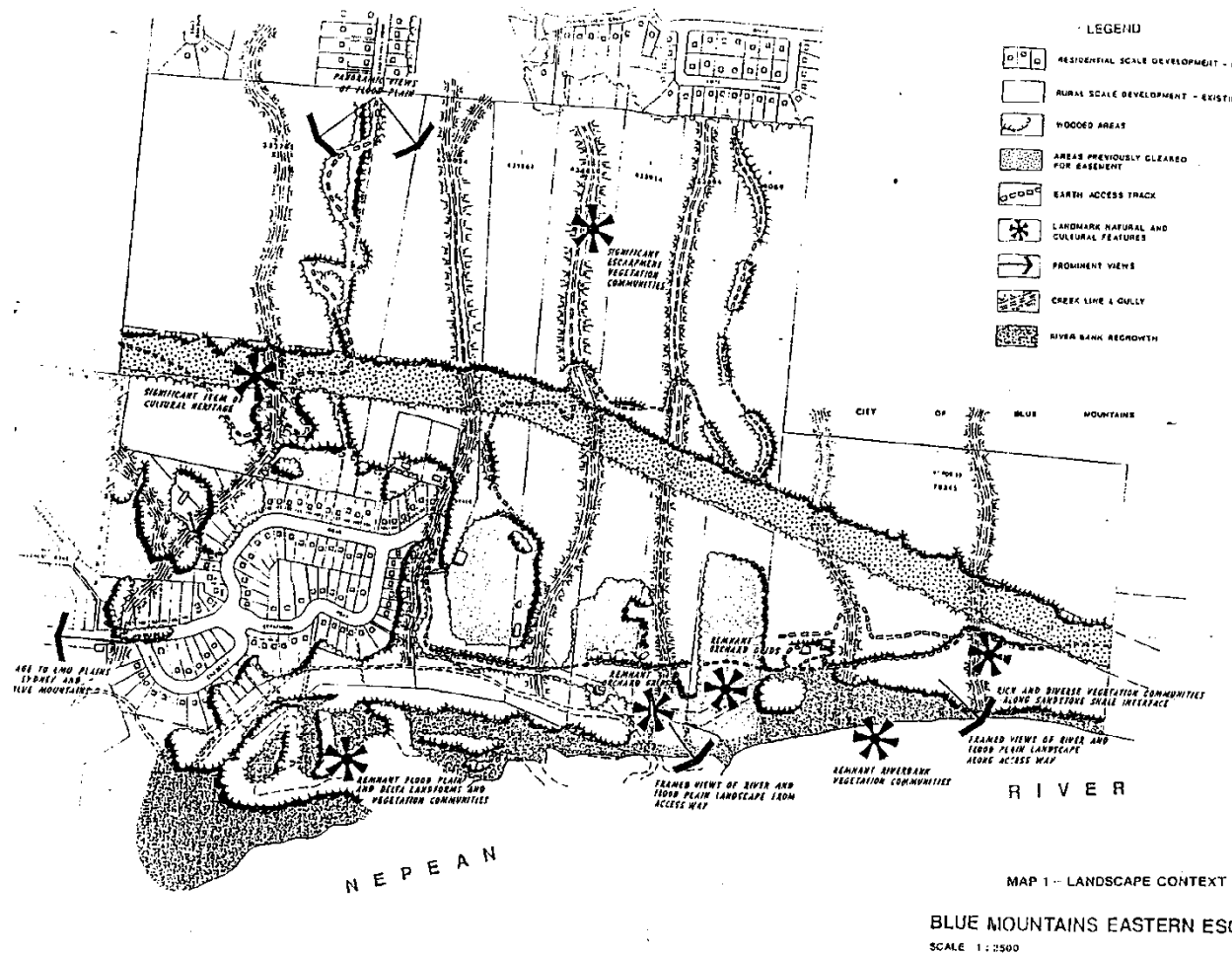


Figure E4.3: Map 2 – Physical Constraints

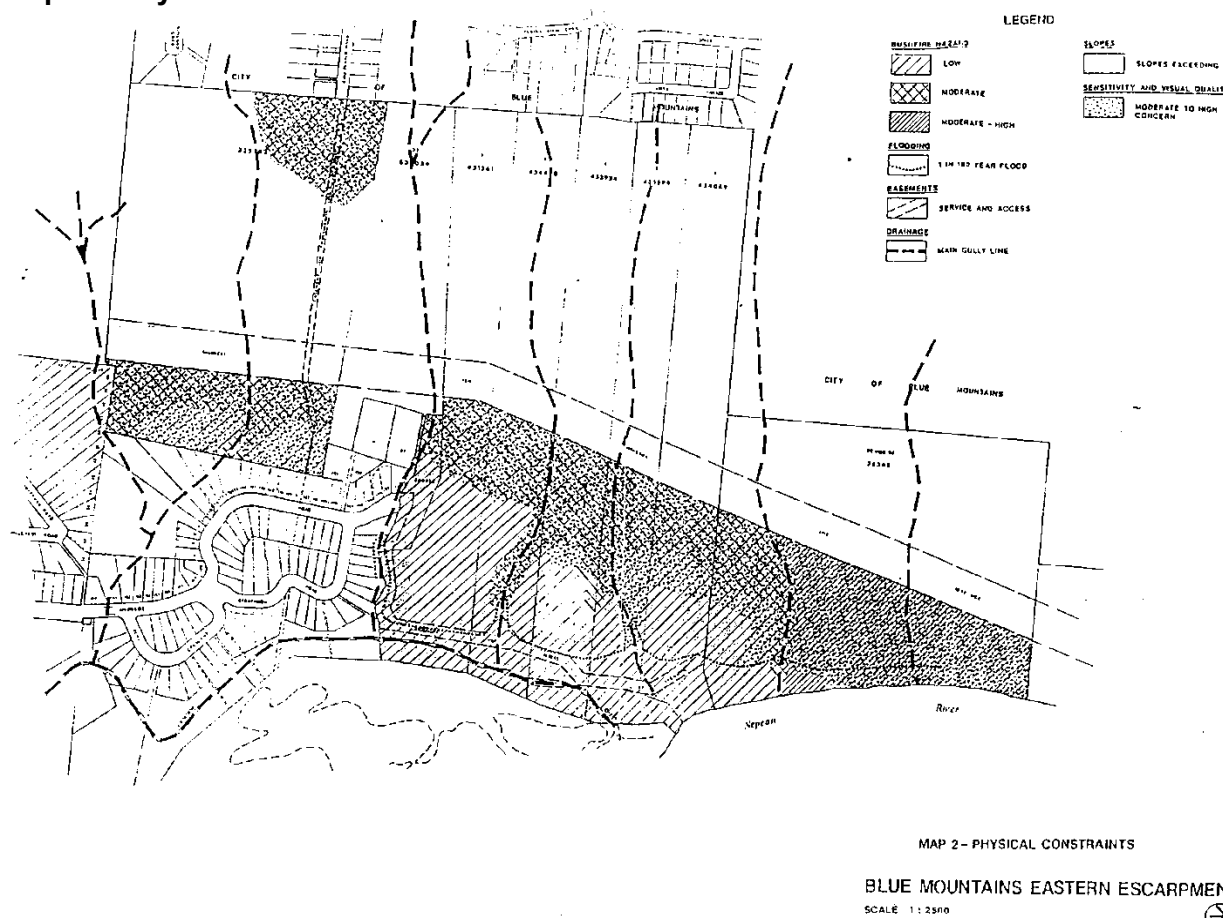
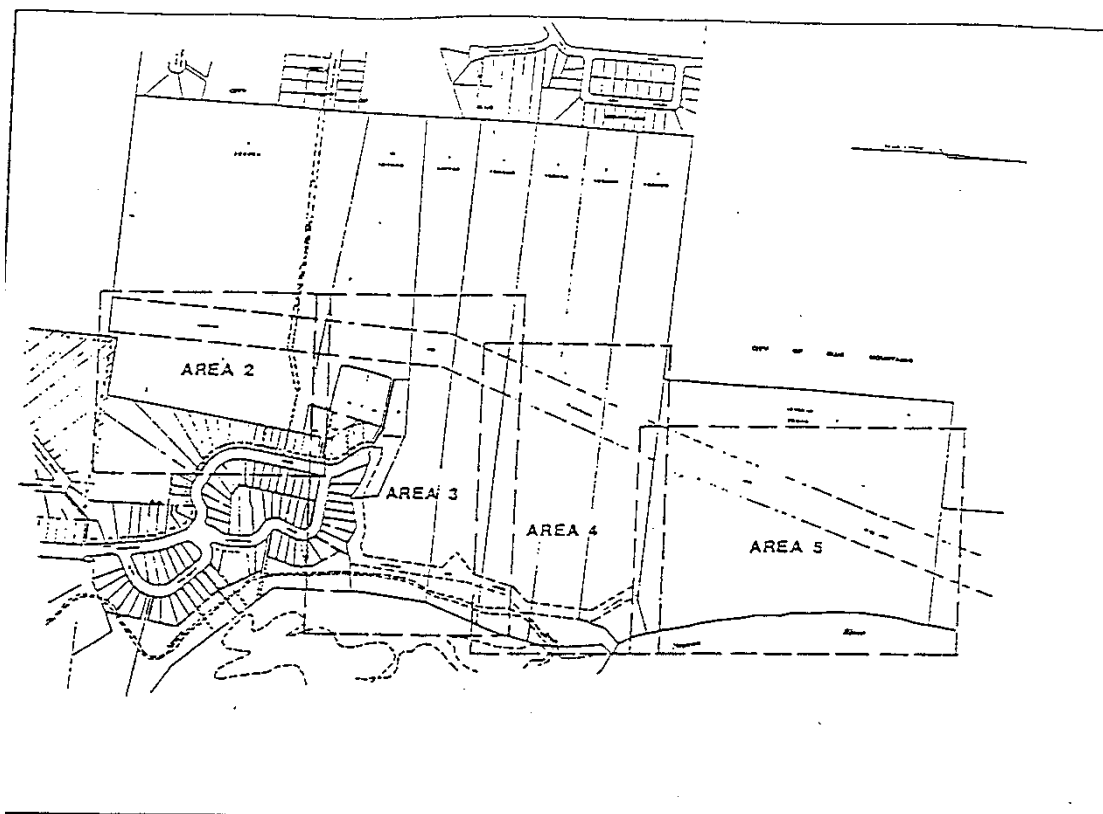









Figure E4.4: Map 3 – Subdivision Pattern and Development Controls



LEGEND

-  FIRE FIGHTING EASEMENT 5m WIDE TO BE CREATED
-  RESTRICTION TO USE (NO DEVELOPMENT)
-  DEVELOPMENT PERMITTED (SUBJECT TO PROVISIONS OF SITING DESIGN & MANAGEMENT GUIDELINES D.C.P.)
- * LOTS MARKED AS SUCH TO BE PLANTED WITH FIRE RESISTANT SPECIES
-  TRACK
-  RIGHT OF CARRIAGEWAY AND EASEMENT FOR SERVICES
-  BRIDGE
-  EXISTING BUILDINGS

MAP 3 - SUBDIVISION PATTERN AND DEVELOPMENT CONTROLS

BLUE MOUNTAINS EASTERN ESCARPMENT

Figure E4.5: Area 2

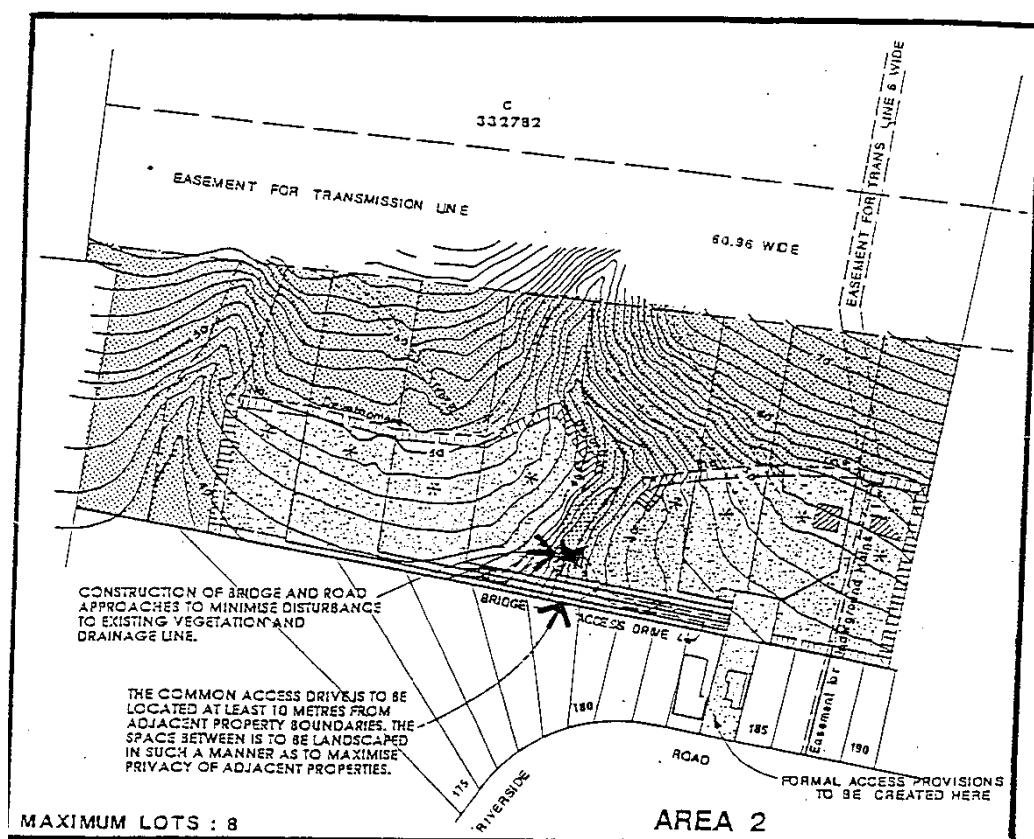


Figure E4.6: Area 3

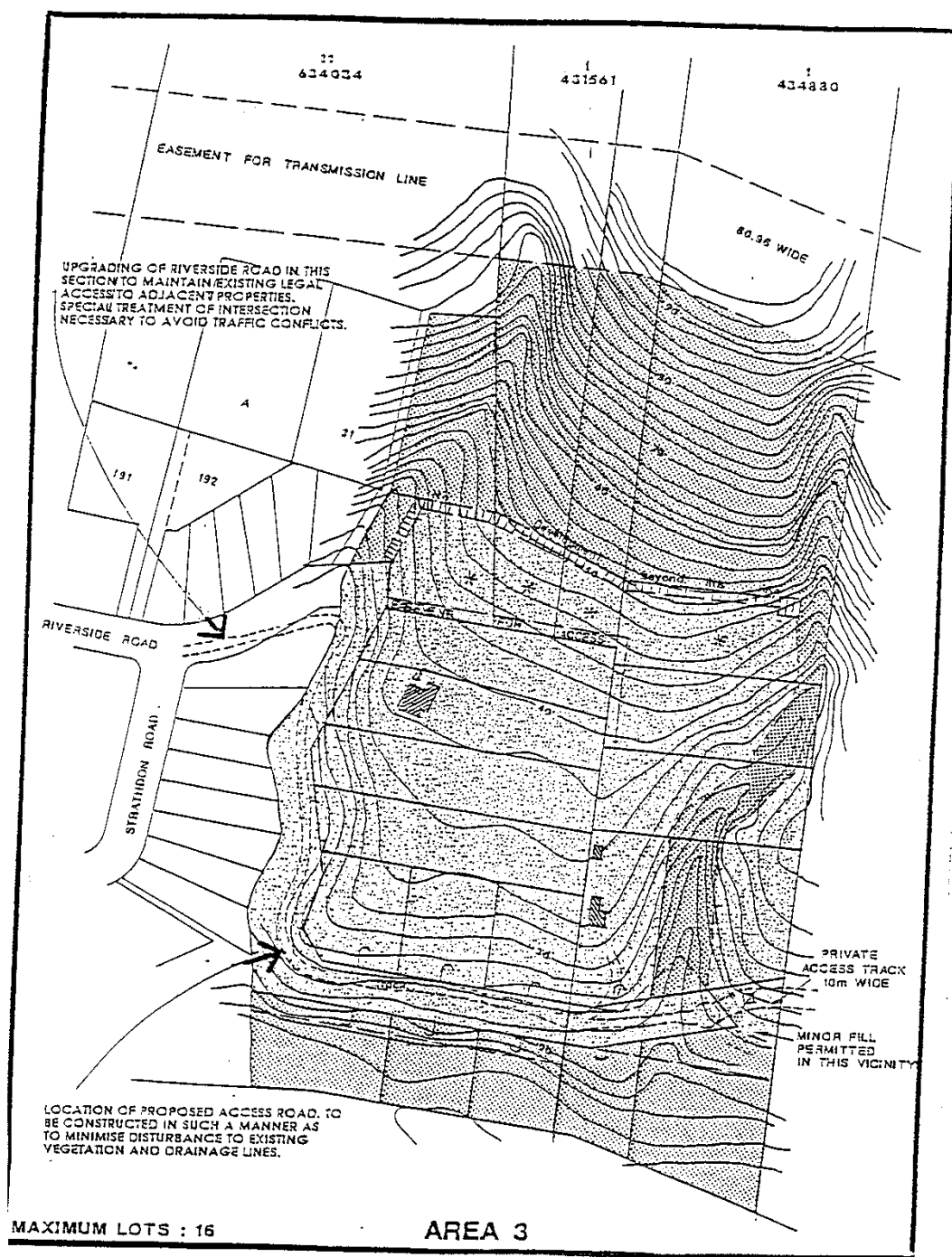
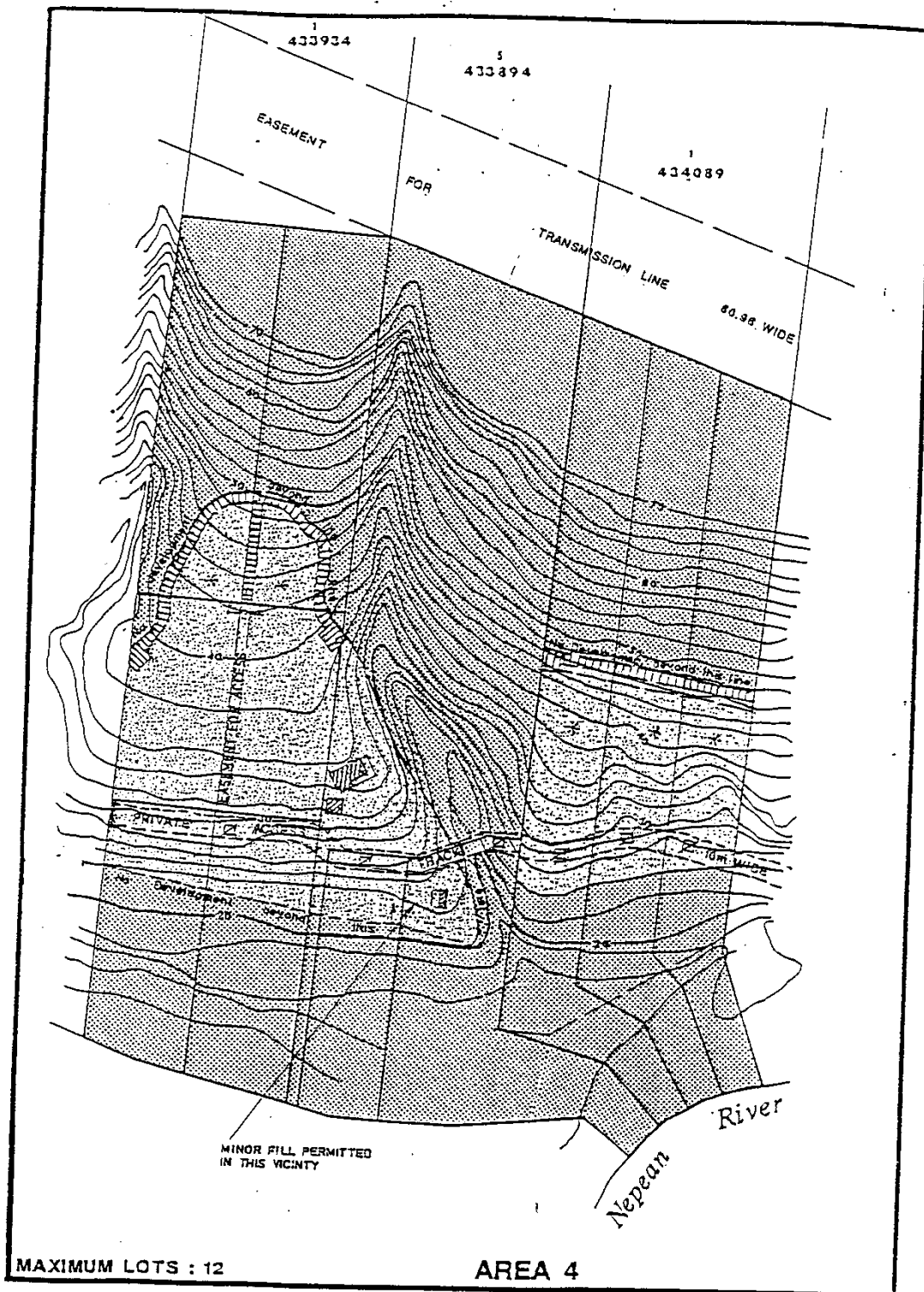


Figure E4.7: Area 4



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Figure E4.8: Area 5

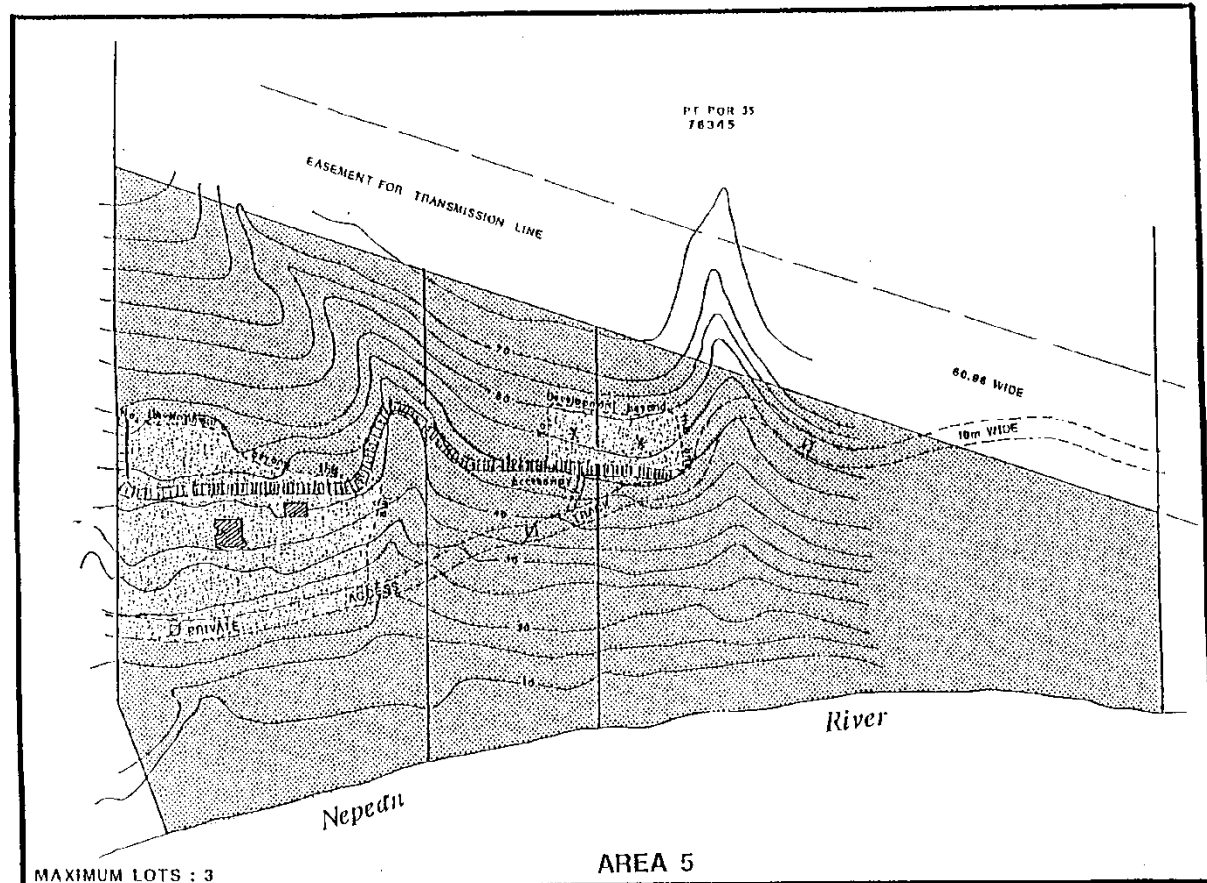


Table of Contents

PART A – EMU PLAINS COMMERCIAL AREA	2
5.1 INTRODUCTION	2
5.1.1 LAND TO WHICH THIS PART APPLIES	2
5.1.2 AIMS OF THIS PART	3
5.2 CONTROLS	3
5.2.1 COMMERCIAL DEVELOPMENT	3
5.2.2 TRAFFIC MANAGEMENT	3
5.2.3 PARKING	4
5.2.4 RESIDENTIAL DEVELOPMENT	4
5.2.5 PEDESTRIAN ACCESS	4

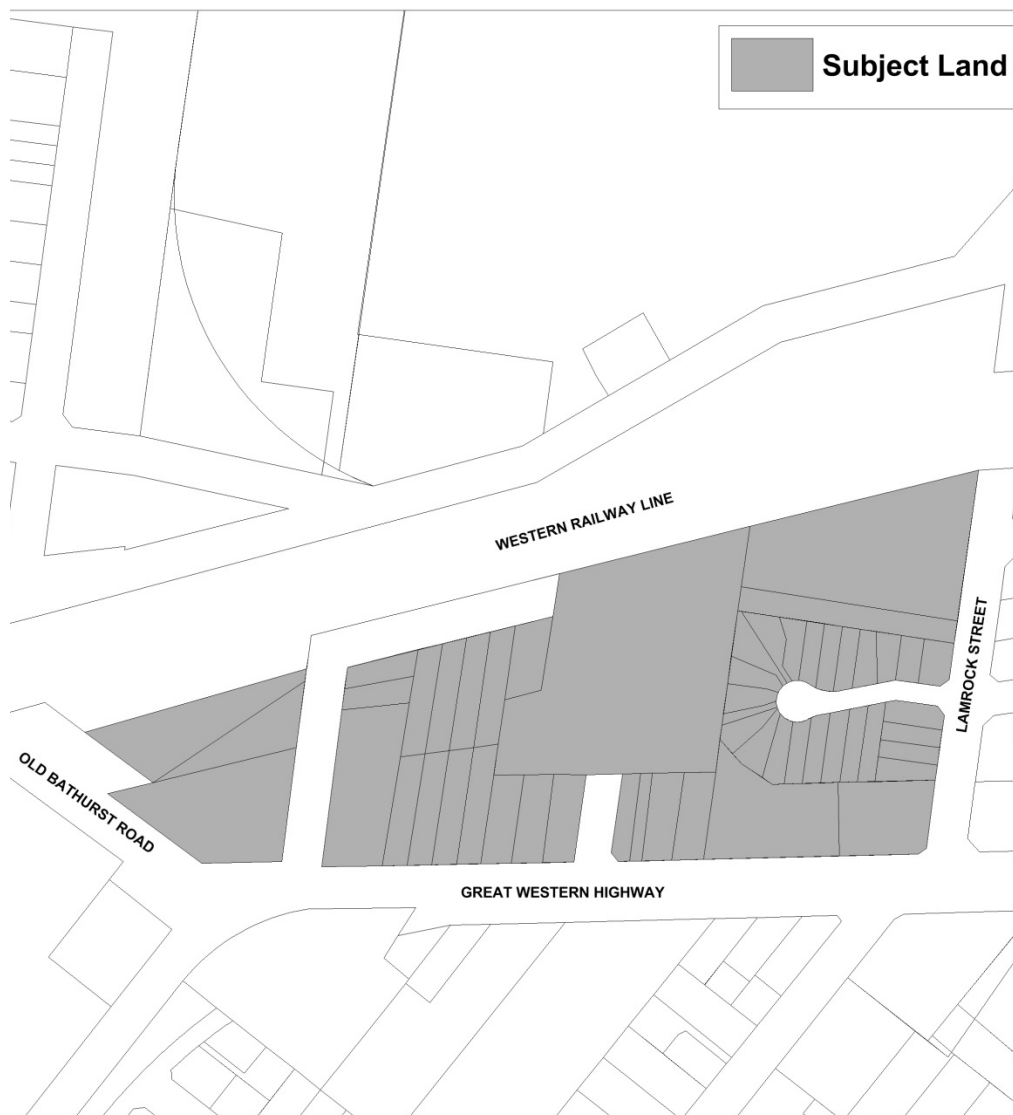
Part A – Emu Plains Commercial Area

5.1 Introduction

5.1.1 Land to which this Part applies

This section applies to land at Emu Plains, bounded by Old Bathurst Road, the Great Western Highway, Lamrock Street and the Western Railway line as shown in Figure E5.1.

Figure E5.1: Land to which this Part applies



5.1.2 Aims of this Part

- a) To provide urban design guidelines for commercial and residential development within the area;
- b) To reflect current traffic management conditions and to guide future traffic management and parking within the area;
- c) To ensure the enhancement of pedestrian access within the area and between surrounding areas; and
- d) To ensure the physical enhancement of the area through the provision of landscaping, street tree planting and good quality urban design.

5.2 Controls

5.2.1 Commercial Development

- 1) To enhance the landscape character of the area, street tree planting of advanced trees shall be provided:
 - a) along the street frontages of land in conjunction with any new development on that land. The street trees are to be consistent with Council's street planting requirements for the area; and
 - b) along the frontage of land to Council's car parking area in conjunction with any new development on that land.
- 2) Land fronting the Great Western Highway, and located between the existing shops and Lamrock Street, has potential for commercial development consistent with the land use zone. As such, development proposals on this land shall be designed:
 - a) to take account of the amenity of any adjacent residential development by providing:
 - i) Attractive external design and site planning to maintain residential privacy and minimise noise generation; and
 - ii) Buildings/s of maximum two storeys in height and designed to complement the existing one – and two- storey residential mix in the surrounding area.
 - b) to provide a staggered building setback which provides a visual link between the existing buildings adjacent to the land.

5.2.2 Traffic Management

- 1) Vehicular access to the precinct is provided via:
 - a) Station Street (left in, left out); and
 - b) Billington Place (signalised intersection); and
 - c) Lamrock Street (limited only to development fronting Lamrock Street, with no direct vehicular connection between Lamrock Street and Railway Row South).
- 2) All new development within the precinct shall be designed to provide satisfactory service vehicle access in accordance with the Plan.
- 3) All new development within the precinct shall contribute towards the cost of traffic management and pedestrian facilities identified within the Plan.

5.2.3 Parking

- 1) Development within the precinct shall provide on-site car parking in accordance with the parking section of this plan.

5.2.4 Residential Development

- 1) To enhance the landscape character of the area street tree planting of advanced trees shall be provided:
 - a) Along the street frontages of land in conjunction with any new development on that land. The street trees are to be consistent with Council's street planting requirements for the area; and
 - b) Along the frontage of land to Council's car parking area in conjunction with any new development on that land.
- 2) Development proposals for land adjacent to the western side of Lamrock Street which has potential for residential development shall incorporate:
 - a) measures to minimise the impact of noise on residents from the Western Railway line and Great Western Highway through appropriate design features, the use of suitable external materials, landscaping and site design;
 - b) dwellings of a scale and character which complement those existing in the surrounding area;
 - c) high-quality fencing of a scale, design and materials which does not present long, unbroken expanses to public view (e.g. lapped-and-capped paling fence, or masonry construction, with spacing for tree and shrub planting);
 - d) landscaping which complements the character of the area, and enhances both the amenity of the residents and views from public places. Landscaping must be implemented to provide privacy and shade for the residents.

5.2.5 Pedestrian Access

- 1) To enhance pedestrian access within the area and between surrounding areas foot paving shall be provided along the street frontages of land in conjunction with any new development on that land.
- 2) Foot paving treatment shall be consistent with Council's foot paving requirements for the area.

Table of Contents

6.1 PRELIMINARY	2
6.1.1 AIMS AND OBJECTIVES OF THIS SECTION	2
6.1.2 LAND TO WHICH THIS SECTION APPLIES	2
6.2 SUBDIVISION	3
6.3 SITE DEVELOPMENT AND URBAN DESIGN	5
6.3.1 HEIGHT	5
6.3.2 SITE COVERAGE	6
6.3.3 SETBACKS	6
6.3.4 URBAN DESIGN	9
6.3.5 SIGNAGE AND ESTATE ENTRANCE WALLS	11
6.3.6 LIGHTING	13
6.3.7 FENCING	13
6.3.8 SERVICES	14
6.3.9 TRANSMISSION LINE EASEMENT	14
6.4 ENVIRONMENTAL QUALITY	15
6.4.1 NOISE POLLUTION	15
6.4.2 AIR POLLUTION	16
6.4.3 STORAGE, TRANSPORTATION AND/OR PROCESSING OF CHEMICAL SUBSTANCES	17
6.4.4 ENERGY CONSERVATION	17
6.4.5 TRADING/OPERATING HOURS OF PREMISES	18
6.5 DRAINAGE	18
6.5.1 INTRODUCTION	18
6.5.2 WESTERN CATCHMENT – SOUTH CREEK	19
6.5.3 EASTERN CATCHMENT – ROPES CREEK	20
6.6 TRANSPORT NETWORK	21
6.7 BIODIVERSITY	23
6.7.1 BIODIVERSITY CONSERVATION AREA AND LANDSCAPE BUFFER	23
6.8 LANDSCAPING	25
6.8.1 OBJECTIVES	25
6.8.2 CONTROLS	25
6.9 LANDSCAPE AREAS	26
6.9.1 OBJECTIVES	26
6.9.2 CONTROLS	26
6.9.3 REQUIREMENTS	27
6.9.4 REQUIREMENTS	27
6.9.5 LANDSCAPE AREAS - OAKDALE SOUTH INDUSTRIAL ESTATE	27

E6 Erskine Business Park

6.1 Preliminary

6.1.1 Aims and Objectives of this Section

- a) To enable a diversity of employment generating development to locate within the Erskine Business Park;
- b) To ensure that the standard of development does not detract from or unduly impact upon the existing built environment in adjoining rural and residential areas; and
- c) To ensure that development occurs in an environmentally responsible manner and future development limits adverse impacts upon significant biodiversity.
- d) To provide a framework that will lead to a high standard of development by encouraging local employment and creating an area which is pleasant, safe and efficient to work in;
- e) To ensure that development takes account of the physical nature of the local environment, particularly Ropes Creek, ridgelines and the natural landscape;
- f) To ensure that development does not result in pollution of waterways and in particular of Ropes Creek and South Creek;
- g) To promote the development of a visually attractive physical environment where the form, scale, colour, shape and texture of urban elements are managed in a way which will achieve an aesthetically pleasing balance which does not adversely affect the amenity of the existing residential areas;
- h) To identify and provide for public amenities and service infrastructure to accommodate development;
- i) To promote the creation of a landscaped area within the electricity transmission easement to act as a buffer between the employment zones and the residential communities;
- j) To establish environmental criteria and controls for development within the area to ensure that the environmental quality of adjoining areas is not compromised;
- k) To ensure that development is consistent with the objectives of the Threatened Species Conservation Act with particular regard to the endangered ecological communities, flora and fauna present on the site;
- l) To facilitate conservation of urban bushland; and
- m) To protect, restore and enhance riparian corridors within Erskine Business Park.

6.1.2 Land to which this Section Applies

Erskine Business Park is part of the Western Sydney Employment Area (WSEA) which applies to land identified in the *State Environmental Planning Policy (Western Sydney Employment Area) 2009* (WSEA SEPP). The WSEA is located within the vicinity of the intersection of the M4 and M7 Motorways. The WSEA straddles four local government areas (Penrith, Blacktown, Fairfield and Holroyd) covering an area of approximately 2,450 hectares.

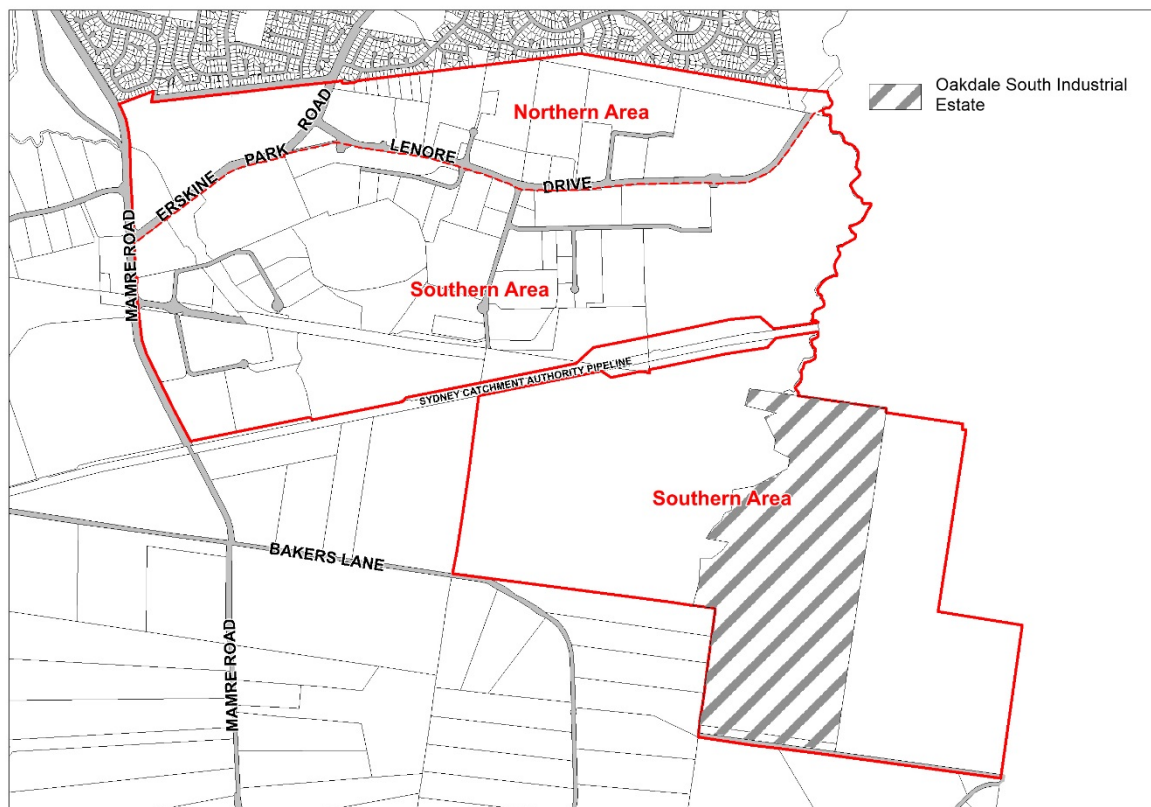
This Section applies to those WSEA lands within the Penrith LGA known as Erskine Business Park (as identified in Figure E6.1) and includes:

- a) The existing Erskine Business Park (divided into two precincts being the Northern Area and the Southern Area as shown in Figure E6.1); and

- b) An area also shown in Figure E6.1 which includes those lands south of the Sydney Catchment Authority (SCA).

This Section also provides more detailed provisions than are included in the WSEA SEPP in regard to development standards, the provision of public amenities and service infrastructure, and biodiversity conservation.

Figure E6.1: Land to which this Section applies



6.2 Subdivision

A. Objectives

- To achieve maximum flexibility for siting and location of buildings and to achieve an appropriate density of development;
- To provide opportunities for parcels of land of varying size and dimensions to satisfy market demand and the needs of the development industry;
- To ensure that subdivision design takes into account biodiversity considerations and facilitates minimum impact development to protect remnant native vegetation on the site and on adjoining land;
- To preserve the natural topography and physical characteristics of the land;
- To provide opportunities for large lot subdivision;
- To ensure that development occurs in a logical and staged manner;
- To minimise the number of road entry points to designated roads and the northern access road, thereby allowing more efficient traffic management;

- h) To create the opportunity for "individual" design solutions and innovative and efficient subdivision layout;
- i) To create opportunities for large land parcels to be developed in a co-ordinated, unified manner, featuring elements such as a common landscape theme/treatment, similar architectural treatments, and where possible, shared parking areas; and
- j) To protect, restore and enhance riparian corridors.

B. Controls

- 1) Lots fronting biodiversity areas or corridors are required to have on-site drainage controls in accordance with this section to prevent nutrient and erosion impacts on the bushland.
- 2) Lot design should maximise the conservation of the natural features of the site including important fauna habitats, rare or threatened plant habitats, and designated biodiversity areas.
- 3) Lots adjoining or containing watercourses are required to maintain or establish native vegetation riparian zones.
- 4) Perimeter roads are desirable from the point of view of bushfire control but may not be feasible if site disturbance is to be minimised.
- 5) The subdivision controls are:

Table E6.1: Subdivision Controls in Erskine Business Park

	Area	Control
Minimum Allotment Size	Northern Area (Refer to Figure E6.1)	20,000m ²
	Southern Area – excluding Oakdale South Industrial Estate (Refer to Figure E6.1)	10,000m ²
	E2 Environmental Conservation along the Ropes Creek Corridor.	40 hectares
	Land known as the Oakdale South Industrial Estate, Erskine Park (Refer Figure E6.1)	5,000m ²
Minimum Frontage	Northern and Southern Area (Refer to Figure E6.1)	60m
	E2 Environmental Conservation along the Ropes Creek Corridor	Not Applicable
	Land known as the Oakdale South Industrial Estate, Erskine Park (Refer Figure E6.1)	40m (excluding cul-de-sacs) 35m minimum lot width at building line

- 6) Council will consider a variation to the above allotment size and frontage for lots created for either “utility installations” or “utility undertakings” (e.g. electricity substation).

6.3 Site Development and Urban Design

6.3.1 Height

A. Objectives

- a) To encourage building forms that respond to the topography of the site and the relative position of the allotment to other allotments and the street;
- b) To ensure a scale of buildings which minimises the impact of development on adjoining residential areas; and
- c) To minimise the impact of development on views from adjoining residential areas.

B. Controls

- 1) The maximum height for buildings and structures in the Northern Area shown in Figure E6.1 shall not exceed 12m.
- 2) The maximum height for buildings and structures in the Southern Area shown in Figure E6.1 shall not exceed 15m, unless otherwise specified below.
- 3) Generally, buildings should be sited on mid-slope to avoid visual impact on ridges and to be in harmony with the existing landscape.
- 4) On sloping sites, the building or buildings should be designed, where possible, so as to "step" physically up or down the site to avoid visual impact on ridges.
- 5) Within the Oakdale South Industrial Estate, no warehouse buildings in Precinct 4, 5 or 6 shall exceed a ridgeline height of 13.7m. Refer to Figure E6.2 Oakdale South Industrial Estate – Precinct Plan.

Figure E6.2 Oakdale South Industrial Estate – Precinct Plan

6.3.2 Site Coverage

A. Objectives

- a) To limit the density of development; and
- b) To encourage the provision of open space and landscaping on development sites, consistent with the landscape objectives in the Landscape Design of this Plan.

B. Controls

- 1) Site coverage shall not exceed 50%, unless otherwise specified below
- 2) Site coverage within the Oakdale South Estate shall not exceed 65% (excluding building awnings).
- 3) Where land is included in Biodiversity Conservation Areas or Electricity Transmission Line Easements, that land can be included in site coverage calculations.

6.3.3 Setbacks

A. Objectives

- a) To provide an open streetscape with substantial areas for landscaping; and
- b) To enhance the visual quality of development and the urban landscape.

B. Controls

- 1) The setback standards are outlined in the table below. Where the property has frontage to more than one road, Council will consider a variation to setbacks on the secondary road frontage, as shown in Table E6.2 below.

Table E6.2 Setback Requirements

Setback Type	Setback
Designated Road (Mamre Road and Erskine Park Road)	20m
Northern Access Road (Lenore Drive and Erskine Park Link Road to Westlink M7)	20m
Southern Link Road	20m
Western Access Road (Trunk Collector)	20m
Other Road Frontages	15m
Estate roads within the Oakdale South Industrial Estate	7.5m
Rear and Side Boundaries (unless otherwise specified elsewhere in this table)	5m
Side Boundaries within the Oakdale South Industrial Estate	0m subject to compliance with fire rating requirements

Setback Type	Setback
Rear and side boundary setbacks to development adjacent to the Oakdale South Industrial Estate, excluding the southern property boundary and the eastern property boundary.	5m
Boundary setbacks along the southern property boundary of the Oakdale South Industrial Estate	30m
Boundary setbacks along the eastern property boundary of the Oakdale South Industrial Estate	10m
Transmission Line Easement	8m
Water Supply Pipeline	5m
Boundaries Adjacent E2 Environmental Conservation zone along the Ropes Creek Corridor.	10m

2) Notwithstanding Control (1) above, no development other than the following development is permitted within the defined setback for any road, other than Lenore Drive, Mamre Road and Erskine Park Road:

- a) Car parking
- b) landscaping in accordance with the provisions of the Landscape Design Section of this Plan;
- c) maintenance/rehabilitation of biodiversity corridors or areas in accordance with the provisions of the Vegetation Management Section of this Plan;
- d) utility services installation;
- e) accessways and driveways (not permitted in setbacks to designated roads);
- f) approved signage;
- g) street furniture; and
- h) drainage works.

Figure E6.3: Building setbacks (1)

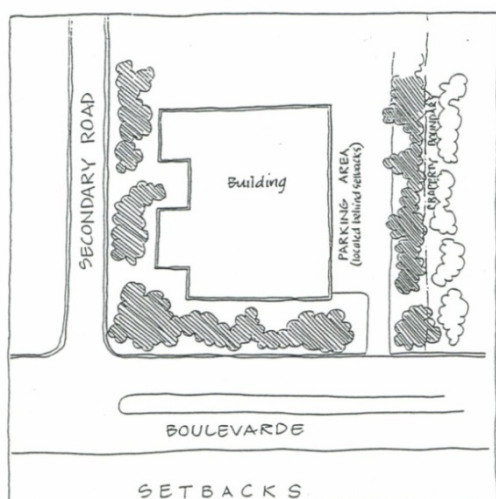
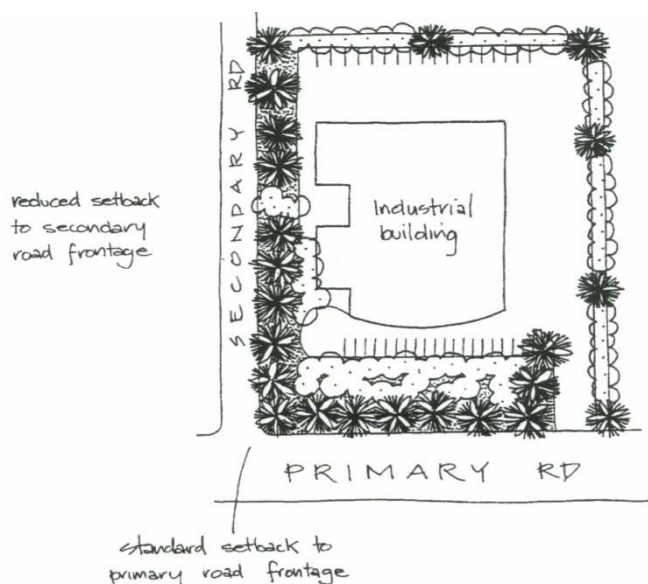


Figure E6.4: Building setbacks (2)



- 3) Notwithstanding Control (2) above, Council may consider a variation to permit car parking within part of the setbacks to Erskine Park Road and Lenore Drive for 1 – 23 Lenore Drive, Erskine Park (Lot 1, DP 1071114), which is the site on the corner of Erskine Park Road and Lenore Drive. Council shall consider the type and scale of the development when assessing any such request for variation to either building or car parking setbacks.
- 4) Existing remnant vegetation within front, rear and side setback areas shall be retained and enhanced as an integral part of the landscaping proposals for each development.
- 5) Where sites back onto designated roads or the main access roads, those setback areas shall be provided with mounded landscape screens. Existing remnant vegetation shall be retained and enhanced as part of those landscaping proposals.

6.3.4 Urban Design

A. Objectives

- a) To encourage a high standard of architectural design, utilising quality materials and finishes;
- b) To establish varied and articulated frontages facing or visible from public roads;
- c) To minimise perceived scale and mass and to prevent monotonous building forms resulting from poor design of walls or rooflines; and
- d) To ensure that new development contributes to the creation of a visually cohesive urban environment.

B. Controls

Architectural/Design

- 1) In assessing development proposals, Council will have regard to the quality of building design and materials (type and colour).
- 2) Prominent elevations, such as those with a frontage to the street or public reserves or those that are visible from public areas, must present a building form of significant architectural and design merit. The construction of large, blank wall surfaces is not permitted.
- 3) Large unrelieved expanses of wall or building mass will not be supported by Council, and as such should be broken up by the use of suitable building articulation, fenestration or alternative architectural enhancements.
- 4) The use of large, uninterrupted areas of metal cladding or untreated concrete surfaces for wall construction is not supported. Applicants shall vary materials or finishes for external walls to provide attractive streetscapes and quality building designs. Council may limit the use of a single construction material to 50% of a wall surface area.
- 5) All loading areas should be located towards the rear of allotments. Where possible, loading areas should be screened from the view of main road frontages through physical and/or vegetation screening.
- 6) Details of samples of external materials and finishes shall be submitted with the Development Application.
- 7) External materials should not have an index of reflectivity above 20%.
- 8) Energy efficient design principles should be employed in all building designs.
- 9) Walls shall be articulated to provide more varied streetscapes, where visible from public roads or adjacent residential areas.
- 10) Part of the cross-section of buildings shall be projected to reduce apparent height and scale of external walls, including:
 - a) awnings and/or upper storeys that project above footpaths;
 - b) roofs with eaves that project beyond external walls;
 - c) colonnades.
- 11) Entrances to buildings must be highlighted by architectural features consistent with the overall design of the building.
- 12) Particular care should also be taken in:
 - a) designing roof elements; and

- b) locating plant and mechanical equipment including exhausts, so as to reduce their visual impact from elevated locations.
- 13) External material colours to be consistent with the following palette of colours developed for Erskine Business Park:
 - a) Earth Tones - stone colours, browns, muted greens, sand, dark red/ plums; and
 - b) Cool Tones - soft greys, grey/blues.

Siting/Building Orientation

- 1) Building elevations oriented towards residential areas shall be minimised. Where site constraints create difficulties in complying in this regard, elevations shall be appropriately detailed using windows, broken building planes and other architectural devices.
- 2) Design and layout of buildings shall give consideration to local climatic conditions. For example:
 - a) where possible, buildings should take advantage of a north or north easterly aspect;
 - b) western orientations should be avoided;
 - c) trees should be planted around the building to create shade, screening and wind breaks.
- 3) Development should not seriously impede the access of solar radiation to surrounding land and development.

Figure E6.5: Pedestrian friendly urban design

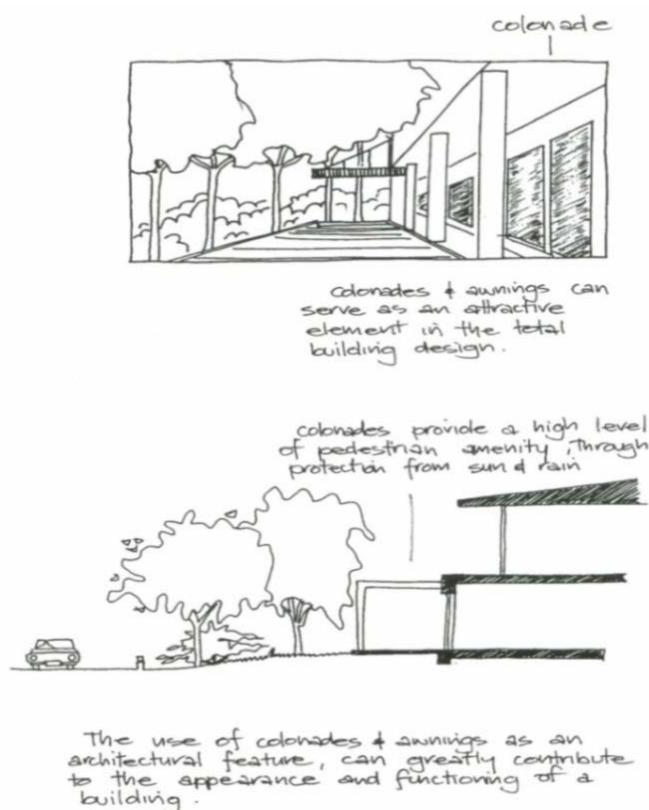
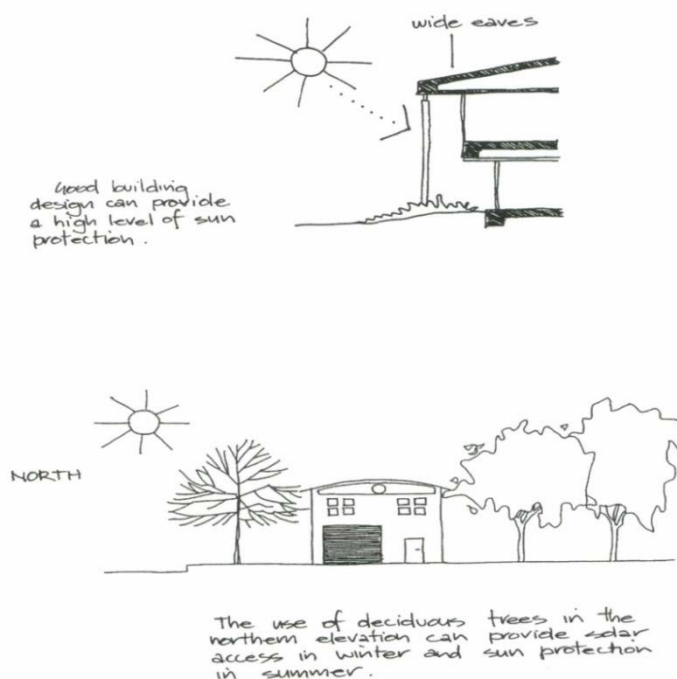


Figure E6.6: Energy efficient design



6.3.5 Signage and Estate Entrance Walls

A. Objectives

- a) To promote an integrated design approach to all signage in character with the locality and its architectural and landscape features;
- b) To provide a quality entrance statement and signage at each of the entrance points to the Estate;
- c) To prevent the proliferation of signs;
- d) To minimise the visual impact of signage;
- e) To prevent distraction to motorists and minimise the potential for traffic conflicts;
- f) To permit the adequate display of information concerning the identification of premises, the name of the occupier and the activity conducted on the land; and
- g) To encourage a coordinated approach to advertising where multiple occupancy of sites occur.

B. Controls

- 1) Signage on individual allotments will be required to comply with the provisions of the Advertising and Signage Section of this Plan.
- 2) In addition, all advertising is required to be:
 - a) constructed of high quality, durable materials;
 - b) considered in conjunction with the design and construction of buildings;
 - c) restricted generally to one sign identifying the name of the occupants and/or products manufactured or produced on the site; and

- d) contained wholly within the site.
- 3) Decorative masonry entrance walls and high quality Estate signage (indicating the name of the Estate) shall be provided, as shown on Figure E6.11 – Erskine Business Park Traffic Works, at the following entrance points to Erskine Business Park:
- a) the intersections of Mamre Road and Erskine Park Road;
 - b) on Erskine Park Road for south-bound traffic leaving the Erskine Park residential area;
 - c) the intersection of Mamre Road and the proposed Western Access Road; and
 - d) on Lenore Drive at the future eastern entrance to the estate at Ropes creek when the link to the Western Sydney Orbital is constructed.
- 4) The entrance walls and signage referred to in Control (3) above are to be funded by contributions levied under the Contributions Plan for Erskine Business Park.
- The proposed works for the Ropes Creek entrance to the estate will, however, be funded by a separate, second account within the Contributions Plan for this Estate.
- 5) Any business directory signage installed by developers shall be of a high quality and shall have a consistent design throughout the Estate.
- 6) The official name of the Estate shall be determined by Council in conjunction with the landowners/developers and shall be utilised in a marketing/promotions campaign for the Estate.
- 7) For buildings within the Oakdale South Industrial Estate, a maximum of one illuminated sign is permitted on each elevation of each of each warehouse building. All illuminated signage shall be oriented away from residential receivers.

Figure E6.7: Acceptable signage



6.3.6 Lighting

A. Objectives

- a) To provide adequate security lighting for business establishments, whilst ensuring there is no adverse impact upon the use and enjoyment of adjoining premises and surrounding areas, particularly residential and rural areas; and
- b) To provide suitable lighting along the road network to enhance landscaping.

B. Controls

- 1) Lighting details shall be provided as part of any relevant Development Application.
- 2) Lighting design should address the principles of Crime Prevention through Environmental Design (CPTED), where there is significant pedestrian activity, late night work-shifts or safety and security issues. These principles are outlined in the Site Planning and Design Principles Section of this Plan.
- 3) Adequate lighting should be provided to meet security requirements without excessive energy consumption. Lighting powered by solar batteries or other renewable energy sources is encouraged. The use of sensor lighting, both internally and externally, should be considered.

6.3.7 Fencing

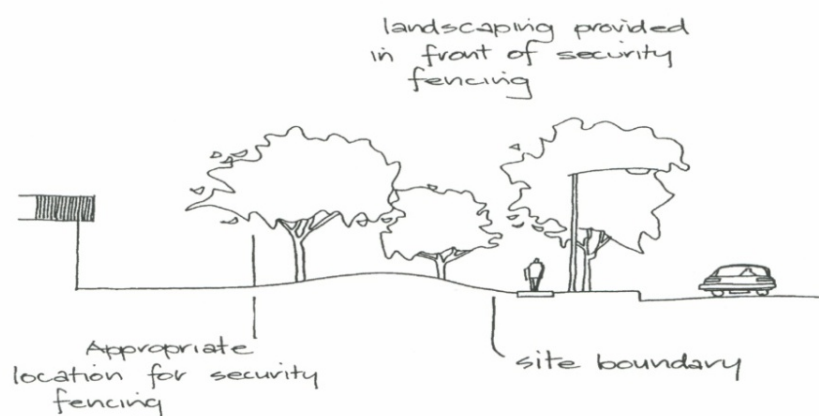
A. Objectives

- a) To ensure that the security needs of the development are satisfied in a manner which complements the surrounding landscape design and streetscape quality; and
- b) To ensure that fencing is consistently located behind the landscaped front setback and is of a consistent high quality.

B. Controls

- 1) No fencing other than a low ornamental type may be erected at the front site boundary. Should an applicant elect to use high security fencing, such fencing must be located either behind the landscape setback or alternatively within the landscaped area midway between the site front boundary and the building line.
- 2) Security fencing shall generally be of an "open" nature and of a dark colour, such as green or black plastic coated mesh fencing, which blend better with screening vegetation than galvanised wire.

Figure E6.8: Appropriate location for security fencing.



6.3.8 Services

A. Objectives

- a) To ensure that adequate services are available to facilitate development; and
- b) To ensure the co-location of services where possible.

B. Controls

- 1) Council shall require as conditions of any development consent that arrangements satisfactory to:
 - a) Sydney Water will be made for the provision of water and sewerage services;
 - b) Integral Energy have been made for the supply of electricity;
 - c) arrangements satisfactory to the relevant telecommunications authority will be made for the provision of telecommunications services;
 - d) Council have been made for the drainage of the land.
- 2) Council will require, as a condition of consent, that electricity and telecommunication mains be placed underground. Council also requires the co-location of services where this is technically feasible.
- 3) Council will require that all new premises within the Erskine Business Park be provided with state of the art telecommunications infrastructure utilising optic fibre or DSL technology to enable companies to access broad band services using high speed, high reliability telecommunications.

6.3.9 Transmission Line Easement

A. Objectives

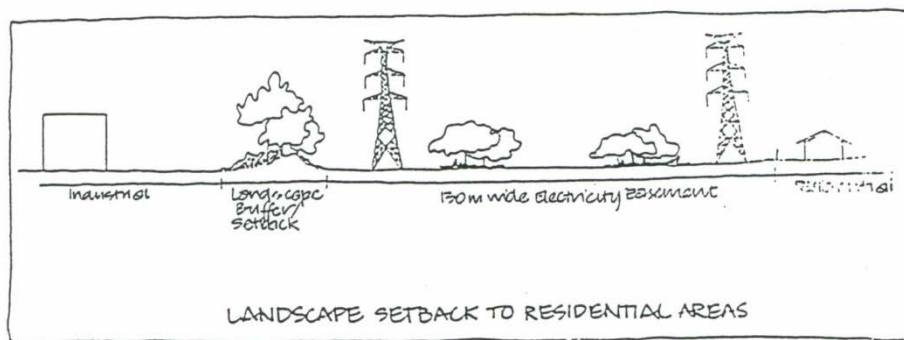
- a) To create a physical buffer between the Erskine Business Park and adjoining residential communities;
- b) To provide landscaped treatment which creates:

- i) an attractive outlook for adjoining residential properties; and
- ii) linkages between the residential areas and Erskine Business Park; and
- c) To provide limited opportunities for development of the land affected by the transmission line easement for landscaping, and/or maintenance/ rehabilitation of biodiversity conservation areas.

B. Controls

- 1) Council does not support the carrying out of development on land affected by the Transgrid Electricity Transmission Line Easement.
- 2) Approved landscape treatment (refer to the Landscape Design of this Plan), and/or maintenance/rehabilitation of biodiversity corridors or areas (refer Part 8 Biodiversity of this Section) shall be carried out on land affected by the transmission line easement.
- 3) Existing vegetation within this easement shall be retained and enhanced as part of any proposal by applicants to provide a landscape screen between a proposed development and adjacent residential areas.

Figure E6.9: Transmission easement



6.4 Environmental Quality

6.4.1 Noise Pollution

A. Objectives

- a) To establish design criteria for noise emissions from industrial or other employment-generating development;
- b) To establish acoustic environmental goals for existing and future adjacent residential areas; and
- c) To establish noise contributions for individual allotments within the employment zones when related to residential boundaries.

B. Controls

- 1) Any machinery or activity considered to produce noise emissions from a premise shall be adequately sound-proofed so that noise emissions are in accordance with the provisions of the *Protection of the Environment Operations Act 1997*.

- 2) The use of mechanical plant and equipment may be restricted in the Northern Area (Figure E6.1). Developers in all areas should ensure through design of their development that no offensive noise is emitted.
- 3) Where it is considered likely that a development may cause an adverse impact on nearby rural or residential areas, a noise impact statement from a qualified acoustical engineer will be required to be submitted to Council for consideration with the Development Application. A noise impact statement will need to demonstrate that the proposed development will not create any adverse impact.
- 4) All development shall comply with the requirements of relevant Australian Standards and State Government policies and guidelines relating to Noise.
- 5) The acoustic criteria adopted by this section will be implemented in the following manner:

Erection of Buildings

- 1) An acoustic design report shall be required for developments that are likely to generate high noise levels and for development in the area immediately adjoining residential areas. The acoustic design report should refer to the relevant Australian Standards and State Government policies and guidelines relating to Noise.
- 2) If an acoustic design report is not required at the Development Application stage, conditions will be imposed as part of the development consent which requires compliance with the relevant Australian Standards and State Government policies and guidelines relating to noise. Applicants must have regard to the criteria and demonstrate a standard of acoustic treatment for the building to comply with such criteria.
- 3) It is essential that potential developers investigate noise amelioration features to be included in building design, which will assist in achieving compliance with Council's acoustic criteria. Having regard to the surrounding topography, it is critical that the roof element of all buildings be acoustically capable of controlling potential breakout noise.

6.4.2 Air Pollution

A. Objectives

- a) To maintain existing air quality and improve local air quality where possible; and
- b) To ensure future development does not adversely affect existing air quality.

B. Controls

- 1) The emission of air impurities is to be controlled and limited to the standards allowed by the *Protection of the Environment Operations Act 1997*, to the satisfaction of Council and the Environmental Protection Authority at all times.
- 2) Applicants may be required to provide information detailing the potential impact of their development on air quality in the region.
- 3) An assessment of the merits of the proposal will be made at the Development Application stage. However, applicants should be able to demonstrate that the most efficient means of minimising emissions are being utilised.

6.4.3 Storage, Transportation and/or Processing of Chemical Substances

A. Objectives

- a) To ensure that the use, storage or transportation of any chemical substance/s do not have any detrimental impact on the environmental quality of the surrounding area; and
- b) To ensure any proposed development involving the storage, transportation and processing of chemical substances shall have regard to the requirements of State Environmental Planning Policy No. 33 - Hazardous and Offensive Development.

B. Controls

The following information is to be submitted with any Development Application which involves the storage, transportation and/or processing of chemical substances:

- 1) External storage of goods must be avoided wherever possible. Where the nature of the activity or the materials means that internal storage is impractical, all external storage areas must be located behind the front building setback. In addition, when assessing development applications involving external storage of goods, Council will take into consideration:
 - a) The proposed height and on-site arrangement of stored goods;
 - b) Visual impact of the storage area, and how this is proposed to be minimised (orientation, screening with landscaping and/or solid fencing etc.);
 - c) Access arrangements; and
 - d) Safety issues.
- 2) Detailed description of the use and all methods/procedures associated with the use, including flow diagrams.
- 3) A floor plan of the subject premises depicting the dimensions of the building and indicating the internal layout of all equipment, storage and display areas.
- 4) A comprehensive list of all chemicals/goods and quantities proposed to be utilised in the activity and actually stored on the subject premises.
- 5) A description of the method of storage of chemicals/goods on the premises, and the type of containment or packaging to be used.
- 6) A description of the method of transportation of chemicals/goods to/from the premises (include the size and nature of vehicles, proposed routes and frequency of delivery to and from the site).
- 7) Details regarding the number of vehicles likely to be involved with the use at any one time and the provision and allocation of storage/standing areas for such vehicles.
- 8) Details of onsite water quality control.
- 9) Details of waste treatment and transportation.

6.4.4 Energy Conservation

A. Objectives

- a) To encourage development designed to minimise energy usage; and

- b) To encourage development to consider the application of energy efficient technology and systems.

B. Controls

- 1) Development must demonstrate that the following have been taken into account in the design process:-
 - a) Potential for effluent re-use
 - b) Water minimisation techniques, including water recycling
 - c) Waste minimisation techniques, including recycling.

6.4.5 Trading/Operating Hours of Premises

A. Objectives

- a) To ensure the amenity of adjoining residential and rural areas is preserved; and
- b) To ensure development is provided the flexibility in trading/operating hours to ensure it is competitive and productive.

B. Controls

- 1) Construction works (all development) shall generally be restricted to the following hours:
 - a) Monday to Friday, 7.00 a.m. to 6.00 p.m.
 - b) Saturday, 7.00 a.m. to 1.00 p.m.
 - c) No work on Sundays or Public Holidays
- 2) The hours of operation for premises involved in any type of employment generating activity shall be dealt with on a merits basis. Council appreciates that because of the nature of certain activities shift work may be essential to the viability of the development.
- 3) In considering applications Council shall have regard to the likely impact of the trading hours of a particular activity on the amenity of adjoining residential and rural areas.

6.5 Drainage

6.5.1 Introduction

The provision of a drainage system is necessary to ensure that urban development is adequately serviced, occurs in an orderly manner and that best practice is applied to stormwater management solutions.

Council has determined that the most effective method to facilitate development is to encourage at-source pollution controls and promote the maintenance of predevelopment flow regimes from all developed land. In considering all Development Applications, Council will assess the adequacy of the trunk drainage system, downstream of the proposed development and its ability to meet the objectives listed below.

A. Objectives

- a) To ensure that an adequate and environmentally acceptable method of removing surface water and stormwater is implemented;
- b) To ensure that development does not result in the pollution of waterways and that the transportation of pollutants is minimised;

- c) To ensure that development does not create or exacerbate problems relating to saline or highly erodible soils;
- d) To protect, restore and maintain the physical and biological integrity of the waterways; and
- e) To ensure the overall drainage system is designed to minimise, to acceptable levels, the risk of local flooding.

B. Controls

- 1) The provision of drainage shall be in accordance with the Water Management Section of this Plan.
- 2) Council's preferred drainage/flooding/water quality control option for the Erskine Business Park is shown in Figure E6.10 - Erskine Business Park Drainage Works. Whole of life costs and ease of maintenance will be critical considerations in determining the form of the final drainage option.
- 3) There are two distinct sub-catchments within Erskine Business Park, identified generally as the "Western" catchment discharging into South Creek and the "Eastern" catchment discharging into Ropes Creek, both of which discharge into the greater South Creek Catchment.
- 4) The greater South Creek Catchment is subject to the criteria contained within *Sydney Regional Environmental Plan No. 20 – Hawkesbury – Nepean River (No. 2 – 1997)* and the Water Management Section of this Plan.

6.5.2 Western Catchment – South Creek

The western portion of the release area drains under Mamre Road, to the north of the Erskine Park Road intersection, and into South Creek. It is dominated by an old quarry site, which splits the catchment into northern and southern sub-catchments.

A. Controls

- 1) The Warragamba-Prospect Water Supply Pipeline traverses the southern sub-catchment from west to east and further subdivides it into two distinct catchments north and south of the pipeline.
- 2) The catchment south of the pipeline is located outside the boundary of Erskine Business Park. There are a number of partly formalised natural drainage lines, which drain this southern external catchment under the Water Supply Pipeline and into the Erskine Business Park. Existing flows entering from this southern external catchment are to be accommodated within the stormwater drainage infrastructure elements provided within the Erskine Business Park lands.
- 3) The crossings under the Water Supply Pipeline shall not be modified without prior approval from Penrith City Council and the Sydney Catchment Authority.
- 4) Major trunk drainage elements proposed for this western catchment are shown in Figure E6.10 – Erskine Business Park Drainage Works of this Section. Additional drainage infrastructure will be required to be provided upstream of these identified elements in conjunction with development of individual sites to achieve the desired stormwater management objectives.
- 5) This additional drainage infrastructure is to be constructed by the developer of the land concerned. Existing creek lines within areas of significant vegetation also form major trunk drainage functional elements and are not expected to be modified by development.

- 6) A proportion of flows from the land to the north of Erskine Park Road are to be directed into the proposed detention basin facility on the southern side of Erskine Park Road to ensure compliance with the appropriate stormwater management outcomes.
- 7) Should any development occur within the “south western” sub-catchment then all developments, within the sub-catchment, shall treat and attenuate their discharges on site to Council’s requirements.
- 8) The resultant flows shall be directed towards the north, along the eastern side of Mamre Road, into the detention basin/wetland treatment systems located adjacent to Erskine Park Road.
- 9) Only environmental flows, of appropriate quality, from any future development of the “south western” catchment, shall be directed across Mamre Road into the rural lands to the west.
- 10) All land identified by Council as performing a significant drainage function and where not specifically identified in the Contributions Plan, is to be covered by an appropriate “restriction as to user” as deemed applicable by Council, and created free of cost to Council.

6.5.3 Eastern Catchment – Ropes Creek

A. Background

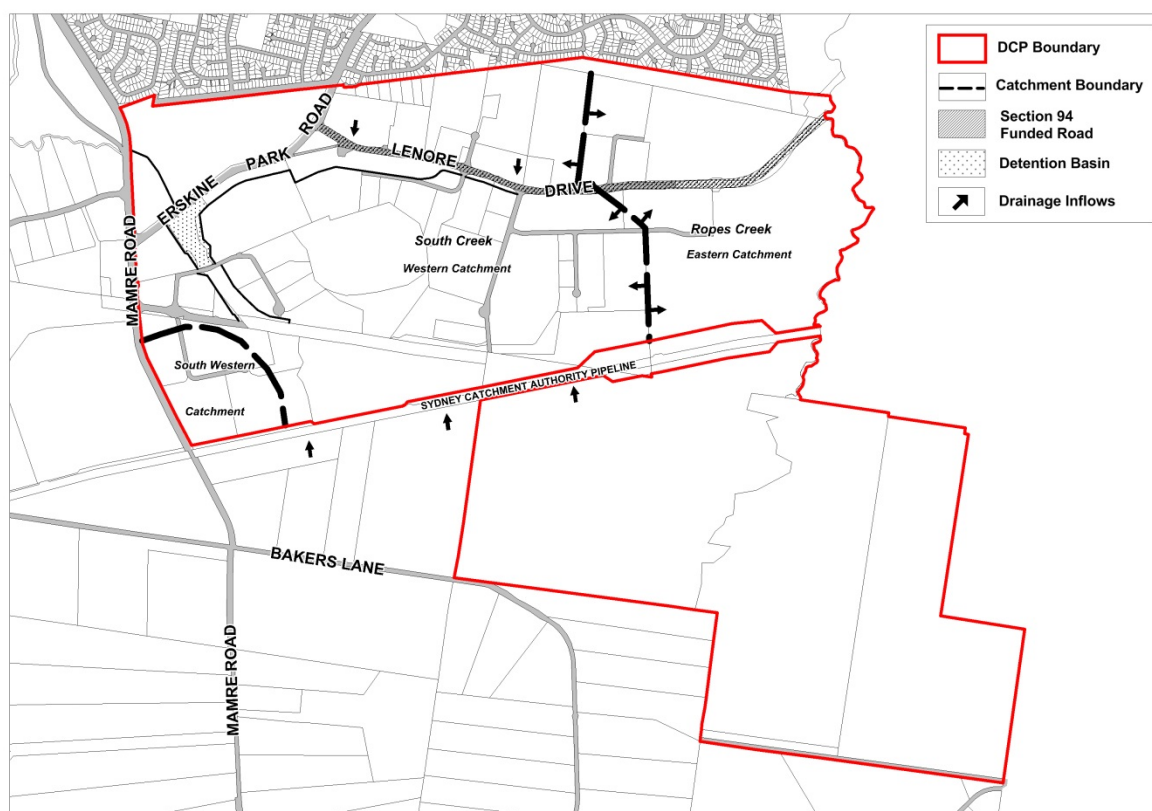
The eastern portion of the release area drains into Ropes Creek. A small section of this portion drains directly into Ropes Creek via a number of local swales, whilst the remainder of the catchment drains to an existing channel system located along the eastern side of the Erskine Park residential estate.

No trunk drainage channel elements have been identified in this catchment.

B. Controls

- 1) Development within the sub-catchment, which drains directly into Ropes Creek, will be required to direct its stormwater runoff into a detention basin facility. Special attention will need to be given to this aspect of the development during the subdivision design process.
- 2) Developments in this area will be required to design environmentally sensitive stormwater management solutions consistent with the constraints specific to the site.
- 3) All drainage infrastructure required in this catchment, shall be provided with the development of the land, at the developer’s cost.
- 4) Management of stormwater quantity and quality close to its source has the potential to limit the impact of major drainage works on the endangered vegetation throughout this area. Consequently, at-source, on-site controls are the preferred treatment strategy in this catchment and their implementation will be encouraged.
- 5) No regional water quality or water quantity controls have been identified in this Plan, however there will be a requirement for the runoff from the Eastern Catchment to conform to Council’s standard. This will be the responsibility of individual developers in that part of the estate. It is envisaged that these facilities will be provided near the Ropes Creek interface. There will be no levies associated with this Eastern Catchment.
- 6) The drainage solution shall include provision for water quality and quantity for all roads. This water quality/quantity system shall be clear of the 1 in 100 year flood line and biodiversity corridor.
- 7) Land identified by Council as performing a significant drainage function and where not specifically identified in that plan is to be covered by an appropriate “restriction as to user” as deemed by Council.

Figure E6.10: Erskine Business Park Drainage Works



6.6 Transport Network

A. Objectives

- To create a road network which enables a safe and efficient access for all users, while minimising through traffic on minor roads;
- To incorporate sustainable landscape and drainage opportunities in the design of the transport network;
- To encourage the use of efficient alternate transport, including public transport, bicycles, and pedestrians;
- To provide traffic facilities to give safe and efficient access to Mamre Road and Erskine Park Road;
- To provide for a future road link to the Westlink M7 and to provide all properties within this estate a direct connection to this link road;
- To minimise the number of road entry points to designated roads and the northern access road thereby allowing more efficient traffic management;
- To maintain the capacity of the State Arterial Roads (Erskine Park and Mamre) by minimising the number of access points; and
- To provide better connectivity between Erskine Business Park and other parts of WSEA.

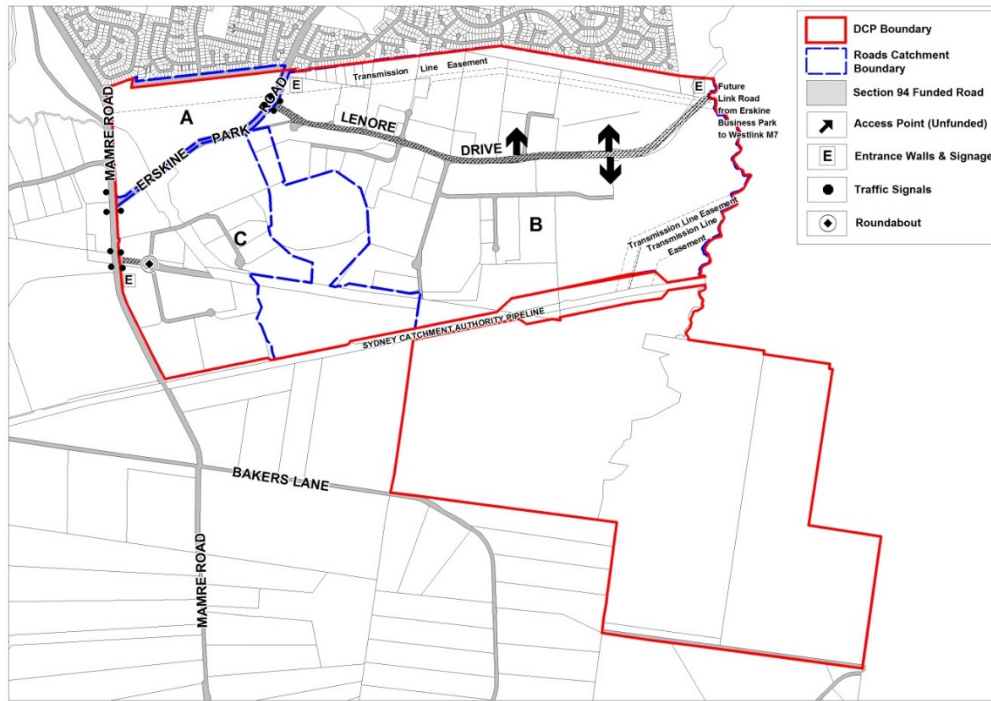
B. Controls

Internal Road System

- 1) The two main access roads to Erskine Business Park indicated in Figure E6.11 are:
 - a) Lenore Drive (Northern Access Road)
 - b) James Erskine Drive (Western Access Road)
- 2) Access Road.
- 3) The internal road system shall be provided in accordance with the principles and requirements set out below.
- 4) Access points shall be located so as to optimise safety, traffic flow and landscape opportunity. The Northern Access Road shall be access controlled such that:
 - a) **North of Northern Access Road (existing location of Lenore Drive):** Access to Lenore Drive will be limited to one access point per lot. Upon redevelopment, the access point for Lot 5A, DP162129 shall be combined with one of the adjoining lots.
 - b) **South of Northern Access Road:** Access to Lenore Drive shall be limited to the three points as shown on Figure E6.11 of this Section.
- 5) All parking shall be provided either on site or in centralised off-road locations.
- 6) Upgrading of Erskine Park Road and Mamre Road shall be undertaken to accommodate the increases in traffic generated by this development.
- 7) Direct vehicular access to Mamre Road shall only be permitted at the signalised intersections with Erskine Park Road and the James Erskine Drive. Direct vehicular access to Erskine Park Road shall only be permitted at the signalised intersection to Lenore Drive and at one combined intersection for the property north of Erskine Park Road and the eastern block for Lot 16 DP259146. No other direct vehicular access to these designated roads will be permitted.
- 8) All intersections within the internal road network shall incorporate traffic facilities, which promote safe and efficient traffic movement.
- 9) The proponent shall have regard to "Guide for Traffic Generating Development", Roads and Traffic Authority of NSW, October 2002.
- 10) Development shall, where appropriate, be designed to:
 - a) Allow all vehicles to either leave or enter the site in a forward direction;
 - b) Accommodate heavy vehicle parking and manoeuvring areas;
 - c) Avoid conflict with staff, customer and visitor vehicular movements; and
 - d) Ensure satisfactory and safe operation with the adjacent road system.
- 11) Full details of the volume, frequency and type of vehicle movements shall be submitted with the development application.
- 12) In general:
 - a) Turning circles will be required to be provided to accommodate the largest type of truck which could reasonably be expected to service the site.
 - b) All developments must be designed and operated so that a standard truck may complete a 3-point or semi-circular turn on the site without interfering with parked vehicles, buildings, landscaping or outdoor storage and work areas; and
 - c) Large-scale developments shall be designed to accommodate semi-trailers. In the case of the conversion of an existing development, should it appear that a truck turning circle may prove difficult; a practical demonstration may be required.

- 13) Council will assess the suitability of manoeuvring areas provided for large vehicles by reference to Australian Standard 2890 series.
- 14) Adequate space is to be provided within the site for the loading, unloading and fuelling (if applicable) of vehicles. These areas shall be screened from the road.

Figure E6.11: Erskine Business Park Traffic Works



6.7 Biodiversity

The Biodiversity Management Plan Erskine Park Employment Area, which identifies the Biodiversity Conservation Area, was devised by Council, Department of Planning and the Landowners to deliver a genuine balance between development and conservation to deliver dual outcomes of environmental protection and employment generation.

6.7.1 Biodiversity Conservation Area and Landscape Buffer

Figure E6.12 nominates the extent of the biodiversity conservation area/corridor to be conserved or managed for biodiversity purposes and the extent of the landscape buffer on Lot 11 DP229784, 576b Mamre Road, Erskine Park which has been replaced by a Landscape Buffer in accordance with a Major Project Approval issued by the Minister for Planning on 28 October 2009.

A. Objectives

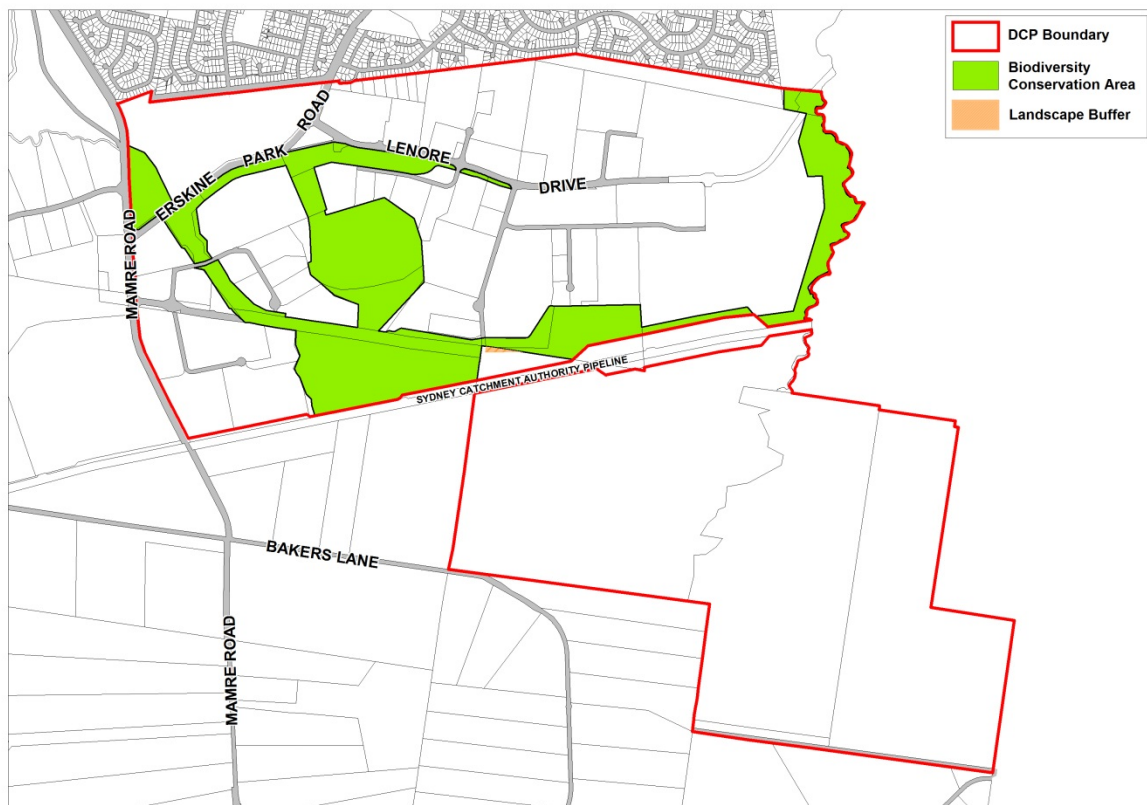
- a) To promote the conservation of urban bushland;
- b) To protect and preserve native vegetation and biological diversity in accordance with the principles of ecologically sustainable development;
- c) To retain native vegetation in parcels of a size and configuration which will enable the existing plant and animal communities to survive in the long term;
- d) To protect and enhance habitat for threatened species and endangered ecological communities;

- e) To provide a biodiversity corridor linking system linking remnant native vegetation across the site with the riparian biodiversity system within South Creek, the remnant native vegetation in Erskine Business Park and the Ropes Creek Riparian Biodiversity system; and
- f) To provide funding and management arrangements to enable the establishment of a biodiversity corridor and its ongoing maintenance.

B. Controls

- 1) No clearing of native vegetation shall occur within the Erskine Business Park Biodiversity Conservation Area and Landscape Buffer as outlined by Figure E6.12 – Biodiversity Conservation Area and Landscape Buffer.
- 2) No clearing of native vegetation shall occur within Erskine Business Park without the consent of Council.
- 3) Land located within the Biodiversity Conservation Area shall be managed in accordance with the endorsed Biodiversity Management Plan by Greening Australia or the land manager appointed by the Department of Planning and Environment.
- 4) A Landscape Management Plan is to be prepared to the satisfaction of Council for land located within the Landscape Buffer Area.

Figure E6.12: Biodiversity Conservation Area and Landscape Buffer



6.8 Landscaping

This section should be read in conjunction with the Landscape Design Section of this Plan.

6.8.1 Objectives

- a) To retain and enhance locally and regionally significant cultural and ecological values;
- b) To create a landscape character and amenity that is appropriate to the scale and nature of the development; and
- c) To develop an overall landscape character that is derived from natural and cultural landscape features contained within the site and immediate environs.

6.8.2 Controls

Removal of existing vegetation can result in a lower take up of water contributing to a rising ground water table and potential problems with salinity. Saline soils can damage roads, parking areas and buildings as well as ultimately causing scouring and effecting vegetation growth. Once soils have become saline it is virtually impossible to reverse the effects. Preservation of existing vegetation, particularly larger trees on ridgelines can help reduce or delay the impact of salinity. Existing trees are to be preserved wherever possible. The siting and layout of a development at the initial concept stage must consider the location of trees with a view to their preservation. Existing trees shall not be removed prior to the written consent of Council being obtained.

The existing vegetation to be retained must be protected from soil compaction, root, trunk and limb damage, soil contamination and changes in surface level that will affect the health of the specimen. Protection measures are to be installed prior to the commencement of any earthworks. A man-proof, sturdy and durable chain-wire fence of sufficient height shall be erected 1m beyond the dripline of each specimen for the full circumference of all vegetation to be protected.

6.9 Landscape Areas

6.9.1 Objectives

- a) To provide functional areas of planting that enhance the presentation of a building;
- b) To screen undesirable views;
- c) To reduce building energy consumption;
- d) To provide outdoor staff amenity facilities;
- e) To select tree species that are “low maintenance” planting to reduce the impact of green waste;
- f) To provide wildlife habitats; and
- g) To contribute to the overall character of the locality.

6.9.2 Controls

Selection and Use of Planting Material

- 1) A framework planting of endemic canopy and shrub species is to be established for all developments. This will enhance the sense of place for each development site. Consideration to be given to features such as bird attracting qualities, aromatic foliage and flowers, and habitat value as well as visual qualities, site suitability, and proximity to biodiversity corridors or areas. Habitat value is to be given high priority.
- 2) Smaller scale and less visually prominent planting may include species other than those endemic to the area. This will produce variety and interest in the landscape at this scale. This does not apply to development adjoining Biodiversity Areas or within or adjoining Biodiversity Corridors.
- 3) Property entrances may be highlighted with feature planting, and need not be limited to native or endemic species. No plant species shall be used on site that could become a weed within remnant bushland areas or creek lines.
- 4) Plant species should be carefully selected to meet service authority requirements in easement locations.
- 5) Plant material in car parks should be used to provide shade, ameliorate views of large expanses of paved areas and cars, and to identify entrances to car parks.
- 6) Trees providing shade in car parks should be given sufficient area for root development.
- 7) Narrow strips of landscaped area between an allotment boundary and building, or between parking areas and a building should be avoided.
- 8) Island planting beds should be interspersed throughout large parking areas. Planting should consist of ground covers, shrubs to 1m, shade producing and canopy species.
- 9) Plant material shall be a mix of super-advanced, advanced and normal nursery stock that will provide a quick effect especially in visually prominent areas. Larger plant sizes would be appropriate in some locations.

- 10) Groundcovers should be considered as a grass alternative in areas not specifically designed for pedestrian use.
- 11) Presentation of a building facade to the street should be complemented with appropriate enframing or screening vegetation. The visual impact of large expanses of wall should be reduced in scale by architectural treatment as well as by dense grove planting or other landscape design solutions.
- 12) Consideration should be given to solar access and energy conservation, with the appropriate use of deciduous trees.

6.9.3 Requirements

Hard Landscape Materials

- 1) Paving, structures and wall materials should complement the architectural style of buildings on the site and be of local origin where possible.
- 2) Materials should cause minimal detrimental visual impact, and the use of subtle coloured materials and block or brick paving is encouraged.

6.9.4 Requirements

Performance Standards and Maintenance

- 1) Landscape works are generally constructed at the completion of building works.
- 2) However, Council may require by way of conditions of development consent, that tree bonds be placed over existing significant trees on a proposed development site. Any such existing trees and all landscape works from the approved development should be maintained throughout the duration of the construction works and in perpetuity for the life of the development. The onus for satisfactory maintenance is on the applicant until the development has been completed and on the owner thereafter.
- 3) These requirements should be read in conjunction with the Landscape Design Section of this Plan.

6.9.5 Landscape Area Requirements

Landscape Setbacks for the Oakdale South Estate

- 1) The following minimum landscaped setbacks shall be applied at the Oakdale South Estate:
 - (a) Southern Link Road: Average of 20m depth along the site frontage. 20m setback / 10m landscape.
 - (b) Collector Road: 7.5m, or average of 50% of setback along the frontage
 - (c) Local Estate Road: Average of 50% of setback along the frontage.
 - (d) Side boundary: No minimum requirement.
 - (e) Rear boundary: 2.5m
 - f) Southern property boundary: perimeter landscape treatments along the 30m earth bund wall on the southern boundary of the OSE; and,

g) Eastern property boundary: a 10m wide landscape setback along the entire length of the eastern property boundary.

Figure E6.13: Landscaping for a large industrial site.

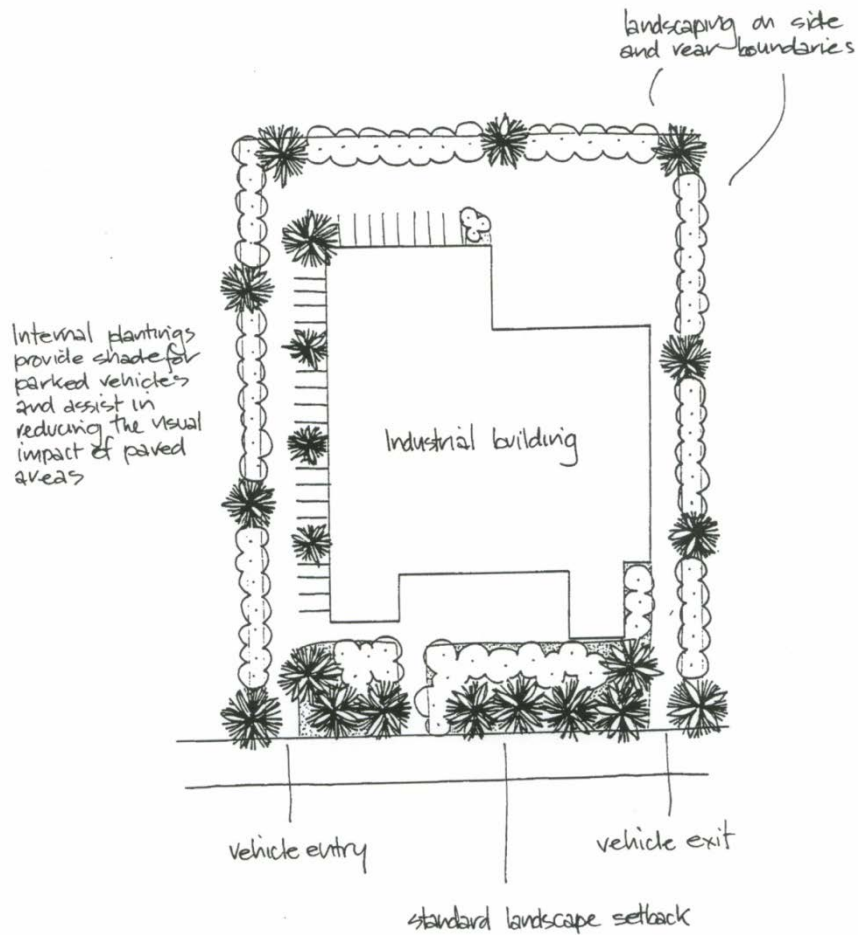
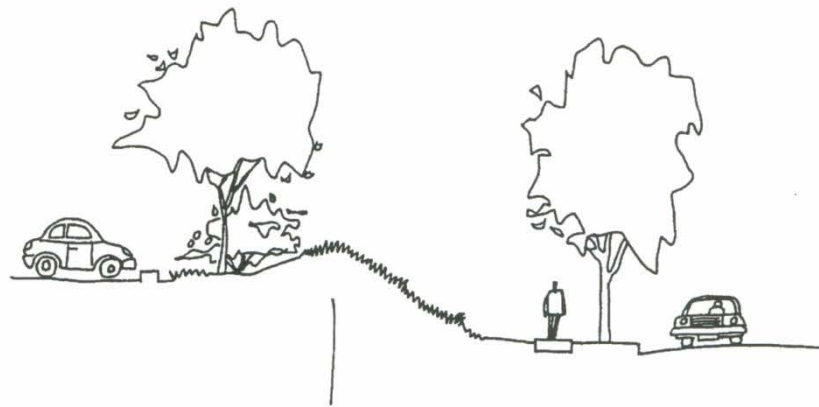
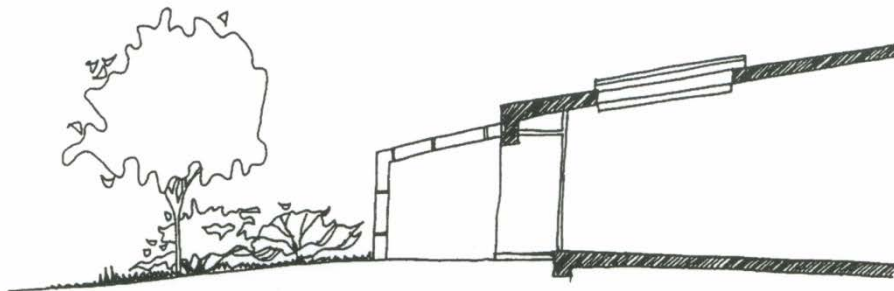


Figure E6.14: Landscaping concepts



The use of a landscaped mound provides a good visual screen for parking and outdoor storage areas.



Integration of built forms and landscaping can be achieved through the use of groundcovers & colonades

Table of Contents

PART A – GLENMORE PARK STAGE 1	2
7.1 PRELIMINARY	2
7.1.1 LAND TO WHICH THIS PART APPLIES	2
7.2 GLENMORE PARK TOWN CENTRE	3
7.2.1 PRELIMINARY	3
7.2.2 CHARACTER OF THE GLENMORE PARK LOCAL CENTRE	4
7.2.3 URBAN CONTEXT	5
7.2.4 LAND USE CONTROLS	7
7.2.5 BUILT FORM CONTROLS	8
7.2.5.1 BACKGROUND	8
7.2.5.2 OBJECTIVES	9
7.2.5.3 STREET SETBACKS AND BUILDING ALIGNMENT	9
7.2.5.4 BUILDING HEIGHT CONTROLS	12
7.2.5.5 BUILDING EXTERIORS	14
7.2.5.6 INTERFACE WITH RESIDENTIAL AREAS	15
7.2.5.7 LANDSCAPE DESIGN	15
7.2.5.8 PUBLIC DOMAIN	17
7.2.6 CAR PARKING AND ACCESS	24
7.2.6.1 VEHICLE FOOTPATH CROSSINGS AND DRIVEWAYS	24
7.2.6.3 ON-SITE PARKING	27
7.2.6.4 SITE FACILITIES AND SERVICES	28
7.2.7 DESIGN PRINCIPLES	29
7.2.7.1 ENERGY EFFICIENCY	29
7.2.7.2 WATER MANAGEMENT AND WATER SENSITIVE URBAN DESIGN	29
7.2.8 WASTE MANAGEMENT	30
7.2.9 SAFETY AND SECURITY (CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN)	31
7.2.10 SITE TOPOGRAPHY	31
7.2.11 OTHER CONTROLS	31
7.2.11.1 TOWN SQUARE	31
7.2.11.2 COMMUNITY CENTRE BUILDING	33
7.3 GLENMORE PARK MAJOR LAND USE	34
7.3.1 LAND TO WHICH THIS SECTION APPLIES	34
7.3.2 PURPOSE OF THE SECTION	34

Part A – Glenmore Park Stage 1

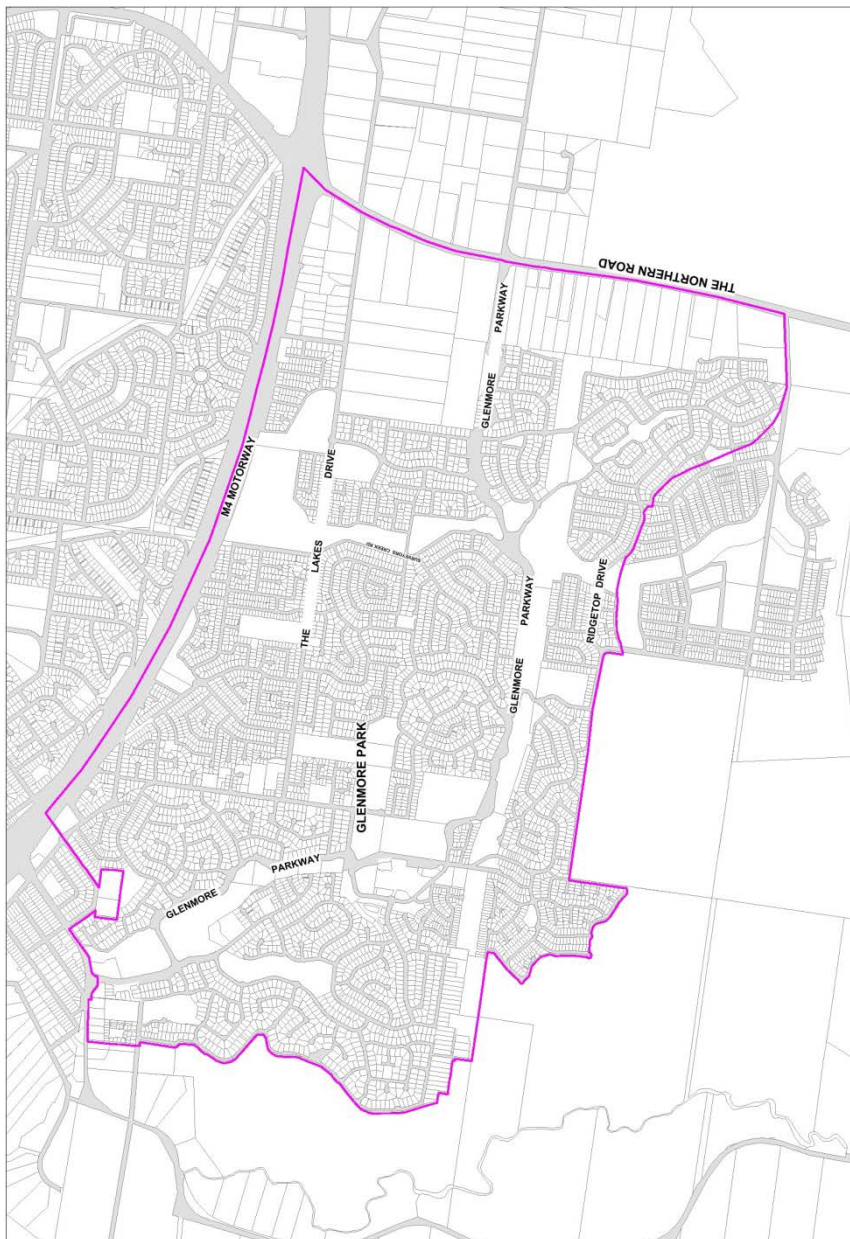
7.1 Preliminary

This Section relates to site specific controls within the Glenmore Park Area Stage 1 area to supplement the provisions of the Penrith LEP 2010.

7.1.1 Land to which this Part Applies

This Part applies to the land as shown on Figure E7.1 below.

Figure E7.1 Glenmore Park Stage 1



7.2 Glenmore Park Town Centre

7.2.1 Preliminary

Land to which this Section Applies

This section applies to development on land covered by the Glenmore Park Local Centre (GPLC) as shown in Figure E7.2. This section provides specific controls for the GPLC in addition to the general controls elsewhere in this DCP.

Figure E7.2 – Map of Glenmore Park Local Centre



A. Objectives

This section of the DCP provides more detailed provisions for development in the GPLC that will:

- a) Contribute to the growth and character of GPLC ,
- b) Provide a framework to guide the future development of GPLC ,
- c) Ensure development responds to the characteristics of the site and the amenity of the surrounding neighbourhood,
- d) Ensure future redevelopment integrates with existing access paths, pedestrian and cyclist
- e) Promote public/community transport,
- f) Encourage and facilitate high quality design, and

- g) Protect and enhance the public domain.

The objectives of the controls for GPLC, in addition to the general objectives of the plan and other sections, are to create a community focus and to facilitate development that will:

- a) Provide for a range of retailing and community activities to primarily serve the Glenmore Park community's needs.
- b) Provide accessibility within the GPLC, connecting to activity nodes, public open space and surrounding residential areas.
- c) Encourage quality urban design and architectural excellence development within GPLC that creates an attractive, vibrant and distinctive centre.
- d) Encourage pedestrian and bicycle access and public transport through improved linkages and accessibility to the centre.
- e) Provide flexibility in the future planning of the centre to ensure that future development can be responsive to changes in market, consumer and planning considerations.
- f) Achieve an attractive and sustainable GPLC.
- g) Ensure the development of the GPLC is consistent with the desired future character as described in the following section.

7.2.2 Character of the Glenmore Park Local Centre

The main principles of the Glenmore Park Town Centre are:

- a) The desire for a Town Centre with a "heart".
- b) The Town Centre needs to have its own identity.
- c) The Town Centre is the hub or focus for the local Glenmore Park community
- d) Desire for a distinctive and proportioned, attractive, safe 'main street' character.
- e) Provide facilities sufficient to serve its residents.
- f) The Town Centre is a place to serve the entire community of Glenmore Park.

Importantly, however, the form and location of the development will change over time in response to changing needs. This Part of the Section responds to the growth and changing demands of Glenmore Park and its community over time.

While the centre is referred to as a "Local Centre" in the DCP, it is known as a "Town Centre" by the local community.

Town Terrace East/West Spine Road

Town Terrace east/west spine road is to provide an active shopping street. It will function as the town centre's "Main Street" providing a convenience to shoppers, in a setting that provides for both retail/commercial services.

Town Terrace East West Spine Road will be abbreviated *Main Street* within this part of this Section and should be treated as a pedestrian priority zone.

Town Square

The Town Square is to be the primary urban public focal point of the GPLC. It is to be a vibrant, active town square with links to both business as well as community facilities. The Town Square should be a pedestrian zone characterised by activity around its perimeter, pleasant micro climate including weather protection at its edges, comfortable seating with distinctive landscaping and public artwork, access to food and toilets and be conveniently located for as many people as possible. Its design needs to be flexible enough to

accommodate special community events with or without closing the vehicular traffic or disrupting the dominant existing pedestrian flows and paths.

Existing Community Centre

The existing community centre is to be integrated into the GPLC through improved pedestrian amenity along the east/west Main Street and by improving entry points to the Community Centre.

The treatment of the interim space between the Community Centre and future development adjacent to it is to be an attractive area that may incorporate landscaping with good active surveillance. Vehicular car parking either undercroft or at grade will not be allowed.

Demarcating Public and Private Spaces

Planning for the development of the Local Centre needs to clearly differentiate between “public spaces” and “publicly accessible private spaces”. Future development of the centre is to provide a public street or Main Street which is open to the public at all times. Conversely, the centre is also expected to incorporate internal malls (including the existing mall) that will be publicly accessible at times when the centre is operating.

Arcades, laneways and terraces though privately owned are to be perceived as part of the public network. Redevelopment is to ensure good accessibility, connectivity and design continuity within the GPLC and reinforce the sense of these spaces being part of the perceived public realm.

Gateways

The current GPLC lacks identifiable gateways. Redevelopment will need to address this aspect of the GPLC by providing welcoming, visually interesting and unique responses at the entrances by a combination of landscape, built form and artwork. Additionally, the gateways will be designed to calm traffic movements, allow safe pedestrian or cyclist movement and provide necessary systems of *way finding* graphics in order to make sense of accessing and parking within the centre.

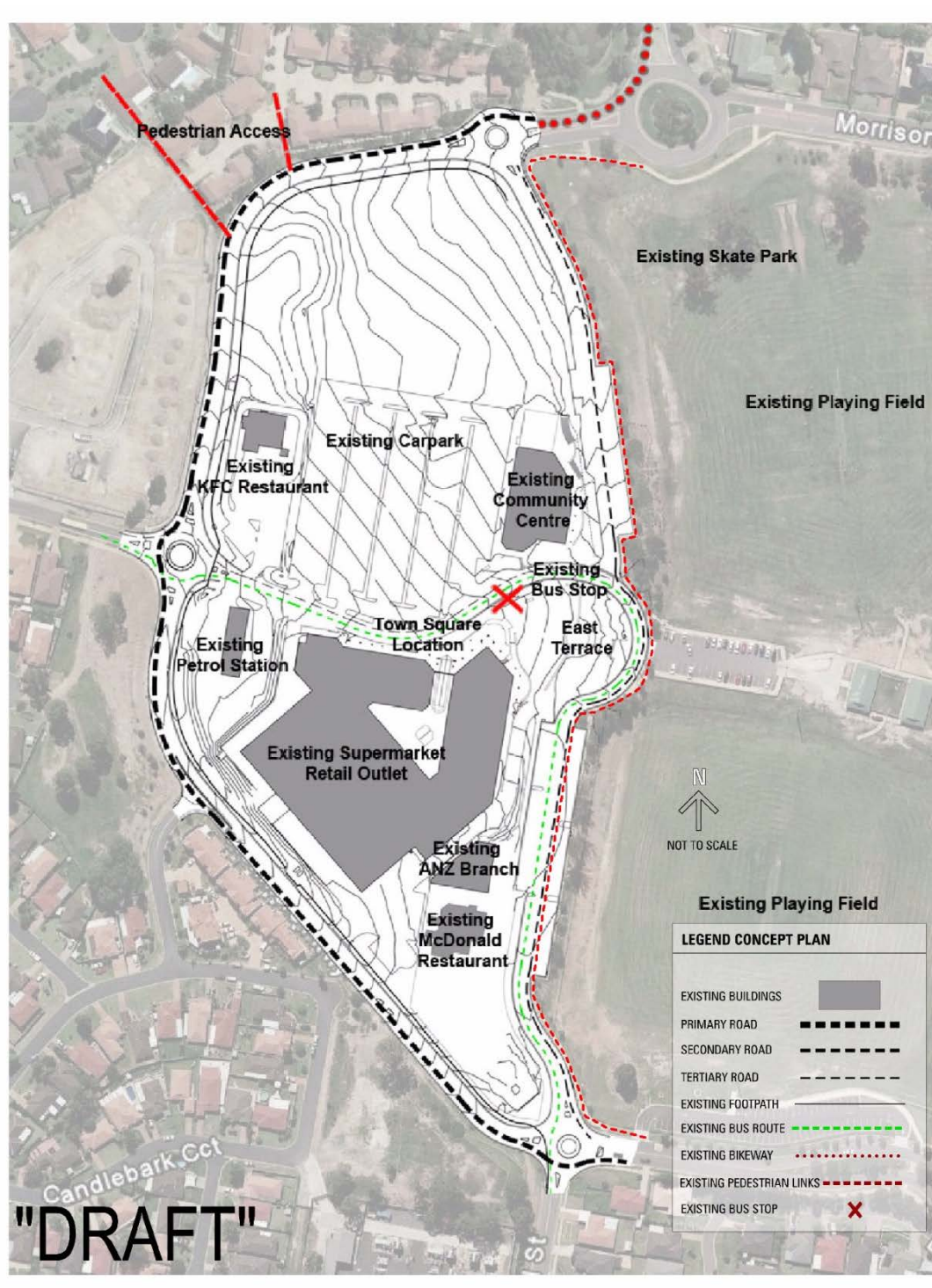
7.2.3 Urban Context

The GPLC represents an important focal point in the local community. Key characteristics include:

- a) The site connects to Glenmore Parkway, the primary arterial vehicle route through the precinct.
- b) Glenmore Parkway also provides a bus route through the local area with a bus stop located on the western side of the centre.
- c) Luttrell Street provides a secondary road adjacent to the playing fields linking into the Main Street.
- d) Urban residential development surrounds the GPLC to the south, west and north, with the playing fields and a school overlooking the GPLC to the east.
- e) There are existing points of pedestrian paths and connections from the residential precincts as well as from the reserve to the east. A pedestrian path exists to the north east across Glenmore Parkway.

Some of these characteristics are shown in Figure E7.3: The Context Plan.

Figure E7.3 Context Plan



7.2.4 Land Use Controls

A. Background

A Concept Plan, providing a vision for the future evolution of the centre has been prepared. The Concept Plan is shown in Figure E7.4. The main features of the GPLC include:

- a) An east/west spinal Main street connection to Luttrell Street/Town Terrace and Glenmore Parkway.
- b) A Town Square in the centre of the east / west Main Street.
- c) An extension of the existing arcade axis to the north of Main street/Town Square within any proposed development.
- d) Two to three storey developments in key locations in the centre.
- e) A mix of retail, commercial and community uses supermarkets, speciality retail, service retail, office premises and community centre.
- f) Provide opportunity for office premises and residential above ground level.
- g) Designated at grade and underground parking areas.

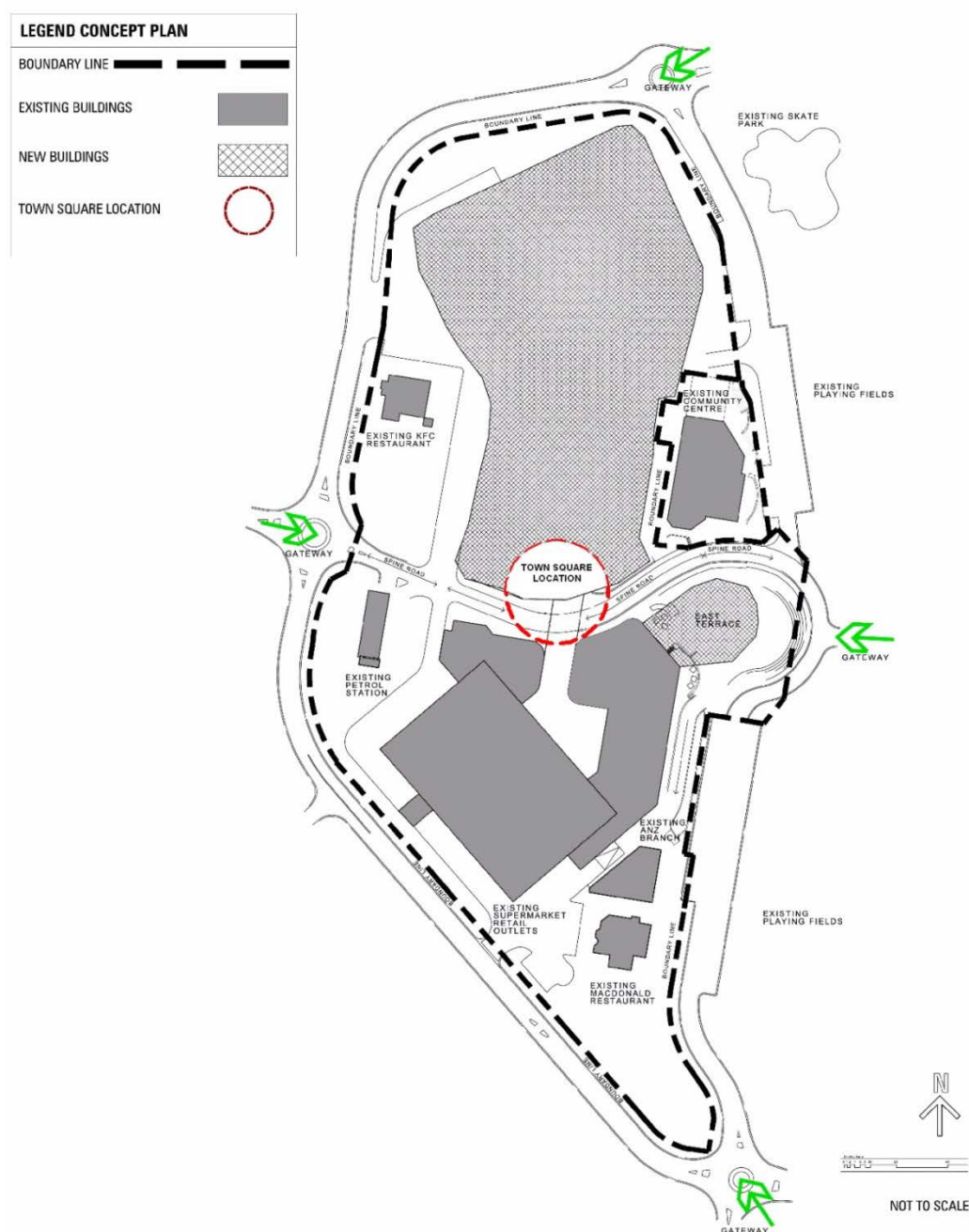
B. Objectives

- a) To encourage a variety of uses in the GPLC;
- b) To create lively streets and public spaces in the Town Centre; and
- c) To enhance public safety by increasing activity in the public domain on week nights and weekends.

C. Controls

- 1) This section allows flexibility for the location of uses, except as follows:
 - a) Development along the Main Street and the Town Square should have active retail premises on the ground floor such as café, restaurants and shop fronts.
 - b) Development along the Luttrell Street frontage should, where possible, be used for community services, offices and retail purposes to activate Luttrell Street.
 - c) Future land uses on the site are to complement and extend the range of the existing activities within the centre.
 - d) The Main street is to be primarily a high quality vibrant pedestrian oriented street, which allows for local access to both public transport options, taxis, cyclists as well as a limited amount of short term parking for shoppers on both sides of the street.

Figure E7.4 – Concept Plan for site



7.2.5 Built Form Controls

7.2.5.1 Background

The GPLC will continue to evolve and expand over time to provide retail services to the whole of the Glenmore Park community. The development provisions in this Section of the DCP are intended to encourage high quality design for not just new development, but to encourage improvements to the existing town centre. The resulting built form and character

of new development should contribute to an attractive public domain and produce a desirable setting for its intended uses.

Future development should aim to retain the local atmosphere that is characterised by:

- a) A diversity of retail, commercial and community services.
- b) A small scale, safe, compact environment.
- c) An attractive social focus.
- d) Convenient and safe access for pedestrian, cyclists, public transport/taxis and motor vehicles.

7.2.5.2 Objectives

In addition to the general objectives of this Part, the controls in this section aim to:

- a) Establish an appropriate scale, bulk and form of buildings.
- b) Achieve active street frontages where appropriate.
- c) Provide for pedestrian comfort and protection from weather conditions.
- d) Define the public domain area and make these accessible.
- e) Ensure that new development makes a positive contribution to the streetscape or public domain.
- f) Encourage high quality architectural and innovative design for all buildings and ensure that there is a comprehensive suite of street furniture elements to compliment the architecture.
- g) Encourage use of quality and durable materials.
- h) Provide for quality public domain to contribute to the amenity of the town centre and a sustainable urban environment.
- i) Ensure the design of buildings considers the surrounding residential amenity and responds accordingly to the amenity of the surrounding residential precinct without reducing the quality of that existing amenity.

7.2.5.3 Street Setbacks and Building Alignment

A. Background

Street setbacks and building alignments establish the front building line and reinforce the spatial definition of streets. They contribute to the public domain by enhancing streetscape character and the continuity of street facades. Setbacks also allow for improved ventilation, daylight and solar access and increased privacy.

B. Objectives

- a) To achieve a consistent definition of the public domain and street edge.
- b) To provide street setbacks appropriate to building function and character.
- c) To locate active uses closer to pedestrian activity areas.
- d) To maintain solar access to the public domain, particularly during the critical mid-winter lunch time periods of 12pm to 2pm.
- e) To ensure an appropriate interface with adjoining land uses.

- f) Allow for and assist in defining street landscape character where appropriate.
- g) Ensure any new development provides building separation to achieve the above objectives.
- h) Reduce the apparent bulk and scale of buildings by breaking up expanses of building facades with modulation of form, variation of setback, modulation of window and a range of other architectural design means.

C. Controls

- 1) Setbacks are to be generally consistent with those shown in Figure E7.5. Architectural features and other projections such as car park ramps which may encroach into this setback area are subject to appropriate design guidance by council officers and assessment.
- 2) Glenmore Parkway should have a minimum 3m setback to be consistent with the existing setback with a minimum average setback of 6m.
- 3) Luttrell Street should have a variable setback with a minimum zero setback to create an active edge, where appropriate.
- 4) Buildings along the Main Street and in the Town Square should be constructed to the front street alignment to create an active edge.
- 5) Long continuous walls and facades are to be avoided. All walls, particularly those addressing the peripheral road boundary, are to incorporate architectural design treatments to reduce the visual mass and bulk.
- 6) Development must demonstrate that it does not adversely impact on the adjoining community centre. Figure E7.6 illustrates the relationship of new buildings located to the rear of the community centre.

Figure E7.5 – Specific Street alignment and building setback diagram(s)

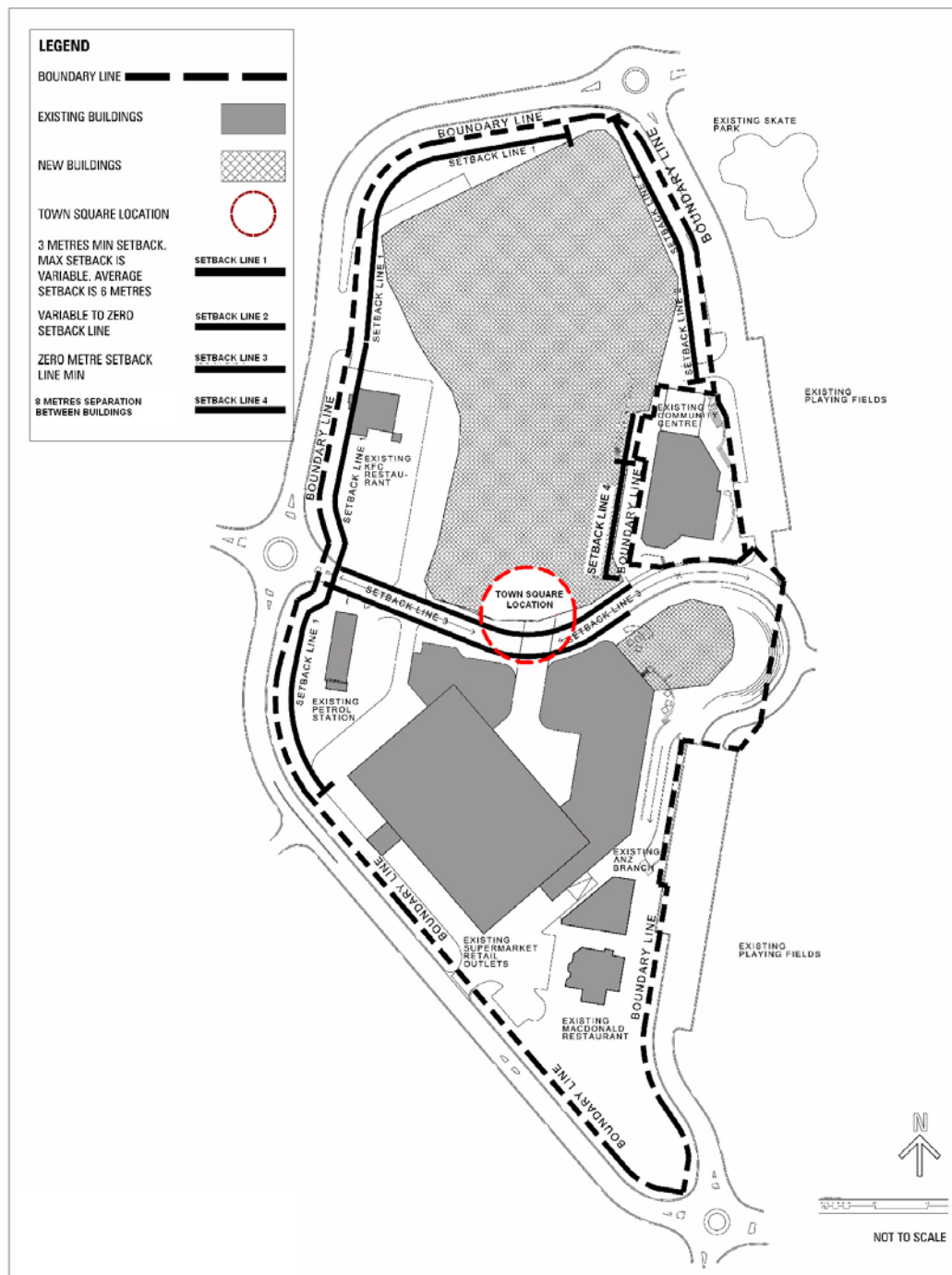
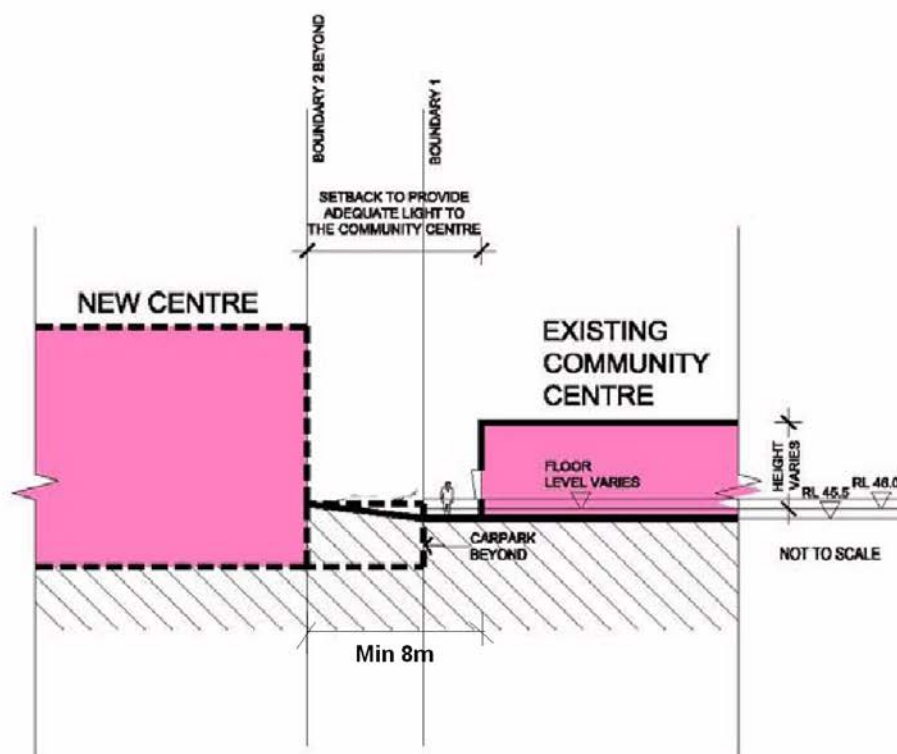


Figure E7.6 – Section between rear of community centre and development



7.2.5.4 Building Height Controls

A. Background

Building heights is an important characteristic of a town centre. Heights specified in this section will ensure future development will create a sense of place, streetscapes that respond positively to human proportions and will reflect the role of the GPLC.

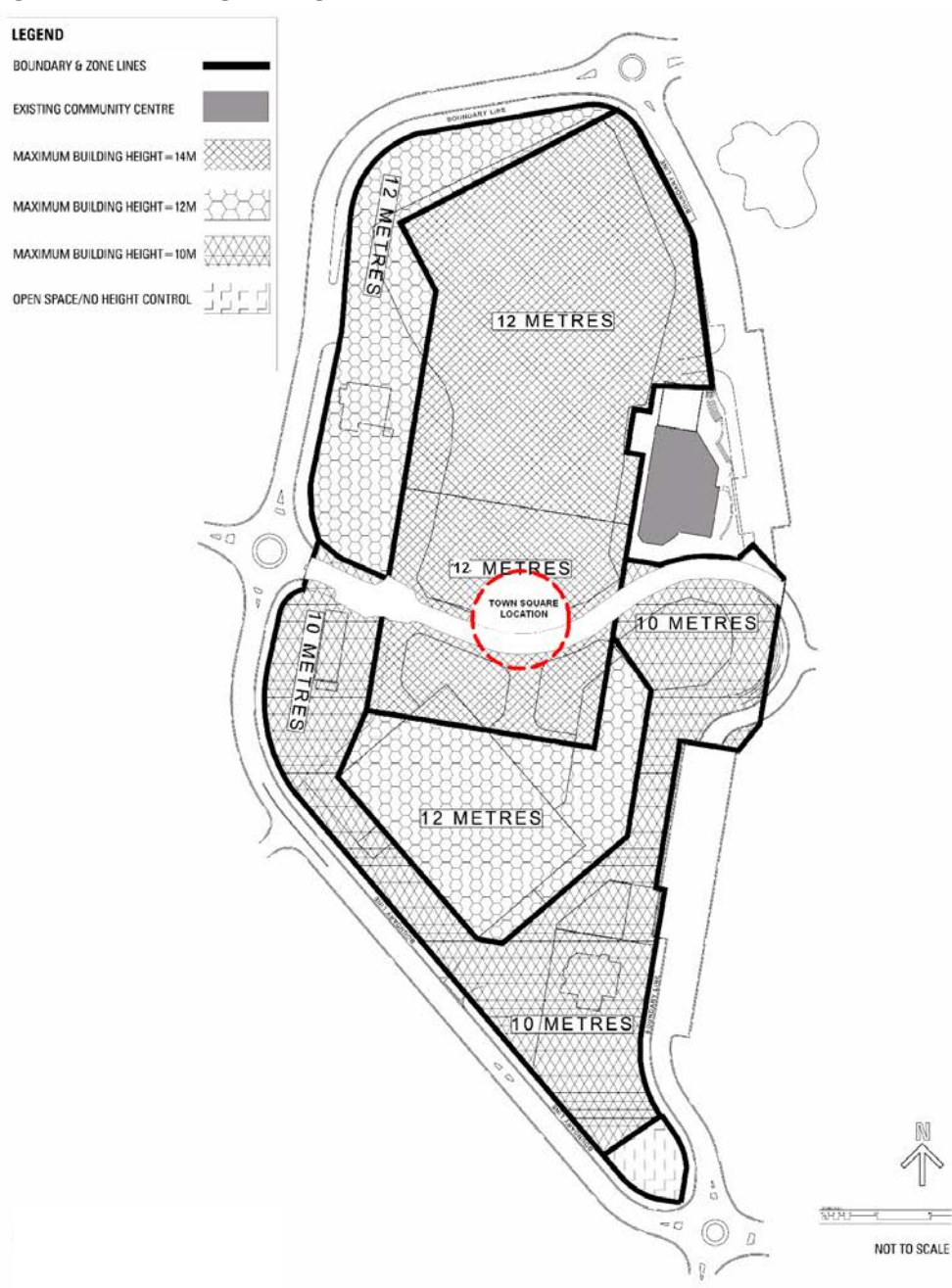
B. Objectives

- To provide for maximum height controls acknowledging the varying site topography, orientation and surrounding land uses.
- To ensure an appropriate scale relationship between new development and street width, local context, adjacent building and public domain.
- To achieve comfortable street environments for pedestrians in terms of daylight, solar penetration, scale, sense of enclosure and wind mitigation as well as a healthy environment for street trees and/or other landscape elements together with public art work, where appropriate.
- To allow sunlight to significant public spaces in the town centre particularly during critical times.
- To ensure appropriate management of overshadowing, access to sunlight and privacy.

C. Controls

- 1) New buildings should comply with the relevant maximum heights as shown on Figure E7.7.
- 2) Other building elements including plant or roof top treatment, may exceed the height controls provided that the consent authority is satisfied that the specific elements either represents a positive addition to the streetscape or the element won't be visible from the public realm and/or is generally screened from view from the street level within the public domain.
- 3) Proposals for buildings that exceed the specified heights must demonstrate through an urban design analysis that the built form outcomes will be consistent with the built form objectives of this Section of the DCP.

Figure E7.7 – Height diagram



7.2.5.5 Building Exteriors

A. Background

The character of GPLC is defined by the massing and articulation of building forms and its streetscapes. The surrounding topography accommodates views and vistas to the centre particularly from the adjoining eastern ridge. As such the visual character of the centre needs to present a varied harmonic address at ground level as well its roofscape. Building exteriors contribute to the character and quality of the public domain. Furthermore, building exteriors are able to accommodate active uses and displays usually at street/ground level that directly contribute to a healthy visually stimulating, vibrant urban setting.

B. Objectives

- a) To ensure that new development buildings make a positive contribution to the streetscape or public domain.
- b) To encourage quality architectural design for all buildings.
- c) To encourage use of quality and durable materials.
- d) Clearly define the adjoining streets, street corners and public spaces and avoid ambiguous external spaces with poor pedestrian amenity and security.
- e) Maintain a pedestrian scale in the articulation and detailing of the lower levels of the building.
- f) Provide appropriate design responses to nearby development.
- g) Achieve an articulation and finish of building exteriors that contribute to design excellence.
- h) Ensure that the roofscape is considered as a design element and its appearance and form is of a high standard and does not distract from the visual amenity within the GPLC.

C. Controls

- 1) Articulate exterior facades to provide visual interest.
- 2) External walls should be constructed of high quality and durable materials and finishes.
- 3) To assist articulation and visual interest, avoid large expanses of any single material.
- 4) Maximise glazing for retail uses but break glazing into modulated rhythmic sections to avoid long expanses of glass.
- 5) Ensure that reflections from building materials that may negatively impact on the surrounding residential precinct's amenity are avoided.
- 6) Encourage the use of display windows that are regularly rearranged/ designed during afterhours and evening time.
- 7) Long continuous walls are to incorporate design treatments to reduce the visual mass and bulk by a variety of architectural and design treatments including landscaping.
- 8) Rooftop plant and equipment are to be integrated into building/roof forms or screened in a manner compatible with the building design and to minimise visual and acoustic impacts.
- 9) Roof forms are to be visually interesting, well-proportioned and consist of good quality, non-reflective, neutral toned and coloured material.

7.2.5.6 Interface with Residential Areas

A. Background

To the north and west of the GPLC are residential areas, requiring visual, acoustic and amenity consideration.

B. Objectives

- a) To ensure that the design of development acknowledges the amenity of surrounding residential properties.
- b) To ensure that vehicular services areas (including loading/unloading areas) and vehicular accessways are integrated within the development.
- c) To avoid vehicular egresses that have an impact on existing vehicular traffic flows and impact negatively on the pedestrian amenity of the public realm.
- d) To effectively manage the visual and acoustic impact of loading dock and back of house activities.

C. Controls

- 1) New development of the site must not significantly diminish the amenity of residents on Glenmore Parkway.
- 2) Loading/unloading areas and access to underground parking should be designed to minimise noise and amenity impacts on adjacent residents.
- 3) Loading/unloading areas are to be integrated into the design of the development with consideration of visual and landscaping screening as appropriate.
- 4) Provide quality architectural treatment to all external sides of the site.
- 5) Where vehicular service areas are above ground, implement noise reducing design elements, e.g. solid berm earth walls and /or acoustic wall panels.

7.2.5.7 Landscape Design

A. Background

Good landscaping provides breathing space, passive and active recreational opportunities and enhances air quality along with other environmental benefits.

GPLC has limited opportunity for landscaped open spaces. However, its main street, town square, laneways retail arcades need to respond positively in adding appropriate landscape elements. The design of public spaces in the centre should incorporate landscape elements and street furniture, contributing to the overall public amenity within the town centre.

Placement and species of tree types within the public realm will need to respond to seasonal solar penetration.

B. Objectives

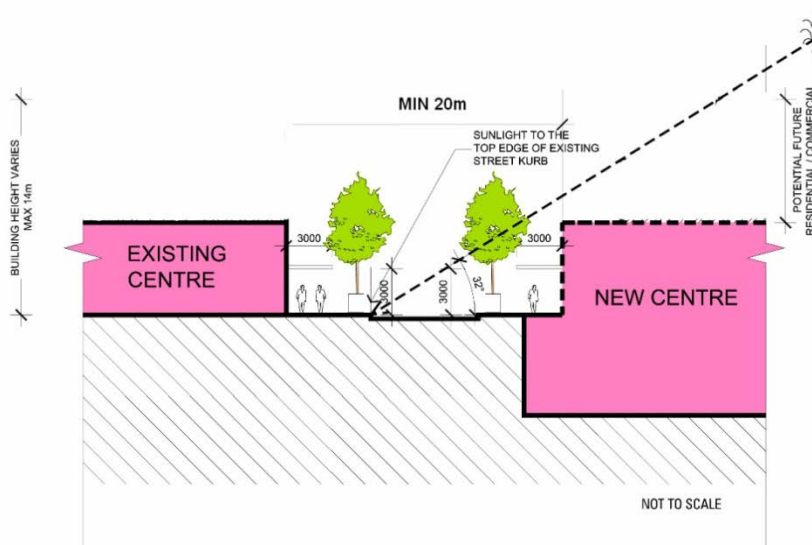
- a) To introduce landscaping and trees around perimeter to soften views to the site and reduce scale.
- b) To ensure that the use of potable water for landscaping irrigation is minimised.
- c) To ensure landscaping is integrated into the whole Glenmore Park Local Centre.

- d) To visually define and promote attractive public spaces by use of landscaping association with other design elements, street furniture, artwork etc.

C. Controls

- 1) New development along all external boundaries shall incorporate landscaping that screens or softens building elements and spaces from the surrounding residential precincts.
- 2) Landscaping treatments along with improved pedestrian amenity shall be integrated into the design of new entry points and gateways from the surrounding street network to the town centre.
- 3) Recycled and re-used water should, where possible, be used to irrigate new landscaped areas.
- 4) The use of plants with low water consumption characteristics is encouraged.
- 5) Street furniture and other public domain elements are integrated into the design of all public spaces and may include:
 - a) Seats
 - b) Litter bins
 - c) Lighting
 - d) Street and information signs
 - e) Bicycle racks
 - f) Planter boxes
 - g) Other items suitable to the function of each public space
 - h) Shade structures
 - i) Awnings
 - j) Water features
 - k) Public art
- 6) Provide deep soil zones for landscape areas.
- 7) Landscape is integrated with public and street lighting to not diminish the effectiveness of existing lighting.
- 8) Minimise changes in level and enhance access for those who may be disabled.
- 9) Embrace Universal design initiatives.
- 10) Ensure landscape enhances views and vistas to and from the town centre's open spaces contributing to passive surveillance and providing visual vitality to the overall streetscape.
- 11) The width of the main street (east-west link) is to be in accordance with Figure E7.8.

Figure E7.8 – Streetscape East/West Link



7.2.5.8 Public Domain

Pedestrian amenity incorporates all elements of individual developments that directly affect the quality and character of the public domain. The pedestrian amenity provisions are intended to achieve quality urban design and pedestrian comfort in the public spaces of the centre. The public gather spaces/places within the town centre must be attractive to all ages including both the very young as well as the elderly residents/visitors.

The controls in this section aim to increase vitality, safety, security, attractiveness and amenity of the public domain.

1) Pedestrian Amenity and Weather Protection

A. Background

Awnings and weather protection elements increases the suitability and amenity of public footpaths by protecting pedestrians from all weather conditions. They encourage pedestrian activity along streets and in conjunction with active edges such as retail frontages (cafes etc.), support and enhance the vibrancy of the local area. Awnings also provide architectural continuity and contribute to the streetscape.

Connecting the shoppers/retail visitors of the centre to the underground concealed car parking needs careful design consideration. It is envisaged that there will be alternative routes both covered and partially covered that allow shoppers to access underground car parking from either side of the Main Street. The Main Street will remain uncovered.

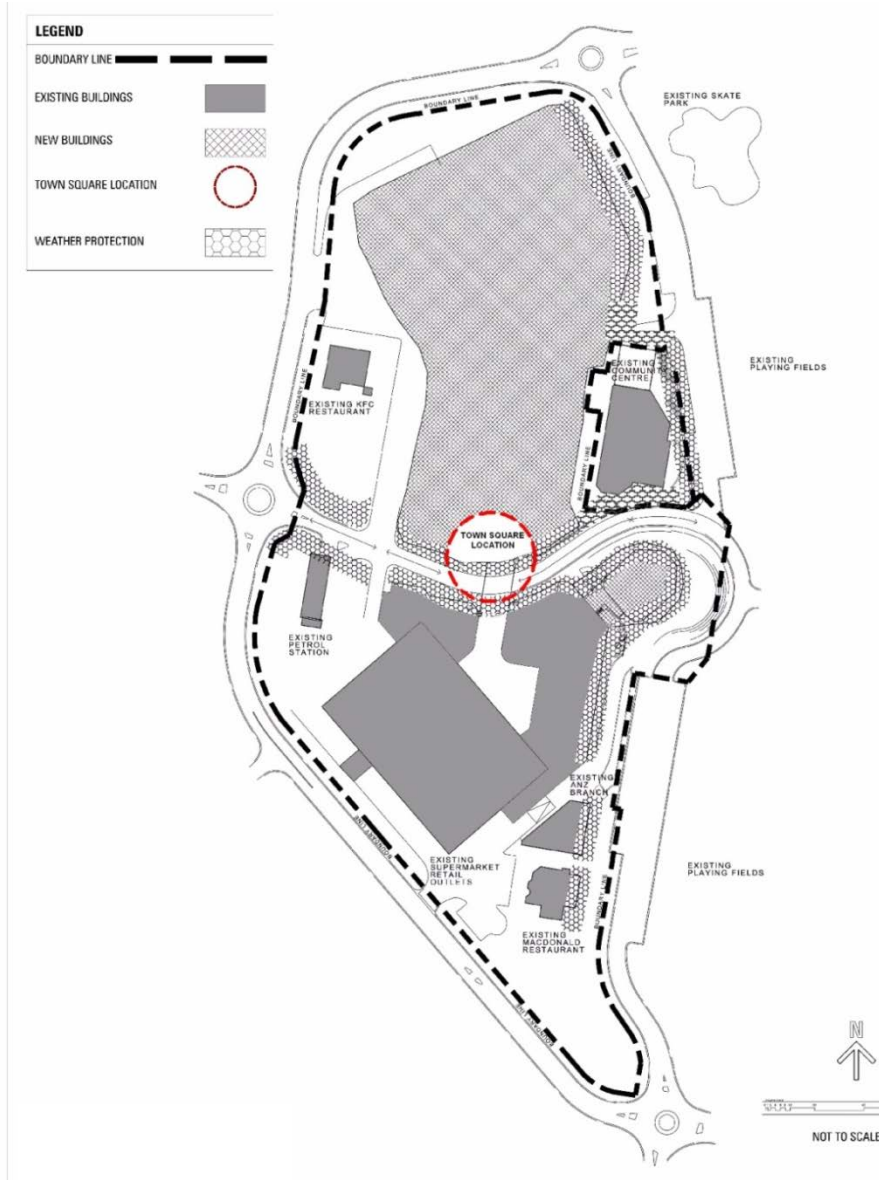
B. Objectives

- To provide shelter from wind, rain and sun for streets where most pedestrian activity occurs.
- To provide a visually integrated streetscape.
- To provide pedestrian convenience and amenity from existing centre to new centre via alternative covered routes to connect to the underground parking area without covering or roofing over the Main street.

C. Controls

- 1) Weather protection is to be provided for all new development as indicated in Figure E7.9.
- 2) The design of new development should consider where practical, the ability to incorporate weather protection measures from the existing centre to new centre and underground parking.
- 3) Weather protection must be consistent in appearance and relate to new or existing building facades.
- 4) Provide under awning lighting to facilitate night use and to improve public safety.

Figure E7.9 Weather Protection East West Link



2) Pedestrian Access and Mobility

A. Background

Any new development must be designed to ensure that safe and accessible access is provided to all people. Additionally, pathways are to have clear sightlines and be flanked, where possible, by active uses.

B. Objectives

- a) To ensure that people who visit the centre are able to access and use all spaces, services and facilities through the creation of barrier free environment in all public spaces, in particular the Main Street as well as arcades and retail streets.
- b) To provide a safe and easy access to buildings to enable better use and enjoyment by people regardless of age and physical condition, whilst also contributing to the vitality, diversity and vibrancy of the public domain.
- c) To maintain and enhance, where possible, connections to the centre by public transport, as shown in Figure E7.3.
- d) To provide services that support the needs of mobility impaired persons.

C. Controls

- 1) The design and provisions of facilities for accessibility including car parking must comply with Australian Standards AS1428.
- 2) The development is to provide at least one main pedestrian entrance with convenient barrier free access to the ground floor and/or street level.
- 3) The development must provide visually distinctive accessible internal access, linking to building entry points and the public domain.
- 4) Pedestrian access ways, entry paths and lobbies must use durable materials commensurate with the standard of the adjoining public domain (street) with appropriate slip resistant materials, tactile surfaces and contrasting colours and comply with the relevant Australian Standard.
- 5) Pedestrian pathways are to accommodate adequate lighting and consistent style of way finding signage/graphics.
- 6) Future development must maintain safe and unimpeded paths of travel from bus stops and existing pedestrian links and crossovers to the site.
- 7) Any new development proposing basement car park shall make provision to connect the proposed and existing development.

Permeability

A. Background

Through site links provide access connections between the long sides of street blocks for pedestrian and vehicular access at street level. These links provide an important permeability function in form of shared zone, arcades and pedestrian ways.

The town centre through site links should form an integrated pedestrian network providing choice of routes at ground level for pedestrians. Where level change is unavoidable, ramps and/or mechanised access such as lifts, travelators etc. connecting to basement car parks, need to be considered.

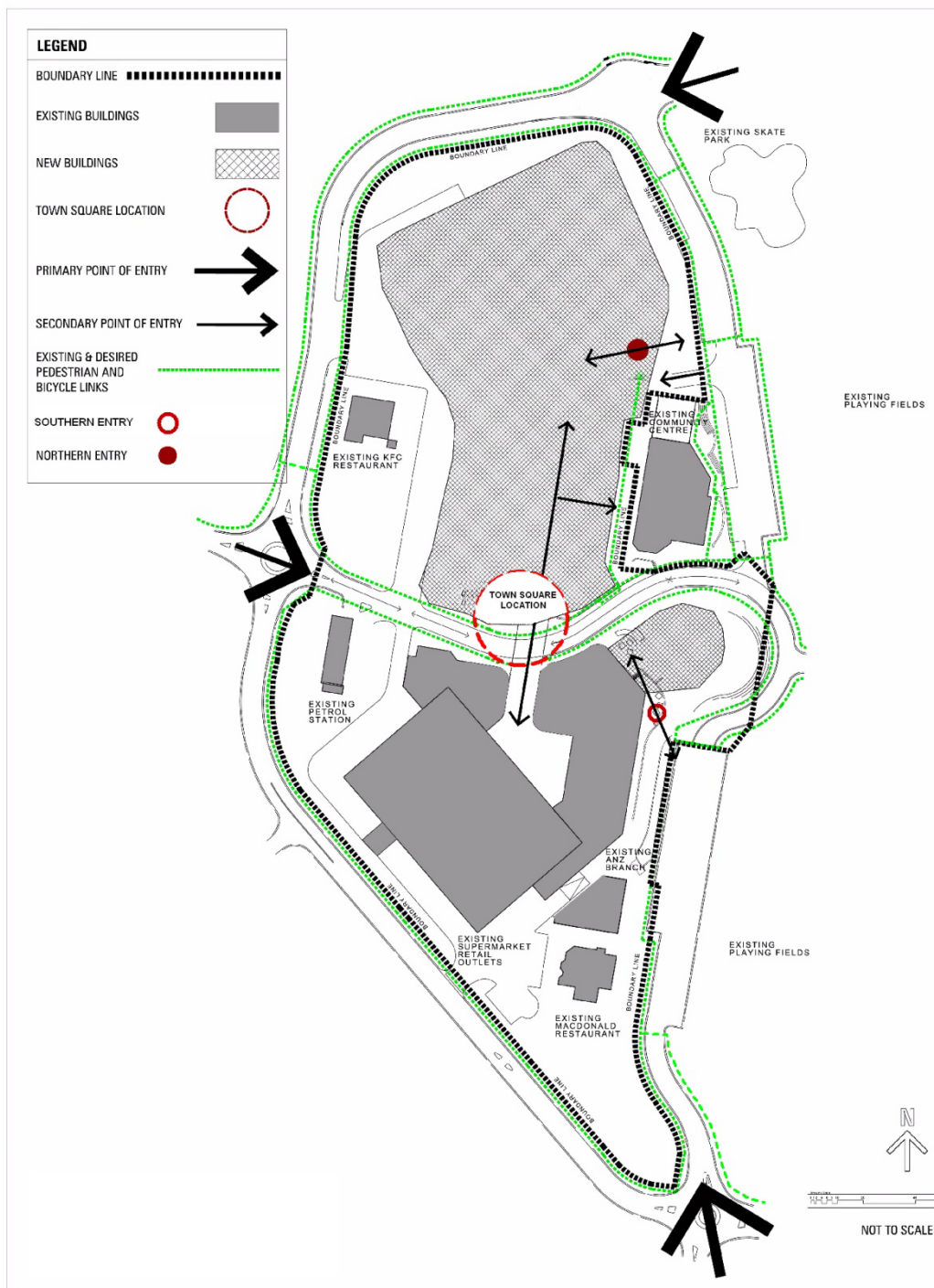
B. Objectives

- a) To maximise accessibility and permeability through the site within the constraints of the new development and the operational requirements of the centre.
- b) To maintain current access to and from the centre or create new links as redevelopment occurs.
- c) Use opportunities to improve existing links for better connectivity to the town centre.
- d) To encourage active street format, where appropriate, along the length of the Main street.
- e) To provide for pedestrian amenity and safety.
- f) To connect the internal mall to key entrance points to those clearly identified.
- g) To create a new northern address that activates and creates an arrival point for the centre to draw people along Luttrell Street.
- h) To retain unrestricted access to both the Main Street spine road and town square at all times except for agreed community events.

C. Controls

- 1) Through site links are to be provided as indicated in Figure E7.10.
- 2) New through site links should connect to existing through site links, arcades and pedestrian ways, where possible.
- 3) Comprehensive way finding signage is to be provided throughout the site.
- 4) Designated pedestrian routes are to be well designed incorporating the following elements, natural and artificial lighting, seating and other street furniture appropriate for public use.
- 5) All entry points should be clearly visible from primary street frontages and enhanced as appropriate with awnings, building signage or high quality architectural features that improve clarity of building address and contribute to visitor and occupant amenity.
- 6) Provide safe and legible pedestrian access to and from car park.
- 7) Future development is to provide safe pedestrian movement through the car park to the centre.
- 8) New development along Luttrell Street (eastern) frontage to incorporate pedestrian links to the site in accordance with Figure E7.10.
- 9) Improve existing links along the eastern terrace south of Main Street through to Luttrell Street.

Figure E7.10 – Existing and Desired Pedestrian Links



3) Active Street Frontages and Address

A. Background

Active street frontages promote an interesting and safe pedestrian environment. Busy pedestrian areas (such as shops, cafes, offices, etc.) that offer direct physical engagement with the public space create the most active street frontage.

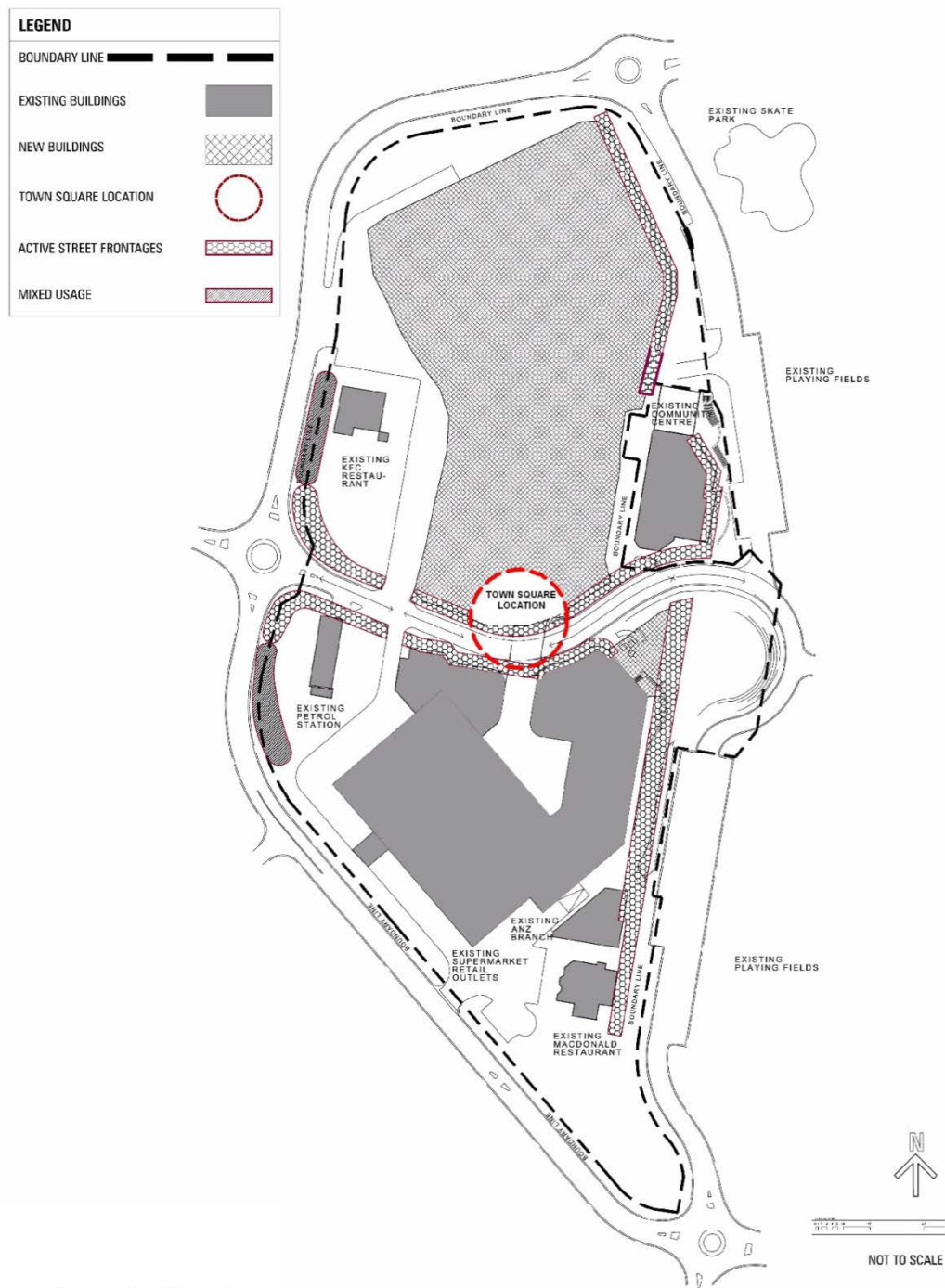
B. Objectives

- a) To promote pedestrian activity and safety in the public domain.
- b) To maximise active street frontages to the site.
- c) Promote shop front displays or encourage outdoor dining that externalise the buildings both night and day.

C. Controls

- 1) Active frontage uses are defined as one or a combination of the following at street level:
 - a) Entrance to a retail premises.
 - b) Shop front.
 - c) Glazed entrance to an active commercial premises located on the ground floor, such as reception.
 - d) Café or restaurant if accompanied by an entry from the street
- 2) Active street frontages are to be located at the ground level of all buildings located in those areas shown in Figure E7.11.
- 3) Only open grill or transparent security shutters are permitted to retail frontages or approved innovation.
- 4) Restaurants, cafes and the like are to consider providing operable shop fronts.

Figure E7.11 – Active street frontages



4) Internal Building Circulation Space

A. Background

Internal pedestrian retail paths/arcades are an integral part of the public space network. Although they are privately owned they are perceived as “public spaces” during centre operating hours. As these spaces form a significant part of the internal urban structure of the site, it is desirable for them to achieve a high level of environmental performance including thermal comfort, natural ventilation and good daylight access. Furthermore, these accessways should be connectors to the public domain.

B. Objectives

- a) Pedestrian retail access paths should connect to external through site links and pedestrian ways, where possible.
- b) Provide pedestrian convenience and amenity.
- c) Promote pedestrian activity and safety.

C. Controls

- 1) Pedestrian retail access paths are to:
 - a) Be direct and publicly accessible during business trading hours.
 - b) Be designed as an accessible path for all persons.
 - c) Have active frontage on either side by the full length.
 - d) Have, where possible, access to natural light for part of their length and at all openings.
 - e) Where air conditioned, have clear glazed doors to at least 50% of the entrance.

7.2.6 Car Parking and Access

This section contains detailed objectives and controls on vehicular access and site facilities.

7.2.6.1 Vehicle Footpath Crossings and Driveways

A. Background

GPLC benefits from having access from a number of streets including Glenmore Parkway, Luttrell Street and Town Terrace. Vehicle crossings over footpaths disrupt pedestrian movement and raise safety implications. The design and location of vehicle access to buildings also influences the quality of the streetscape, building facade and the active use of street frontages. The design and location of vehicle access to developments should minimise conflicts between vehicles and pedestrians on footpaths, particularly in pedestrian priority places such as the spine road as well as Luttrell Street.

B. Objectives

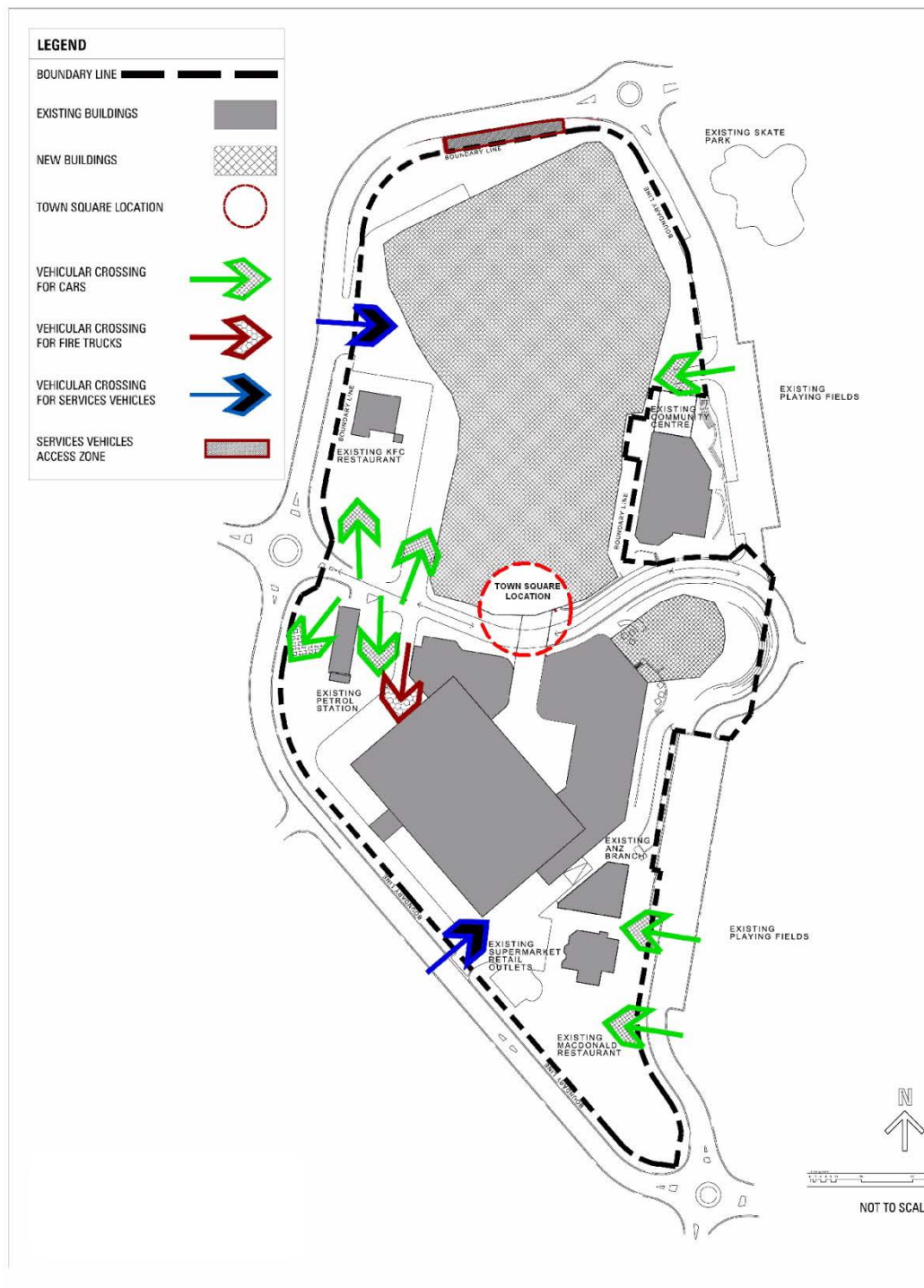
- a) To facilitate efficient and convenient access to and from the site.
- b) To avoid conflict between pedestrian/cyclists and vehicles, particularly in high priority pedestrian locations.
- c) To minimise the impact of vehicular access points on the quality of the public domain.
- d) To ensure vehicle entry points are integrated into building design.

- e) To minimise stormwater runoff from uncovered driveways and parking areas.

B. Controls

- 1) Vehicle access points to the centre shall be provided generally in accordance with the Access Plan, shown on Figure E7.12.
- 2) Vehicle access widths and grades are to comply with the Australian Standards.
- 3) Design of driveway crossings must be in accordance with Council specifications for Vehicle crossovers.
- 4) The driveway threshold is to be designed to prevent ingress of stormwater.
- 5) Vehicle entries are to have high quality finishes to walls and ceilings as well as high standard detailing.
- 6) Vehicular driveways should be located wherever practical as follows:
 - a) Setback a minimum of 6m from the tangent point in the kerb.
 - b) Located taking into account any services within the road reserve, such as power poles, drainage inlet pits and existing street trees.

Figure E7.12 – Vehicle entry/crossing diagram



7.2.6.2 Access, Servicing and Manoeuvring

A. Background

Adequate on-site provision for delivery and service vehicle access should be made to facilitate the efficiency of the commercial, retail and other functions.

B. Objectives

- a) To ensure the appropriate on-site provision for parking of service vehicles.
- b) To provide for efficient service vehicle movements and access within the site.
- c) Establish appropriate access and location requirements for servicing.
- d) Ensure that servicing routes and egress points do not adversely impact on the pedestrian routes connecting to the centre.

C. Controls

- 1) All vehicles must be able to enter and leave the site in a forward direction without the need to make more than a three point turn.
- 2) The final location for the ingress of large trucks to the northern boundary of the site from Glenmore Parkway is subject to detailed design and traffic analysis.
- 3) Loading/unloading facilities are to be:
 - a) Separated from customer parking and circulation path of other vehicles.
 - b) Integrated into the design of developments and screened from the street.
 - c) Located away from circulation paths of other vehicles.
 - d) Designed for commercial vehicle circulation and access complying with AS2890.2.
- 4) The Main Street is to be a traffic calmed roadway together with raised thresholds for pedestrian cross over points and a reduced speed limit. Vehicular traffic is to give way to pedestrian at the raised threshold location/s.
- 5) Traffic calming devices are to be provided along the Main Street for safe pedestrian movement.
- 6) Traffic calming devices are to be considered along Town Terrace to reduce speed and truck movements as appropriate.
- 7) Generally, provision must be made for all vehicles, including emergency vehicles, to enter and leave the site in a forward direction.
- 8) For large scale retail and commercial development, consultation is to occur with Westbus regarding future bus access routes to the site.

7.2.6.3 On-Site Parking

A. Background

Onsite parking includes underground (basement) and surface (at-grade) parking for vehicles and bicycles. The following section provides on-site parking controls for the site.

B. Objectives

- a) To provide an appropriate amount of on-site car and bicycle parking to cater for future development.

- b) To integrate parking appropriately with the design of buildings to minimise its visual and environmental impact.
- c) To provide adequate space for parking and manoeuvring of vehicles.
- d) To ensure the appropriate on-site provision and design of accessible car parking.

C. Controls

- 1) Car parking is to be provided in accordance with the rates outlined in the Transport, Access and Parking Section of this Plan, unless it can be demonstrated that a lesser rate can still achieve sufficient parking provision to meet the needs of the shopping centre.
- 2) Accessible car parking spaces are to be provided and designed in accordance with the requirements with the Building Code of Australia and AS2890.
- 3) The car park and all its components including but not limited to driveway, aisle and ramp widths, ramp grades, and car space dimensions are to comply with the relevant Australian Standard (AS 2890.1 2004) – *Parking Facilities – Off-Street Car Parking*, as amended.
- 4) Where possible, natural ventilation is to be provided to underground parking areas with ventilation grills and structures that are integrated into the overall façade of the development and located away from the primary street frontage.
- 5) Short term parking is to be provided along one side of the Town Terrace east/west spine road.
- 6) 4 Council car spaces and driveway access adjacent to community centre are to be retained and integrated into design. These spaces are to be dedicated parking spaces for the community centre.
- 7) Proposals for basement parking areas are to be accompanied with a geotechnical report prepared by appropriately qualified professional and other supporting information to the Development Application.

7.2.6.4 Site Facilities and Services

A. Background

Adequate site facilities and amenities are important elements of a successful local centre function, and include bicycle storage and associated amenities, toilets and parents change rooms, accessible toilets, public telephones and staff facilities. Other servicing requirements of the site should be designed and sited to minimise visual and environmental impact.

B. Objectives

- a) To provide adequate site facilities to meet the needs of the local community.
- b) To establish appropriate access and location requirements for servicing.

C. Controls

- 1) The provision of site facilities such as bicycle storage and associated amenities, toilets and parents change rooms, accessible toilets, public telephones and staff facilities are to be considered as part of any redevelopment of the site.
- 2) Air conditioning, service vents and other associated structures should be:
 - a) Located away from street frontages

- b) Located in a position where the likely impact is minimised
- c) Adequately set back from the perimeter wall or roof edge of buildings
- d) Where it is to be located on the roof it should be integrated into the roof scale design and in position where such facilities become a feature in the skyline at the top of the building.

The responsibility for the ongoing management of waste facilities must be determined prior to work commencing on any redevelopment of the centre. Details of the management of waste by future tenants are to form part of the Waste Management Plan (in accordance with Section C5 Waste Management of this Plan) for the development.

7.2.7 Design Principles

7.2.7.1 Energy Efficiency

A. Background

The ability of development to optimise thermal performance, thermal comfort and day lighting will contribute to the energy efficiency of the buildings, provide increased amenity to occupants and reduce greenhouse emissions.

B. Objectives

- a) To encourage architectural design to minimise the need for mechanical heating and cooling of spaces to provide comfortable conditions for the community.
- b) To reduce the proportion of overall energy consumption in the construction and use of buildings.

B. Controls

- 1) Integration of shading devices and ventilation of building faces where practical, in order to reduce solar energy loads at high luminance periods of the day.
- 2) Using an architectural design to harness natural light into spaces where practical through integration of light wells, sky lights and voids to reduce lighting energy consumption.

7.2.7.2 Water Management and Water Sensitive Urban Design

A. Background

Building design can contribute to environmental sustainability by incorporating measures for improved water quality and efficiency of use. Integrating water use, collection and reuse measures into building and infrastructure design contribute to achieving environmentally sustainable outcomes.

B. Objectives

- a) To help improve the environment by improving the quality of water run-off.
- b) To ensure infrastructure design is complementary to current and future water use.
- c) To maintain pre-existing stormwater runoff flows off site.

C. Controls

- 1) The following water saving measures to be incorporated into new development:

- a) Water fixtures (low flow shower heads and taps, dual flush toilets, low flush/ water efficient urinals, etc.) are to be 3 stars (WELS Scheme) or better rated.
 - b) Select water efficient plants and/ or, indigenous vegetation for landscape in accordance with Council's preferred species.
 - c) Use non-potable water for watering new gardens and landscape features.
- 2) A Stormwater Management Plan is to be prepared that identifies how the quantity and quality of urban runoff from the site will be managed on the site as part of any major redevelopment of the centre.

7.2.8 Waste Management

A. Background

Waste management refers to all stages of development from demolition to design, construction and occupation. The following objectives and controls are in addition to those outlined in the Waste Management Section of this Plan, and are specific to the GPLC.

B. Objectives

- a) To minimise waste generation and disposal to landfill with careful source separation, reuse and recycling.
- b) To plan for the types, amount and disposal of waste to be generated during demolition, excavation and construction of the development.
- c) To ensure efficient storage and collection of waste and quality design of facilities.

C. Controls

- 1) Development applications involving major demolition or construction works should include proposed waste management strategies.
- 2) Such strategies could include any of the following:
 - a) Proposals for recycling and reuse of construction and demolition materials.
 - b) Use of sustainable building materials that can be reused or recycled at the end of their life.
 - c) Handling methods and location of waste storage areas, such that handling and storage has no negative impact on the streetscape, building presentation or amenity of occupants and pedestrians.
 - d) Procedures for the on-going sustainable management of green and putrescibles waste, garbage, glass, containers and paper, including estimated volumes, required bin capacity and on-site storage requirements.
- 3) Details of the management of waste by future tenants are to form part of the Waste Management Plan for any redevelopment of the centre.
- 4) A Waste Management Plan for the site is to be implemented as part of any redevelopment of the site, in accordance with the Waste Management Section of this Plan.

7.2.9 Safety and Security (Crime Prevention through Environmental Design)

A. Background

A safe and secure environment encourages activity, vitality and viability, enabling a greater level of security. Planning and design can identify and address safety and security issues through the use of environmental and technical measures.

B. Objectives

- a) To address safety, security and crime prevention requirements in the planning and design of development (including the NSW Police 'Safer by Design' crime prevention through environmental design (CPTED) principles).
- b) To ensure developments and the public domain is safe and secure for pedestrians.
- c) To encourage a sense of ownership of the public domain.

C. Controls

- 1) For any large scale retail and commercial development an assessment is to be provided in accordance with the CPTED principles.
- 2) Applicants should refer to the Site Planning and Design Principles Section of this Plan and address the CPTED principles in their development application.

7.2.10 Site Topography

A. Background

A site's natural topography and landform are important features that inform the urban structure of the place.

B. Objectives

- a) Development should respond to a site's natural topography and landform, minimising excavation and potential visual impacts and in turn reduces construction costs.

C. Controls

- 1) Applicants must demonstrate how their design/ development respond to the natural topography and landform of the site, based on site analysis drawings.

7.2.11 Other Controls

7.2.11.1 Town Square

A. Background

The Town Square is to be the primary social focus of the GPLC. It is to be a vibrant, active town square that forms the hub of the centre.

The Town Square should be designed as a multi-functional public space that is able to operate on various levels responding to special events (such as markets) without disrupting the pedestrian flows of the shopping centre or the traffic calmed vehicular movements. On a few occasions each year this space will be totally closed off but this will be done within a clearly defined and communicated management regime.

B. Objectives

- a) To provide a vibrant, active, town square with a shopping Main Street character.
- b) To provide improved connectivity and interaction between the Town Square and the community centre.
- c) To encourage the Town Square is to be the pedestrian focus of the GPLC.
- d) To promote uses around the square that maximise activity and vibrancy, which permit and promote after hours usage of the space.
- e) To encourage use of high quality and durable materials.
- f) To ensure that the Main street will be a primarily a pedestrian oriented street with traffic calming measures for vehicular movement, which allows for local access and a limited amount of short term parking for shoppers on both sides of the street.
- g) To provide a flexible Town Square space capable of being enlarged without disrupting the normal pedestrian flows or vehicular traffic movements, provision should be made for temporary closing of the road for specific larger community events and be controlled within the town centres management program.

C. Controls

- 1) Retail facades should be designed to activate the frontages to the Square both during and after hours.
- 2) Two/three storey buildings are encouraged forming the edge of Town Square to provide a sense of enclosure.
- 3) Development fronting the Town Square is to have active retail premises on the ground floor.
- 4) Active uses including restaurants and cafés fronting the Town Square are encouraged, specifically after normal business hours e.g. restaurants/ cafes. Awnings and/or colonnades create a weather edge to the Town Square.
- 5) Adequate lighting should be provided for evening use, safety and security.
- 6) The surface of Town Square should reflect its primary pedestrian focus. Appropriate traffic calming measures, different paving or clearly defined pedestrian crossings should be considered for the east/west spine road.
- 7) The area of the Town Square shall be not less than 400m² and will not incorporate the vehicular traffic's carriageways and/or the standard public pedestrian width within its dimensions.
- 8) The surface of Town Square should be designed to permit its use by service and emergency vehicles.
- 9) Allow sunlight access into the town square in all seasons while also allowing for adequate weather protection and sun-shading opportunities.
- 10) A detailed design for the Town Square should be prepared with any major DA for the centre. The detailed design should establish the appearance of facades to the Square, materials, street furniture, seating, lights, signage, traffic management devices, soft landscaping and other elements relevant to the character of the Town Centre.
- 11) The Town Square and adjacent 'Main street' roadway is to be managed in order to allow for specific community events and activities.

7.2.11.2 Community Centre Building

A. Background

The current Community Centre Building is isolated from the remainder of the existing shopping centre fronting towards the playing fields. The development of the shopping centre will bring opportunities to better connect and integrate the community facility with the surrounding development, although this will remain relatively constrained while the community facility remains in its present configuration.

The role and function of the Community Centre Building is expected to continue to evolve and expand over time in order to meet the needs of the growing community. Accordingly, provision should be made to ensure that if and when a substantial expansion or redevelopment occurs with the community facility there is a mechanism in place that would enable the potential to physically integrate or link with any approved retail development.

However, in the interim, the space between the Community Centre and any new development should be treated as usable public walkway/pathway space with provision for adequate landscaping and passive surveillance from the retail centre.

B. Objectives

- a) To consider any additional community needs and facilities that may arise with an expansion to the Community Centre Building.
- b) To ensure that the new development improves connections and access to the Community Centre Building in its present form.
- c) To provide for improved connections and physical linkages between the shopping centre development and the Community Centre Building in the event that this facility is redeveloped or substantially expanded.

C. Controls

- 1) New development is to demonstrate that the design enhances the amenity of existing linkages and access to the community facility building in its present form.
- 2) New development is to make provision for access by a potential future physical connection from the community facility building in the event of a major expansion or redevelopment of the community facility building, which would enable a connection at a floor level consistent with the adjacent development. The provision of access will be approximately 3m in width and be of mutually acceptable timing, design and location between the Council and the owners of GPLC.
- 3) New Development to have a minimum setback of 8m between the existing Community Centre building and any new development. Additionally the interim space between the community centre and new shopping centre is to be landscaped, attractive and enjoy a high degree of surveillance with pedestrian paths.

7.2.11.3 Management Plan

A. Background

The management for the ongoing care, control and management of both public and private domain is important and needs to be clearly defined in terms of responsibility for these various areas.

B. Objective

- a) To ensure that all public and private domain located within the town centre is adequately managed.

C. Control

- 1) Prior to the final approval of any further development of the town centre a Plan of Management is to be prepared and submitted to Council for approval. The Plan of Management shall incorporate measures for the ongoing care, control and maintenance of both the public and private domain and shall differentiate those lands and facilities, which will remain in private ownership.

7.3 Glenmore Park Major Land Use

7.3.1 Land to which this Section applies

This Section applies to all land at Glenmore Park Stage 1.

7.3.2 Purpose of the Section

The central purpose of this section is to clearly establish and identify major land use areas within Glenmore Park Stage 1.

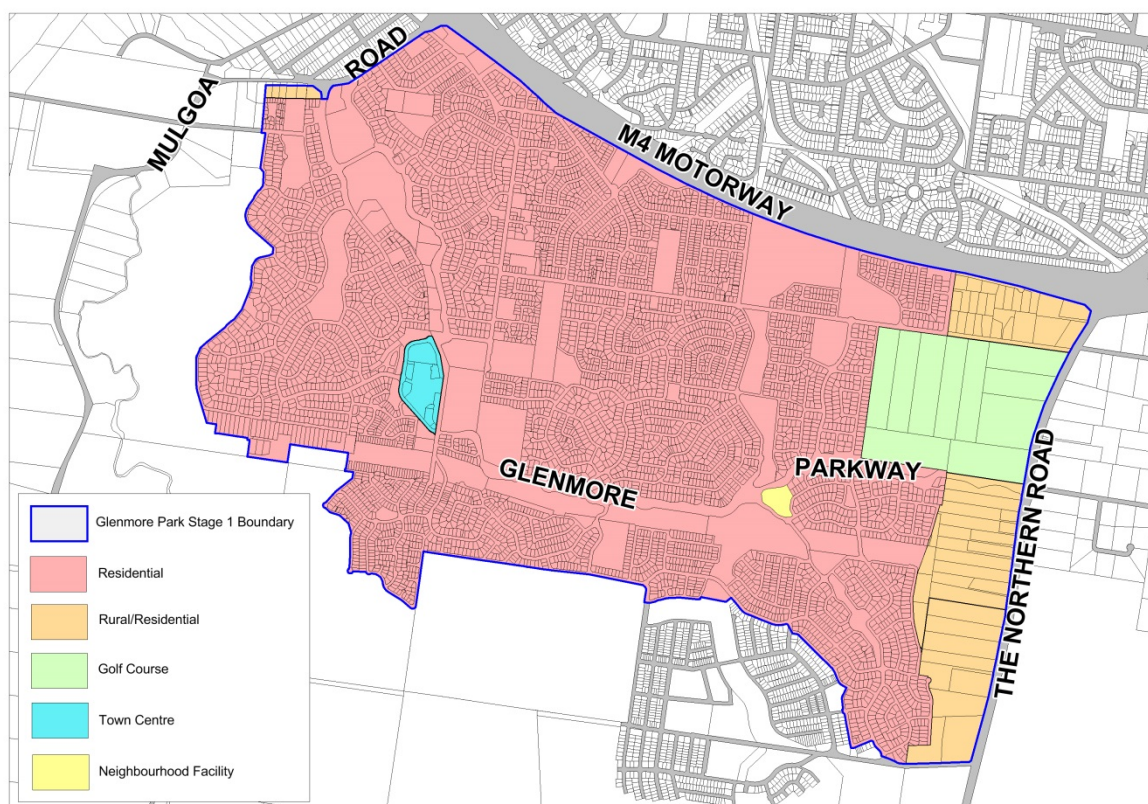
A. Objectives

- a) To establish major land use areas which identify specific precincts for key development activities;
- b) To promote the continuation of the open, semi-rural character of the estate's edges along The Northern Road and Mulgoa Road by maintaining a low density development pattern; and
- c) To restrict commercial or retail related activities from establishing along The Northern Road or Mulgoa Road frontages.

B. Controls

The following controls applying to all development proposals within Glenmore Park set the guidelines to be observed for each major land use area, as shown in Figure E7.13.

Figure E7.13: Major land use development areas in Glenmore Park Stage 1



1) Residential

In addition to the controls outlined in Section D2 Residential Development, the following objectives and controls apply:

A. Objectives

- a) To provide for a range of activities consistent with the establishment of a quality living environment;
- b) To encourage a diversity of housing types; and
- c) To provide development opportunities for non-residential activities which:
 - i) support neighbourhood planning concepts;
 - ii) do not impact on neighbourhood amenity;
 - iii) enhance access to a range of community services and facilities; and
 - iv) to make provision for a general store / neighbourhood shop within Glenmore Park, as show in Figure E7.25.

B. Controls

- 1) Minimum average density of 11 dwellings per net hectare; and
- 2) Range of lot sizes desirable.

2) Rural / Residential

A. Objectives

- a) To conserve the open, semi-rural character of The Northern Road and Mulgoa Road frontages of Glenmore Park;
- b) To promote the need to maintain a low density settlement pattern which:
 - i) recognises the importance of conserving the rural land use pattern and image of the gateways into the urban areas of the city located along the major road frontages; and
 - ii) provides sufficient flexibility for dwelling siting and orientation of allotments to minimise the visual impact of development and to overcome noise constraints;
 - iii) To provide an acceptable level of development in the event that reticulated sewer is not available to The Northern Road sub-catchments; and
 - iv) To provide for large lot residential living opportunities.

B. Controls

- 1) A minimum dwelling setback of 50m;
- 2) A range of lot sizes is desirable; and
- 3) No additional vehicle access to The Northern or Mulgoa Roads.

3) Neighbourhood Shopping Facilities

A. Objectives

- a) To provide for a range of commercial and retail activities and services at a neighbourhood level which satisfy day-to-day resident needs; and
- b) To encourage the early provision of retail and professional services and temporary facilities.

B. Controls

- 1) Scale and nature of the neighbourhood facility shall be supportive to, and not delay the timing for the natural inception of the major shopping facility at the Town Centre;
- 2) Activities which are inconsistent with the objectives of this major land use or which detract from the establishment of a high quality neighbourhood scale business centre, or the amenity of the surrounding area, will not be supported by Council; and
- 3) Maximum floorspace up to 1,500m².

4) Golf Course

A. Objectives

- a) To enable the continuation of the Penrith Golf Course to service the needs of Glenmore Park and the broader community.

B. Controls

- 1) Ensure that supplementary development is:

- a) consistent with the above-stated objectives for the rural/residential edge of the estate along The Northern Road and that the visual quality and amenity of the surrounding locality is conserved;
- b) managed in a manner which does not give rise to traffic conflicts on The Northern Road; and
- c) corporate signage is limited and consistent with the semi-rural character of the area.

Table of Contents

PART B – GLENMORE PARK STAGE 2	40
7.4 GLENMORE PARK STAGE 2	40
7.4.1 PRELIMINARY	40
7.4.1.1 LAND TO WHICH THIS PART APPLIES	40
7.4.1.2 RELATIONSHIP TO OTHER PLANS AND DOCUMENTS	40
7.4.1.3 SUPPORTING STUDIES	41
7.4.1.4 HOW TO USE THIS SECTION	41
7.4.1.5 CONCEPT PLANS	41
7.4.2 STRUCTURE PLAN	42
7.4.2.1 INTRODUCTION	42
7.4.2.2 URBAN STRUCTURE	42
7.4.2.3 DWELLING YIELD	44
7.4.2.4 DWELLING DIVERSITY	45
7.4.3 PUBLIC DOMAIN	46
7.4.3.1 RESPONDING TO THE SITE'S NATURAL FEATURES	46
7.4.3.1.1 CORRIDORS	46
7.4.3.1.2 BUSHFIRE HAZARD MANAGEMENT	49
7.4.3.1.3 WATER MANAGEMENT	49
7.4.3.1.4 FLOOD MANAGEMENT	50
7.4.3.1.5 TREES	50
7.4.3.1.6 THE NORTHERN ROAD VIEW SHED	51
7.4.3.2 ACCESS AND MOVEMENT	52
7.4.3.2.1 URBAN STRUCTURE	52
7.4.3.2.2 VEHICULAR MOVEMENT	53
7.4.3.2.3 PUBLIC TRANSPORT	55
7.4.3.2.4 PEDESTRIANS AND BICYCLES	56
7.4.3.3 STREETSCAPES	58
7.4.3.3.1 LANDSCAPE CHARACTER	58
7.4.3.3.2 STREET FURNITURE AND PUBLIC ART	59
7.4.3.3.3 ROAD SECTIONS	60
7.4.3.4 OPEN SPACES	68
7.4.3.4.1 ACTIVE OPEN SPACE	68
7.4.3.4.2 NEIGHBOURHOOD PARKS	71
7.4.3.4.3 RIPARIAN CORRIDOR EDGE PARKS	72
7.4.3.5 NEIGHBOURHOOD PRECINCT	72
7.4.3.5.1 URBAN STRUCTURE	73
7.4.3.5.2 URBAN CHARACTER	73
7.4.3.5.3 RETAIL BUILT FORMS	74
7.4.3.5.4 PRIMARY SCHOOL	79
7.4.4 PRIVATE DOMAIN	79
7.4.4.1 SUBDIVISION	79
7.4.4.2 SHARED DRIVEWAYS	81
7.4.4.3 SITE PLANNING	84
7.4.4.3.1 PRINCIPAL PRIVATE OPEN SPACE	84

7.4.4.3.2 GARAGES AND PARKING	85
7.4.4.3.3 BUILDING FOOTPRINTS	87
7.4.4.4 SOLAR PLANNING	90
7.4.4.5 DWELLING DESIGN	90
7.4.4.6 VISUAL AND ACOUSTIC PRIVACY	92
7.4.4.7 DEFINING BOUNDARIES	93
7.4.4.8 SITE FACILITIES	94
7.4.5 TYPICAL DEVELOPMENT FORMS	94
7.4.5.1 APARTMENTS	94
7.4.5.2 TERRACE DWELLINGS AND LIVE - WORKS	96
7.4.5.3 SEMI DETACHED DWELLINGS	98
7.4.5.4 STUDIOS	99
7.4.5.5 BUILT TO BOUNDARY DWELLINGS	100
7.4.5.6 DETACHED DWELLINGS	101
7.4.5.6.1 SURVEYORS CREEK CATCHMENT	102
7.4.5.6.2 MULGOA CREEK CATCHMENT	104
7.4.5.7 NON-RESIDENTIAL DEVELOPMENT	106

Part B – Glenmore Park Stage 2

7.4 Glenmore Park Stage 2

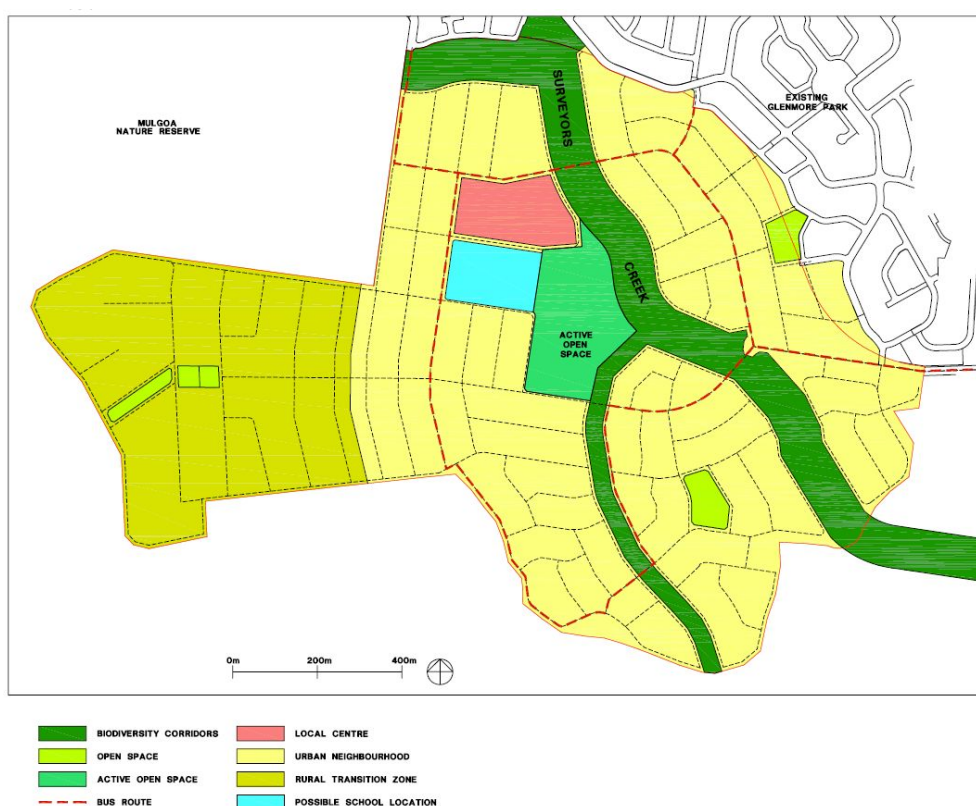
7.4.1 Preliminary

This Part is called 'Glenmore Park Stage 2' and supports the objectives of the Penrith Local Environmental Plan 2010 and to facilitate the sustainable development of residential, mixed use, retail and open space on the site.

7.4.1.1 Land to Which This Part Applies

This Section applies to the land as shown on Figure E7.14 below.

Figure E7.14: Glenmore Park Stage 2 Subject Land



7.4.1.2 Relationship to Other Plans and Documents

In addition to the provisions of the Penrith LEP 2010, the Section must be read in conjunction with any relevant Planning Agreement between the Glenmore Park Stage 2 Landowners (or individual landowners) and Penrith City Council. This section must be also read in conjunction with the Glenmore Park Stage 2 Development Contributions Plan 2007 where relevant.

The requirements of this Section are informed by Penrith's adopted Sustainability Blueprint for Urban Release Areas 2005.

7.4.1.3 Supporting Studies

The following supporting studies and documents have been used in the preparation of this Section:

- a) *Local Environmental Study* prepared by EDAW (November 2003).
- b) *Asset Protection Zone Assessment* prepared by Bushfire + Environmental Services (December 2006).
- c) *Corridor Management Plan* prepared by Cumberland Ecology (October 2006).
- d) *Stormwater Management Strategy* prepared by J. Wyndham Prince (October 2006).
- e) *Transport Management and Accessibility Plan* prepared by Transport and Traffic Planning Associates (October 2006).

These documents are available for reference from Council.

7.4.1.4 How to Use This Section

The section identifies key planning issues that Council will address when considering Development Applications. Each planning issue is structured in the following manner to provide a clear understanding of Council's expectations with regard to development:

Objectives:	Describe the rationale of the planning issue and what it is trying to achieve.
Performance Measures:	Qualitative measure against which a development's ability to achieve the objectives will be assessed. These measures provide flexibility for developers to achieve those objectives through a suite of design responses.
Development Controls:	Numeric based measures that will need to be achieved to meet the relevant objectives.

7.4.1.5 Concept Plans

A Concept Plan setting out proposals for the development of each precinct or site is required to be lodged and approved by Council prior to, or with, the first subdivision development application for each precinct.

A Concept Plan shall demonstrate:

- a) Proposed urban structure and public domain elements, including Landscape Masterplan.
- b) Delivery of required dwelling yield and diversity targets set out in Table E7.1.
- c) Distribution of lot types and housing forms to suit a variety of lifestyles, household types and financial capacities.
- d) Road hierarchy, sections and details.
- e) The location and design of open space networks
- f) The location of pedestrian and cycle paths.

- g) The Northern Road view shed analyses where required.
- h) Development Staging.
- i) Infrastructure Delivery Strategy.

7.4.2 Structure Plan

7.4.2.1 Introduction

A. Vision

A vision for Glenmore Park Stage 2 was established through the Local Environmental Study (LES). In brief, it recommended that the southern expansion of the Glenmore Park community should:

- a) Promote, service, and support a diverse, vital, and healthy community that is socially, environmentally, and economically sustainable, ensuring the quality of life for future generations.
- b) Demonstrate new benchmarks in urban outcomes and quality lifestyles.
- c) Be characterised by garden village precincts and rural living environments.
- d) Reflect the site's unique identity while building on its connection with Penrith City and the wider Region.
- e) Be characterised by innovation, accessibility, connectivity, sustainability, and diversity, celebrating the natural and cultural heritage of the area.

B. Objectives

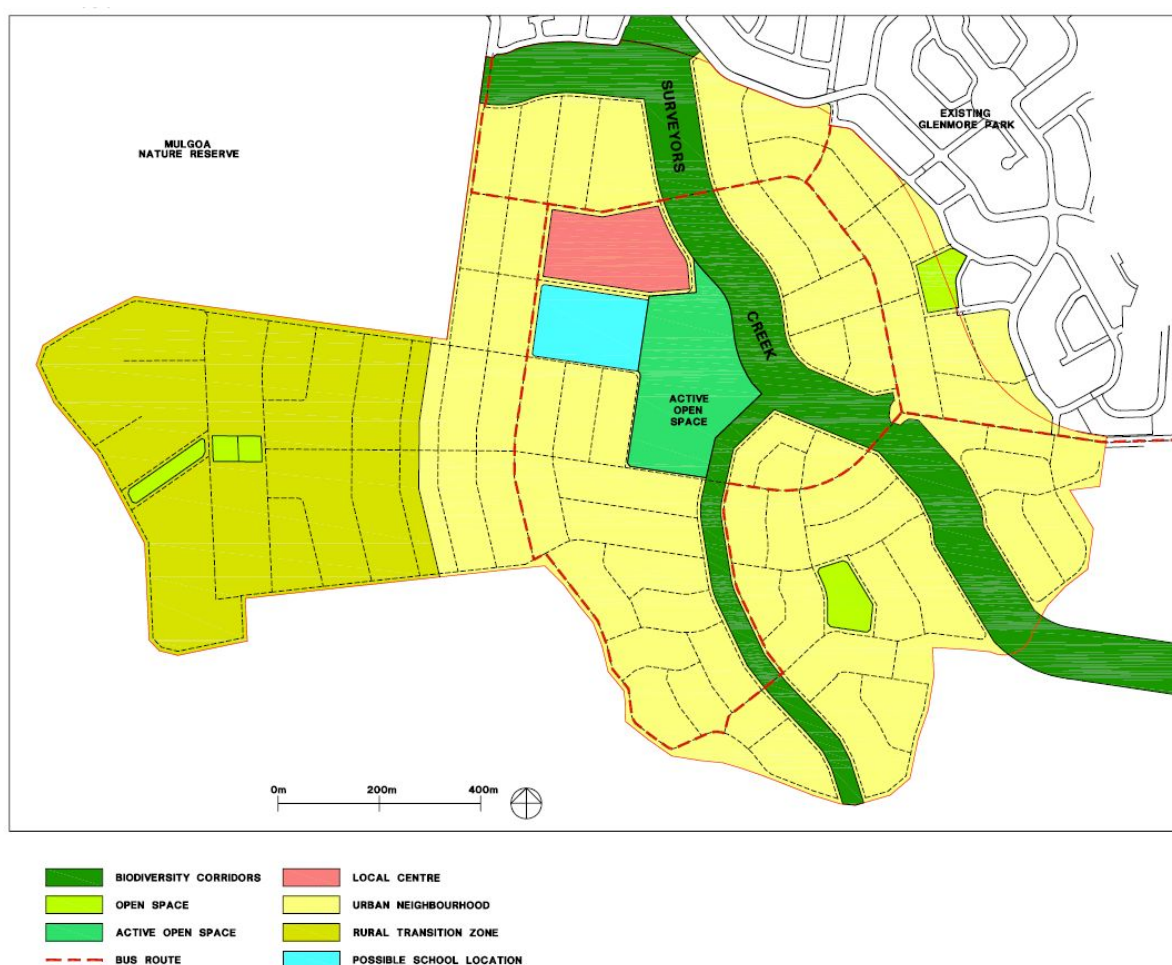
- a) To provide a clear planning framework for development of the subject lands.
- b) To ensure that the most efficient use of urban zoned land is achieved.
- c) To ensure development meets sound environmental planning practices and standards.
- d) To encourage development that satisfies ecologically sustainable design principles.
- e) To protect the environmental heritage of the area.
- f) To utilise and enhance the area's natural character of the lands to provide opportunities for a unique community identity.
- g) To promote sustainable building forms.
- h) To facilitate the provision of diverse housing forms reflecting the increasingly diverse profile of Penrith's communities.
- i) To facilitate increased dwelling densities in areas of the highest amenity and accessibility.
- j) To integrate all modes of transport to ensure there are efficient links within and between open spaces, neighbourhood centre and adjacent residential areas and services.
- k) To protect and enhance watercourses as natural systems, riparian corridors and biological linkages.

7.4.2.2 Urban Structure

- a) The principal land use within Glenmore Park Stage 2 will be residential. The residential areas will straddle either side of a lineal open space network represented as a riparian corridor that is centred on and conserves Surveyors Creek.

- b) A neighbourhood centre, active open space and primary school, are centrally located to provide a focal point for the new community.
- c) Vehicle access will be provided via Bradley Street and a loop collector road will represent the primary organising element of the road network.
- d) The loop road enables a legible road hierarchy to permeate throughout the subject lands.
- e) Two additional road connections through to the existing Glenmore Park suburb will also be provided at the northern edge of the release area.
- f) Active and passive open spaces will be distributed throughout the urban area, building on existing natural assets and providing a coordinated and integrated network throughout the release area.
- g) Higher density forms of housing will be provided along corridor edges, around the Neighbourhood Centre, in good proximity to public transport routes and adjacent to active and passive open spaces
- h) Residential areas in the west of the release area will provide larger lots that provide a transition between urban areas and the surrounding rural landscape.
- i) Glenmore Park Stage 2 Structure Plan establishes the structure and form for the planning and future development of the subject lands. This Plan is illustrated at Figure E7.27 with the main elements being described and expanded upon in more detail in Section 7.4.3 Public Domain of this Section.

Figure E7.15: Glenmore Park Stage 2 Structure Plan



7.4.2.3 Dwelling Yield

A. Objectives

- a) To achieve ensure efficient use of zoned land and required infrastructure is achieved
- b) To sustain services and facilities required for diverse urban communities, including public transport.
- c) To promote a diverse range of housing types which will accommodate a wide demographic profile.
- d) To promote affordable housing opportunities.
- e) To achieve a dwelling density of 15 dwellings per hectare over the Net Developable Area.

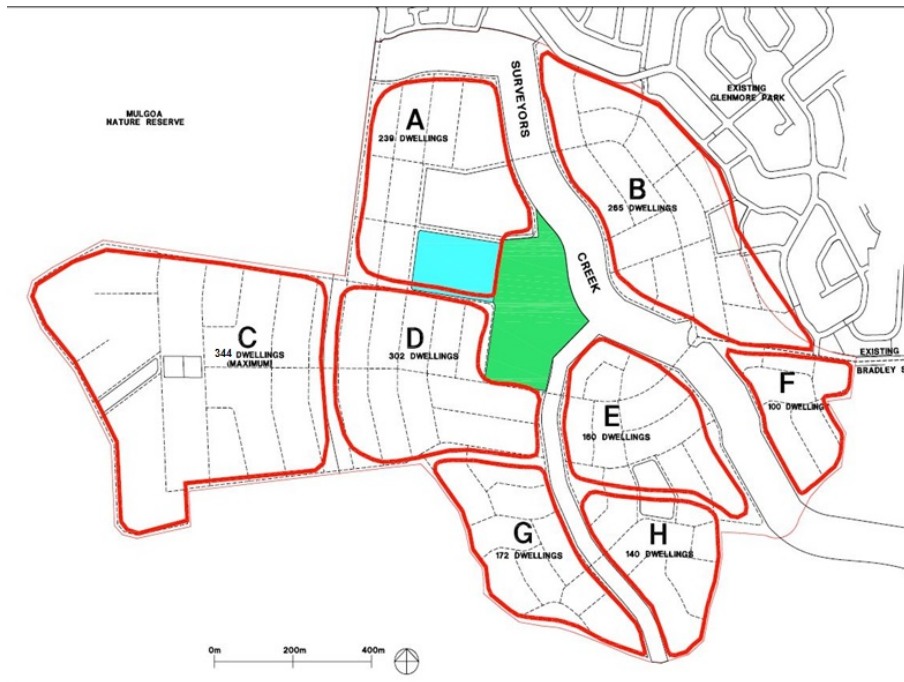
B. Development Controls

- 1) A minimum of 1,628 dwellings is delivered across the entire release area.
- 2) Precincts as identified at Figure E7.16 are to deliver the dwelling yield indicated. All dwelling numbers identified at Figure E7.16 are minimum targets except Precinct C which provides a maximum dwelling target.
- 3) As subdivision of a precinct occurs a mechanism (such as Section 88B instrument) will accompany the subdivision plan and will identify individual lots for future accommodation

of single dwellings, dual occupancies, terraces, apartments, etc. inclusive of the number of dwellings that each lot will deliver.

- 4) Any creation of 'super lots' and residue parcels will specify the minimum dwelling yield that those lots will be required to deliver. This may be achieved by way of a Section 88B instrument or other mechanism as agreed.
- 5) Council may require a detailed demonstration that proposed yields for lots are able to be suitably met as part of a Development Application.

Figure E7.16: Dwelling Yield



7.4.2.4 Dwelling Diversity

A. Objectives

- a) To promote diverse housing forms that meet the increasingly diverse demands of the local community.
- b) To ensure affordable housing strategies for the release area are achieved.

B. Performance Measures

These objectives may be achieved where diverse housing forms are provided within precincts and across the overall development area.

C. Development Controls

- 1) Development achieves indicative housing type numbers identified for each precinct at Table E7.1.

Table E7.1: Dwelling Diversity.

Precinct	Apartments and Studios	Terraces/Live-Works and Semi-Detached	Built to Boundary	Detached	Precinct Total
A	50	33	56	100	239
B	15	20	70	160	265
C	0	30	0	314	344
D	25	40	97	140	302
E	25	40	30	65	160
F	4	20	30	46	100
G	4	21	45	102	172
H	4	18	40	78	140
Total	127	222	368	1,005	1,722
% of Total	7.4	12.9	21.3	58.4	100

Note: Representations of these dwelling types are provided at Section 7.4.5 - Typical Development Forms of this Section.

7.4.3 Public Domain

7.4.3.1 Responding to the Site's Natural Features

7.4.3.1.1 Corridors

A. Objectives

- To conserve biodiversity by providing linkages between significant natural vegetation units within the City.
- To ensure that important natural features inform the urban structure of the place.
- To provide high amenity areas for residents.
- To protect, restore and enhance the environmental values and functions of watercourses and riparian corridors along Surveyors Creek and the western tributary of Surveyors Creek.

B. Performance Measures

These objectives may be achieved where:

- a) The natural drainage lines of Surveyors Creek and its western tributary are conserved as healthy and naturally functioning riparian corridors.
- b) Existing healthy remnant vegetation is retained within those corridors.
- c) Significant revegetation of the riparian corridors occurs as part of development.
- d) The corridors and other topographical features are represented as special places within the urban form.
- e) The design of the bridging structures over the corridor ensure the following:
 - i) Use of open piered bridge structures.
 - ii) 1% AEP flood conveyance.
 - iii) Flora and fauna connectivity.
 - iv) Scour protection.
 - v) Light penetration beneath structure.
- f) A Corridor Management Plan that identifies how the corridor will be established is prepared developed and implemented on site as part of its development.

C. Development Controls

- 1) A minimum corridor width of 100m is provided along the Surveyors Creek Corridor with an 80m Core Riparian Zone.
- 2) A minimum corridor width of 40m with 20m Core Riparian Zone is provided along the western tributary of Surveyors Creek.
- 3) The profile of the riparian corridors is consistent with that represented at Figures E7.18 and E7.19.
- 4) Riparian corridors are to be fully vegetated and provided in accordance with Figures E7.17, E7.18 and E7.19.
- 5) A Vegetation Management Plan must be prepared for the rehabilitation of the riparian corridors in Glenmore Park Stage 2 in accordance with the NSW Office of Water guidelines.
- 6) All remnant vegetation within the riparian corridors must be protected and rehabilitated.
- 7) All riparian corridors are to be vegetated with appropriate local native vegetation (i.e. fully structured trees, shrubs and groundcovers) at a density that would occur naturally.
- 8) An open and low perimeter fence or low bollard type barrier is to be provided along the entire perimeter of the riparian corridors to prevent inadvertent damage to riparian corridors.

Figure E7.17: Corridor Width Plan

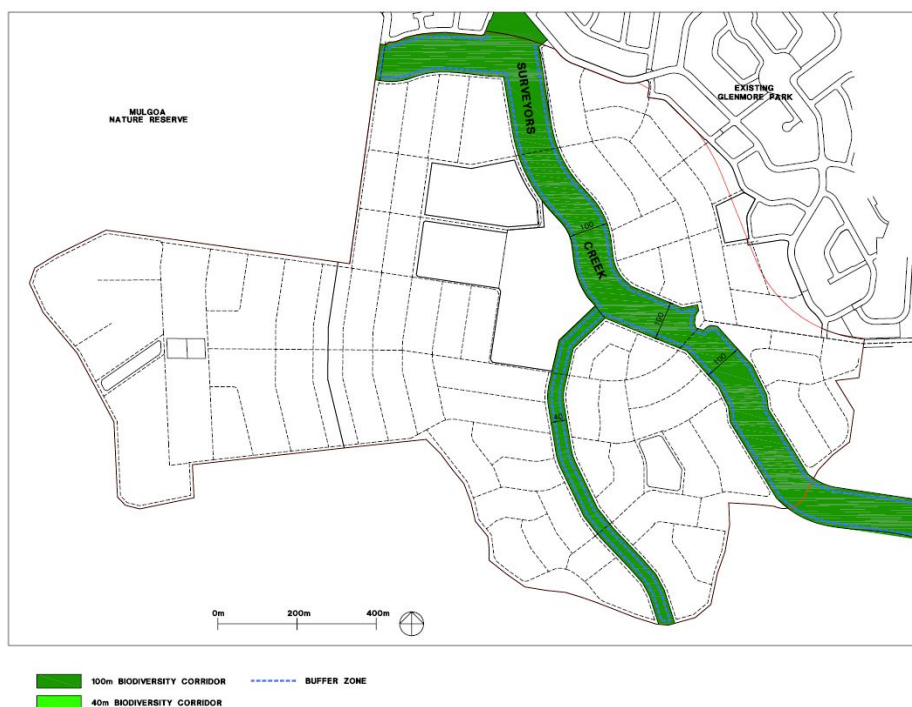


Figure E7.18: Corridor Profile Plan

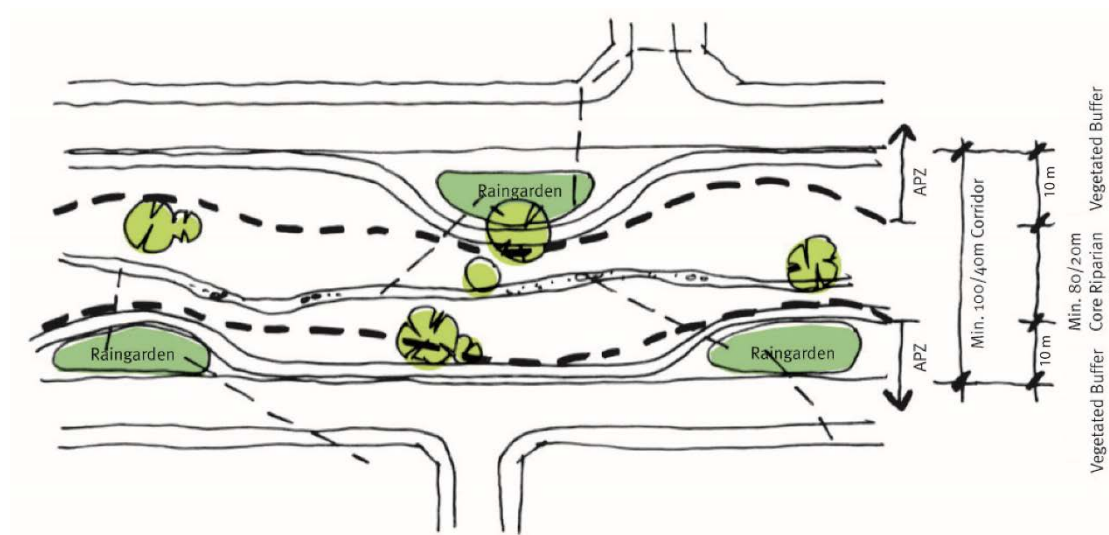
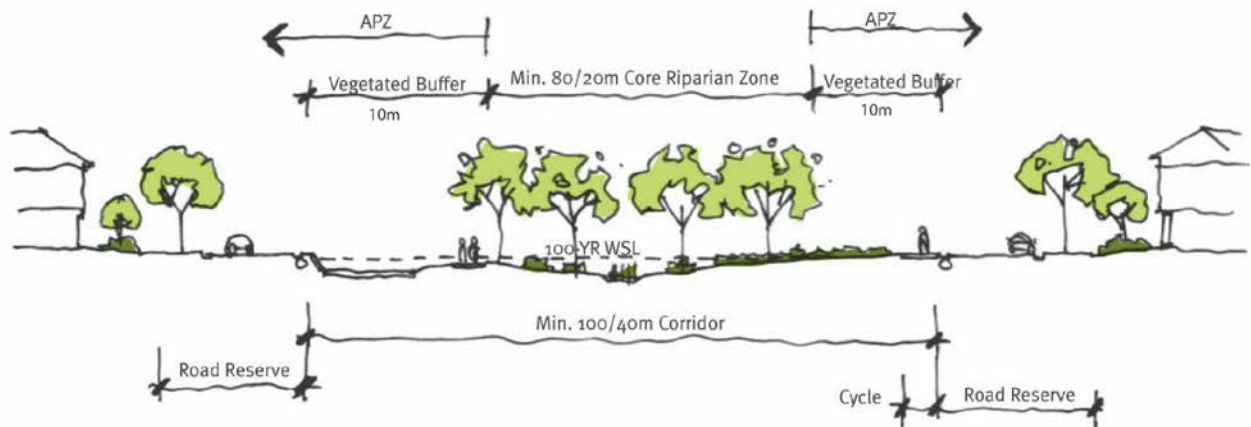


Figure E7.19: Corridor Profile Section



7.4.3.1.2 Bushfire Hazard Management

A. Objective

- a) To manage the risk to life and property assets from bushfire events while ensuring that the natural environment including riparian corridors are protected and enhanced.

B. Performance Measures

The objectives may be achieved where:

- a) Asset Protection Zones (APZs) of a scale and type suitable to the NSW Rural Fire Service are provided between all built forms and adjacent bushland units.
- b) APZ may incorporate the building setback of the adjoining built forms.

C. Development Controls

- 1) A minimum of 50m of the 100m wide corridor connection to the Mulgoa Nature Reserve is to be kept clear of vegetation that might promote the eastward spread of fire within the Reserve.

7.4.3.1.3 Water Management

A. Objectives

- a) To ensure Mulgoa Creek and Surveyors Creek are able to function as healthy, natural riparian corridors.
- b) To maintain the stability and integrity of the finished creek profile.
- c) To ensure the quality of water leaving the urban areas does not adversely impact upon the health of Mulgoa Creek and Surveyors Creek.
- d) To reduce the volume of stormwater run-off from the site.
- e) To ensure stormwater runoff is adequately treated before it enters the riparian corridors.

B. Performance Measures

These objectives may be achieved where:

- a) Trunk drainage works are provided as an initial stage of development of the release area.

- b) Stability within the watercourses prevents bank erosion.
- c) The stormwater management regime provides a treatment trains including pit inserts, bio-retention swales and rain-gardens to improve the quality of urban runoff before it enters the creek channels.
- d) The active playing fields, school site and neighbourhood centre incorporate on-site water quality treatment devices as part of their development.
- e) Separate Stormwater Management Plans for both the Mulgoa Creek and Surveyors Creek catchment that identify how the quantity and quality of urban runoff from the site will be managed are prepared and implemented on site as part of its development.

C. Development Controls

- 1) Achieve Council's downstream water quality objectives and measures in accordance with the Water Management Section of this Plan.

7.4.3.1.4 Flood Management

A. Objectives

- a) To manage the risk to life and property assets from flooding events.
- b) To allow the riparian corridor to function as a naturally occurring waterway.
- c) To manage most flood waters within the site.

B. Performance Measures

These objectives may be achieved where:

- a) Appropriate areas of land are provided outside the Core Riparian Zone for detention and storage of flood waters and may only be located within the vegetated buffer if no alternative location outside the vegetated buffer can be found, the basins only occupy limited areas and the basins can be designed in such a way that they will not reduce the function of the adjacent core riparian zone.
- b) Flood waters are managed within the riparian corridor.
- c) A Stormwater Management Plan for both the Mulgoa Creek and Surveyors Creek that identifies how the flood waters will be managed is prepared and implemented on site as part of its development.
- d) Refer to the flood liable provisions of Section C3 Water Management of this Plan for further details.

C. Development Controls

- 1) Stormwater detention is provided to reduce 1 year ARI post development flows to pre development levels.
- 2) Stormwater events larger than the 1 year ARI will be managed within the existing Blue Hills Wetland.

7.4.3.1.5 Trees

A. Objectives

- a) To protect and embellish local vegetation and habitat.

- b) To integrate significant trees within the landscape of the new urban area.

B. Performance Measures

These objectives may be achieved where:

- a) Existing mature trees are conserved for their natural functions and aesthetic value.
- b) Open spaces are co-located with existing stands of significant trees.
- c) Significant trees located within developable areas are able to conserved on site as part of the landscaped area of future development.
- d) No disturbance to existing ground levels occurs within the drip line of existing significant trees.
- e) Existing native vegetation in riparian corridors will be protected and corridors revegetated to fully structured native vegetation communities to provide habitat and movement for flora and fauna species.

7.4.3.1.6 The Northern Road View Shed

A. Objectives

- a) To conserve the important local view shed from The Northern Road as identified at Figure E7.20.
- b) To ensure that development in Glenmore Park Stage 2 is not visible from The Northern Road.

B. Performance Measures

These objectives may be achieved where:

- a) Built forms (including outbuildings, fences and other structures) are located below the level of the ridge that extends along the southern and eastern perimeter of the site.
- b) Built forms do not adversely impact upon the existing rural landscape character as viewed from The Northern Road and its view shed.
- c) Urban infrastructure such as street lighting and other structures do not adversely impact upon the existing rural landscape character as viewed from The Northern Road and its view shed.

C. Development Controls

- 1) The roofline of dwellings and other buildings are to be located below the southern and eastern ridgeline when viewed from The Northern Road. This may be achieved through:
 - a) Benching of road reserves and building lots.
 - b) Use of single storey dwelling construction along precinct edges.
- 2) Road reserves adjacent to the southern and eastern ridgeline are to be landscaped with local native species.
- 3) View-line analysis maps are to accompany each Precinct Concept Plan for Council's approval.

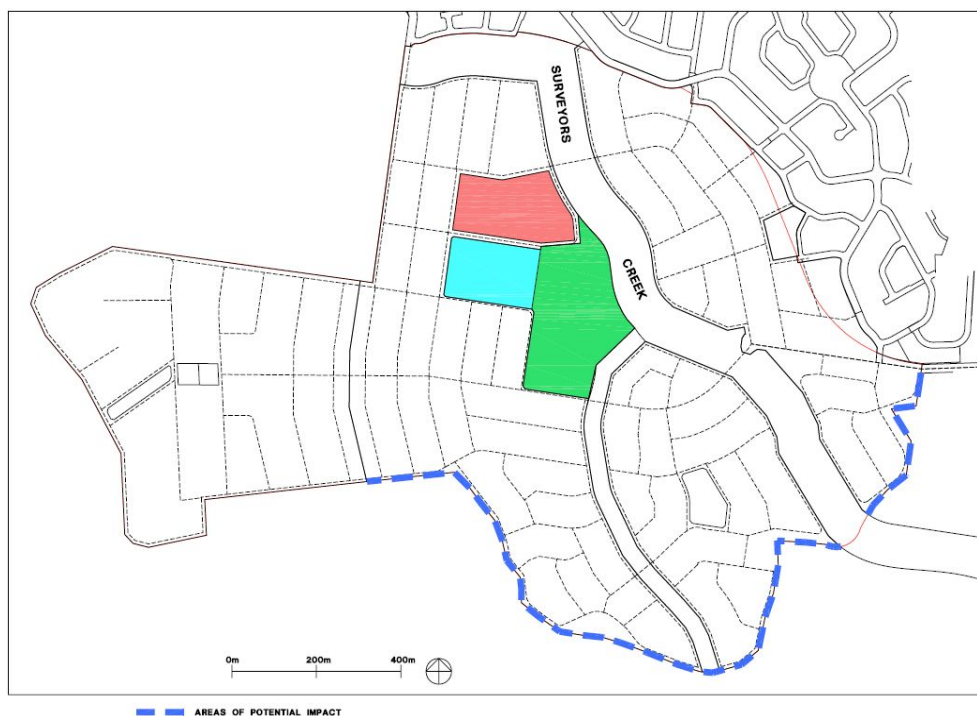


Figure E7.20:
Areas of
Potential
Views from
The
Northern
Road

7.4.3.2 Access and Movement

7.4.3.2.1 Urban Structure

A. Objectives

- To provide a clear urban framework for the entire release area that informs the location of land uses.
- To identify a clear hierarchy for movement within the subject lands and adjacent urban areas.
- To provide a safe and efficient movement network for all users.
- To promote public and active transport options.

B. Performance Measures

These objectives may be achieved where:

- a) The street network is a modified grid that facilitates walking and cycling for access to daily activities; and also enables direct local vehicle trips within the neighbourhood and to local activity points.
- b) The suburb has a coherent urban system of compact walkable neighbourhoods which cluster to form a suburb with a high degree of street connectivity.
- c) Neighbourhood identity is reinforced by the location of mixed use and open space areas at focal points within convenient walking distance for residents.
- d) The vehicle, cyclists and pedestrian networks, land-use mix and lot density assist in reducing local vehicle trips, travel distances and speeds, maximising public transport effectiveness, and encouraging walking and cycling to daily activities.

7.4.3.2.2 Vehicular Movement

A. Objectives

- a) To create a legible road hierarchy.
- b) To provide a high degree of connectivity within the site and between the site and the adjoining areas.
- c) To minimise the negative impacts of through traffic.

B. Performance Measures

These objectives may be achieved where:

- a) A hierarchy of streets should reflect the function and traffic load of each street in a network, minimise travel distances, maximise access to facilities and services and assist people find their way.
- b) A loop type internal collector road is provided as a defining element of the urban form and can accommodate bus movements. The route of this road is shown at Figure E7.21.
- c) The street network connects with adjacent collector routes and neighbouring streets to maximise movement efficiency and social connection.
- d) 3 vehicular access points to adjoining areas will be provided at locations shown at Figure E7.31.
- e) The predominant local street pattern is an east-west axial grid that maximises quantity of lots with a north-south axis.
- f) The street network takes account of the topography and vegetation and respects any existing or potential site assets.
- g) The street network allows all development to address the street.
- h) Rear lanes assist in reducing potential pedestrian and vehicle conflicts within the broader road network.

C. Development Controls

- 1) Street blocks have a maximum length of 300m and a maximum depth of 90m.
- 2) Cul-de-sacs are discouraged, however where their use is justified, will have a maximum length of 60m and only be used to improve the lot efficiency of deep or odd shaped street blocks and will always have their head located away from dominant movement direction.

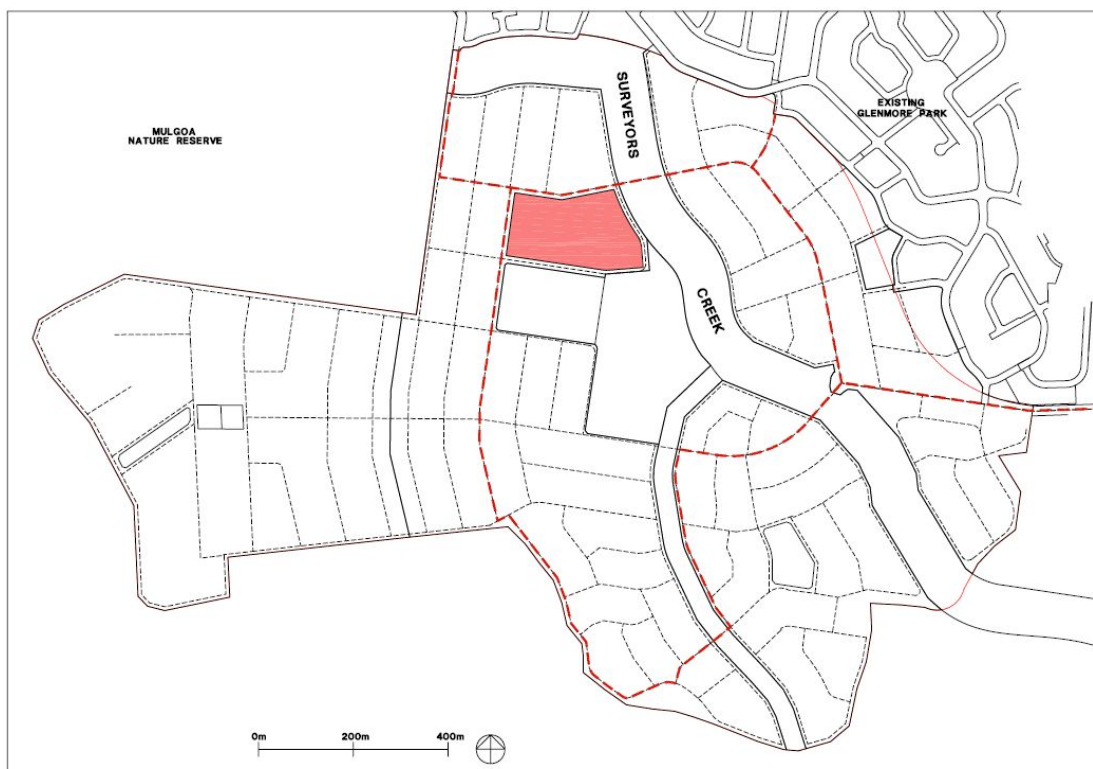


Figure E7.21: Road Network

7.4.3.2.3 Public Transport

A. Objectives

- a) To increase opportunities for use of public transport.
- b) To enable the efficient operation of bus routes on designated roads.
- c) To encourage the early introduction of bus services within the estate.

B. Performance Measures

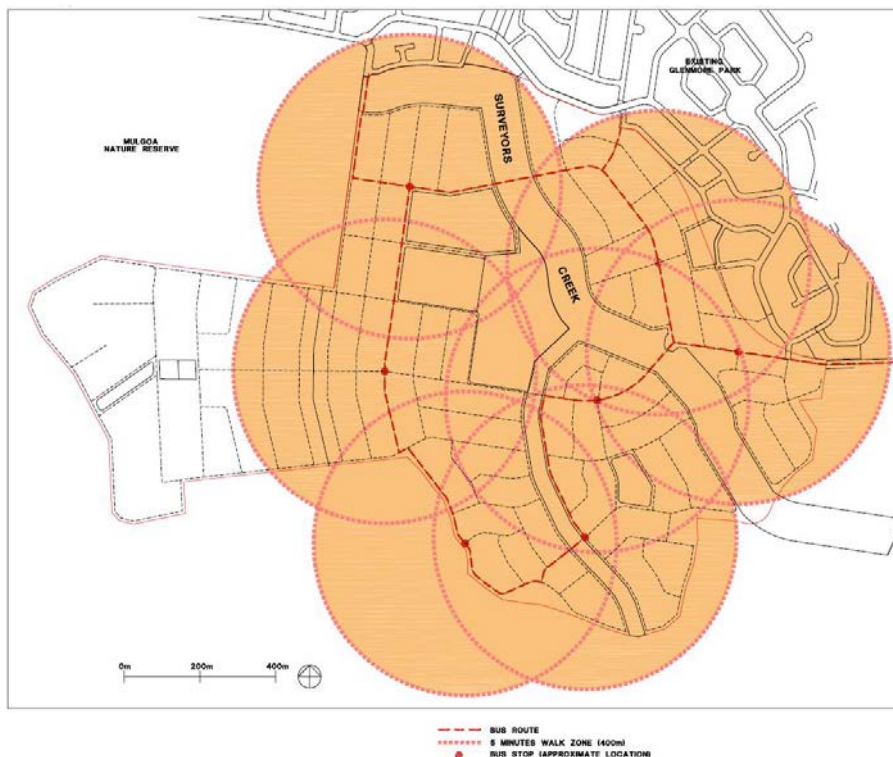
These objectives may be achieved where:

- a) The bus route facilitates connections between Precincts, the existing Glenmore Park estate and key facilities within the subject lands, local facilities and the Penrith CBD.
- b) A 10% modal shift from private vehicle to active and public transport modes is reached or exceeded.
- c) Bus routes and sheltered bus stops are designed, constructed and clearly marked.
- d) The planning principles for public transport are shown at Figure E7.22 are delivered as part of the development.
- e) The early delivery of bus services as the community grows.

C. Development Controls

- 1) All dwellings within the Surveyors Creek catchment are within 400m distance from the designated bus route.
- 2) The bus route will be designed and constructed in accordance with the road profiles identified at Section 7.4.3.3.3 Road Sections of this Part.

Figure E7.22: Public Transport Principles



7.4.3.2.4 Pedestrians and Bicycles

A. Objectives

- a) To promote active transport options by providing safe and convenient routes to and from key focal points within the release area and to the existing Glenmore Park estate.
- b) To promote an active and healthy lifestyle.
- c) To promote casual social interaction among neighbours.
- d) To promote Universal Design principles in all new facilities.

B. Performance Measures

These objectives may be achieved where:

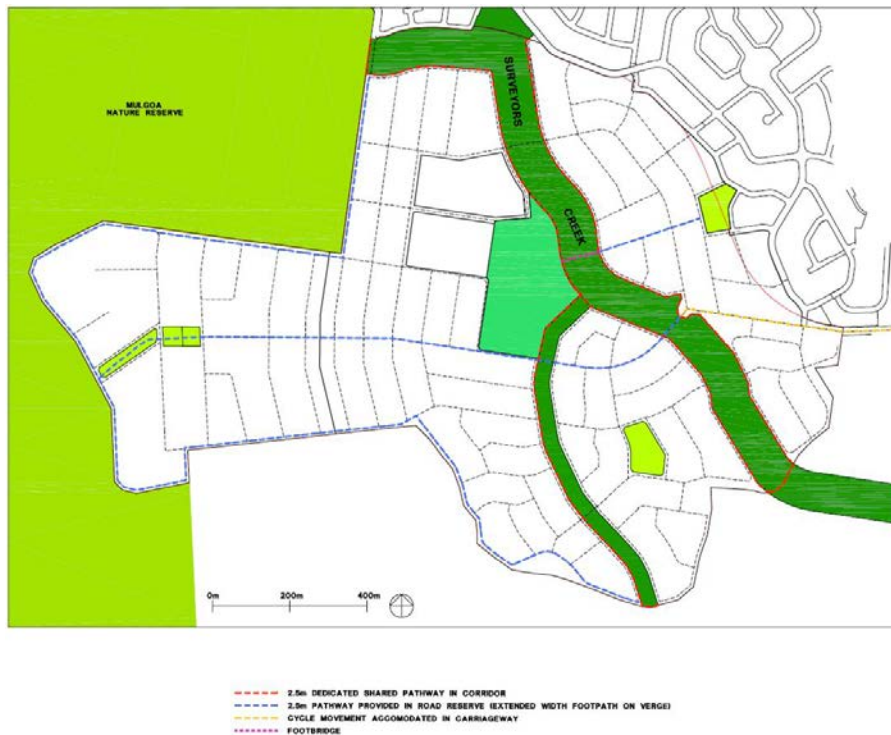
- a) Footpaths are an integrated element of the normal street network.
- b) The cycle network is a combination of on street and dedicated pathways that link the main points of attraction and significant natural features.
- c) Separate pathway will operate within parks and open spaces areas as well as the locations identified at Figure E7.23.
- d) Pathways in open spaces are aligned approximately parallel with its interface to the street to take advantage of the street lighting and allow for casual surveillance by residents and drivers.
- e) When provided within the street network, development that adjoins the shared pathway will generally provide vehicle access from rear lanes.

- f) Pathways are designed and constructed wherever possible and practical to be of appropriate width, longitudinal gradient and sight distance.
- g) Kerb details cater for all users, including aged people, people with prams and in wheelchairs, and people with disabilities, and take account of Universal Design principles.
- h) Street landscaping is provided to enhance the appearance of the street and pedestrian environment, including providing protection from the sun.
- i) A primary pathway network is designed, constructed and clearly marked in accordance with Figure E7.24, and with appropriate connections to existing Glenmore Park.
- j) Bicycle racks are provided as part of all developments that attract significant public patronage.
- k) Pedestrian paths and cycleways that are located within the riparian corridor must be in accordance with the Department of Water and Energy's 'Design and Construction of Paths, Cycleways and Accessways along Watercourses and Riparian Area Guideline 2007'.

C. Development Controls

- 1) The minimum width for footpaths provided as part of a road reserve is 1.2m.
- 2) Pathways on the collector roads and Bradley Street will be a minimum of 1.5m.
- 3) Pathways that form part of the open space network are a minimum of 2.5m.
- 4) Where the pathway aligns with the street network, as identified at Figure E7.23, the road reserve will be widened by 1.3m where it aligns with a local road or minor local road and 1.0m where it aligns with a collector road as determined by section 7.4.3.3.3 Road Sections, to ensure a 2.5m pathway can be provided.
- 5) Footpaths are to be provided to both sides of all roads (except Bradley Street Entry Area where a footpath is required only on the northern side).

Figure E7.23: Pedestrian + Cycle Network



7.4.3.3 Streetscapes

7.4.3.3.1 Landscape Character

A. Objectives

- To provide an attractive and sustainable residential community.
- To ensure development contributes to cohesive streetscape and desirable pedestrian environments.
- To provide safe and secure environments for pedestrians and cyclists.
- To promote casual social interaction among neighbours.
- To encourage an active and healthy and active lifestyle.
- To ensure street layouts provide well distributed public open spaces that contribute to the legibility and character of the development.
- To promote landscape treatments that is appropriate to the character and constraints of each locality.

B. Performance Measures

These objectives may be achieved where:

- The release area landscape includes streets lined with tall tree species.
- Landscaping is provided to create a character that is distinct to each Precinct.
- Streets are designed to establish or enhance the unique character of the precinct by responding to its topography, desirable views or local features.
- Street vistas are terminated with views to open spaces, parks and the Blue Mountains, where possible.

- e) The carriageway is visually contained to promote steady, predictable traffic speeds by:
 - i) Clearly defining the boundary between pedestrian and vehicle zones.
 - ii) Providing on-street parking.
 - iii) Planting street trees at regular spacing within the carriageway and/or verge.
- f) Boundaries between street verges and private front yards are clearly defined and houses are designed to encourage passive surveillance.
- g) Landscaping helps define boundaries, create continuity and provide shade.
- h) Water sensitive urban design elements are integrated into street verges, where possible.
- i) On-street parking is provided at a rate appropriate to the anticipated demand while ensuring the landscape character and street function is not compromised.
- j) Design details such as footpath and driveway cross-overs are uniformly applied to make the street character more consistent.
- k) Street signage is designed to be complementary to the overall streetscape design and character and signage clutter is avoided.

C. Development Controls

- 1) Street trees are provided at a rate of one tree for every 10m of site frontage.
- 2) Street trees are provided at minimum size of 75 litres and fitted with tree guards.
- 3) Species selection is appropriate to the character and constraints of the locality.
- 4) Footpath verges are increased adjacent lots which have building setbacks less than 4.5m and where large street tree planting is proposed.

7.4.3.3.2 Street Furniture and Public Art

A. Objectives

- a) To visually define and promote attractive public spaces.
- b) To enhance public spaces so that they are vibrant, safe and welcoming.
- c) To create a sense of identity for the area by building distinctive places which reflect cultural diversity and local heritage and illuminate contemporary significance and meaning.
- d) To facilitate cultural identity through art and design in public places, with the engagement of the local community.

B. Performance Measures

- a) Public art is used to define entry ways to the new release area.
- b) Public art is provided throughout key public domain areas.
- c) Public art may be freestanding art objects or works integrated into building facades, other built edges, and landscaping adjoining public spaces.
- d) Street furniture maximises pedestrian comfort, convenience and amenity.
- e) Street furniture forms an integrated element of the streetscape.
- f) Street furniture is integrated into the design of all public spaces and includes:

- i) Seats.
 - ii) Litter bins.
 - iii) Drinking fountains.
 - iv) Lighting.
 - v) Street and information signs.
 - vi) Bicycle racks.
 - vii) Planter boxes.
 - viii) Other items suitable to the function of each public space.
- g) Street furniture throughout precincts should be consistent in design and style.
- h) Street furniture is to be located so as not to impede mobility, in accordance with AS1428:1-4.
- i) Location and detailing of all proposed street furniture and public art is indicated on Landscape Plans submitted with Development Applications.

7.4.3.3 Road Sections

A. Objectives

- a) To provide a safe and efficient movement network for all users.
- b) To encourage responsible driving behaviour, particularly low travel speeds on residential streets.
- c) To cater for the efficient provision of public utilities.
- d) To incorporate the natural features of the site including the movement of stormwater, existing and new trees.

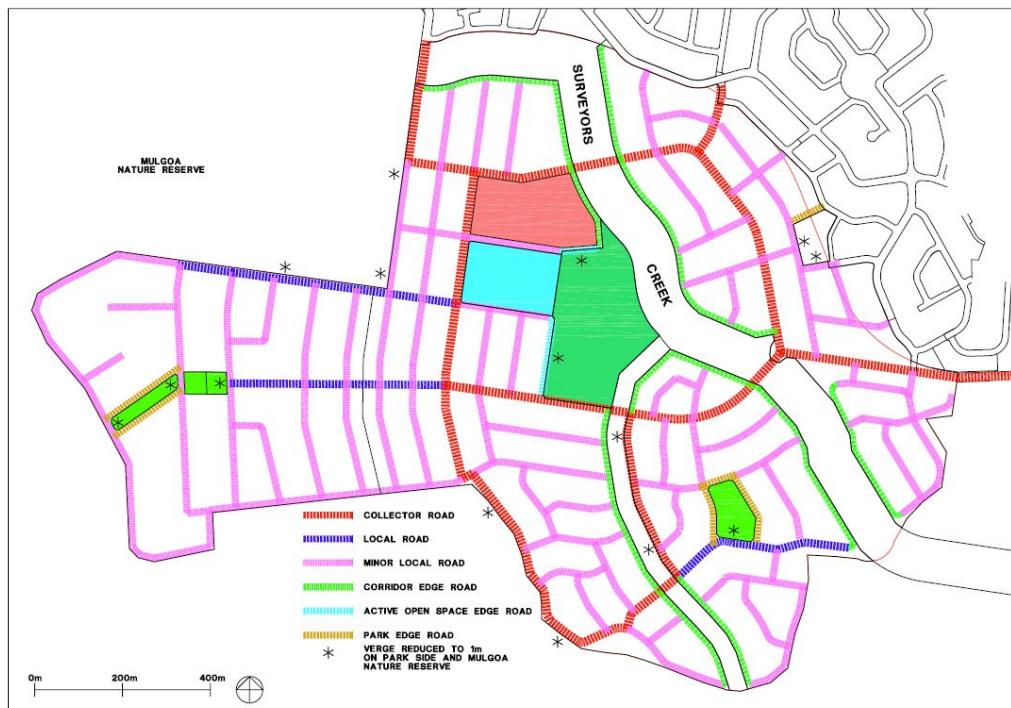
B. Performance Measures

These objectives may be achieved where:

- a) Streets are designed to ensure vehicle speeds can be controlled and it is clear where vehicles can be parked, cyclists can ride and where pedestrians should walk or cross.
- b) Opportunities for walking and cycling are well provided for.
- c) The materials, line marking and landscaping of the streets clearly delineate the travel lanes from the parking “lanes”.
- d) Where the provision of parking “lanes” is included in the street reserve width, they are landscaped as parking bays and defined by means of line marking and/or built tree planting bays.
- e) Parking on the grassed verge or on parks is restricted.
- f) Intersections are designed for the safe and convenient passage of vehicles, pedestrians and cyclists.
- g) Kerb radii at intersections and junctions are kept to a minimum, subject to satisfying required turning templates, to keep pedestrian crossing distances to a minimum, to control the speed of turning vehicles and to reduce the visual impact of large junctions.
- h) Speed control devices are provided to achieve target speeds.

- i) Any speed control devices, inclusive of road narrowing, are to be designed to take into account the needs of cyclists.
- j) Varying degrees, relative to the road hierarchy, of delays or the need for driver co-operation due to vehicles parking on local roads is an acceptable, traffic calming outcome.
- k) Upright kerbs are used throughout the suburb.
- l) Development occurs in accordance with the road hierarchy demonstrated at Figure E7.24.

Figure E7.24: Road Hierarchy



1) Bradley Street

A. Performance Measures

- a) Provides an entry statement to the release area.
- b) Where the topography allows, the road reserve provides water treatment swales rather than kerb and gutter.
- c) All development directly addresses the road.
- d) Direct vehicular access to development occurs only where topography and site distances allow.
- e) Provides for dedicated cycle lane on carriageway.
- f) The configuration of Bradley Street within the Urban Area - specifically the width of the kerb side lanes, can be adjusted to suit alternate access arrangements, such as services roads or areas where access is denied or not required.

B. Development Controls

- a) Bradley Street entry area is constructed in accordance with dimensions identified at Figure E7.25.
- b) Bradley Street urban area is constructed in accordance with dimensions identified at Figure E7.26.

Figure E7.25: Bradley Street – Entry Area

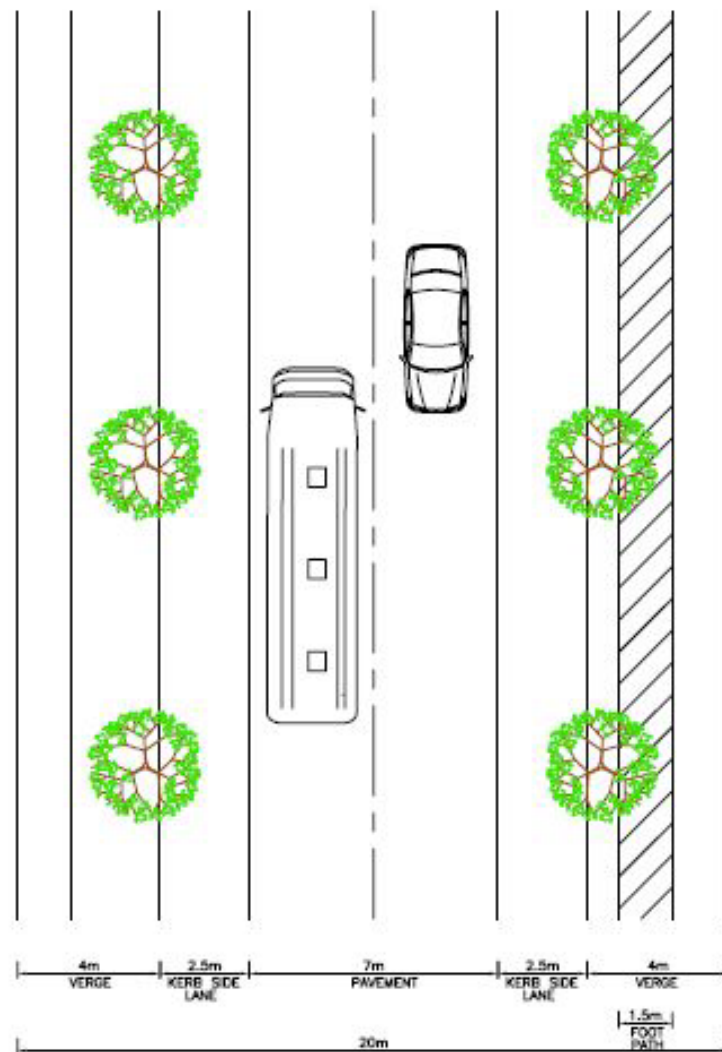
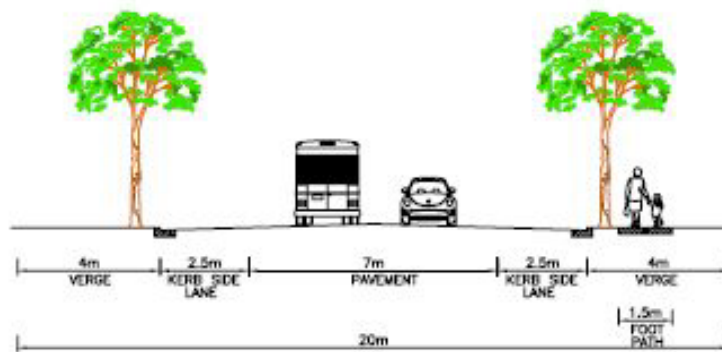
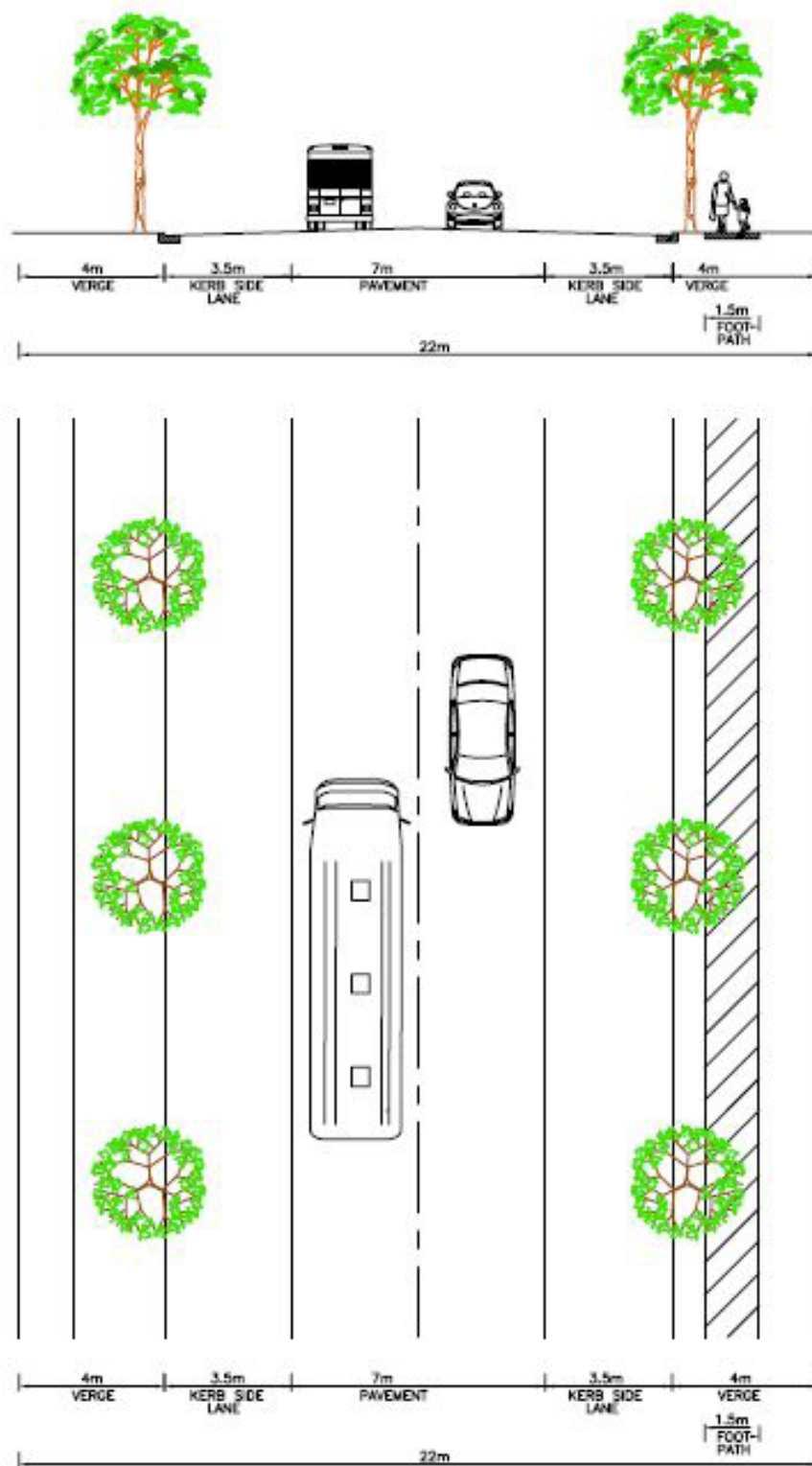


Figure E7.26: Bradley Street – Urban Area



2) Collector Roads

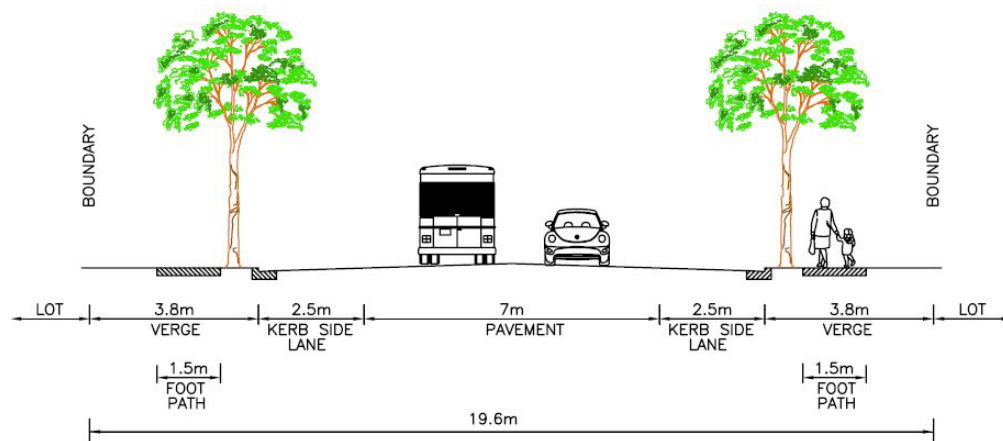
A. Performance Measures

- a) Provide high accessibility for all road users throughout the release area.
- b) Exhibit an urban landscape character.
- c) Have a clear lane width able to handle local bus services.
- d) Are of a scale consistent with the higher order role these roads will play in the overall movement network the release area.
- e) Integrate footpaths and establish pedestrian amenity that reflect the linking role these streets will play in the urban fabric.
- f) Be designed to provide safe pedestrian crossing points and lighting in accordance with the relevant Australian Standard.
- g) Are able to comfortably accommodate the co-location of bus shelters and pathways.

B. Development Controls

- 1) Collector Streets are constructed in accordance with Figure E7.27.
- 2) Widening of road may be required where topographical or road curve circumstances dictate.

Figure E7.27: Collector Road



3) Local Roads

A. Performance Measures

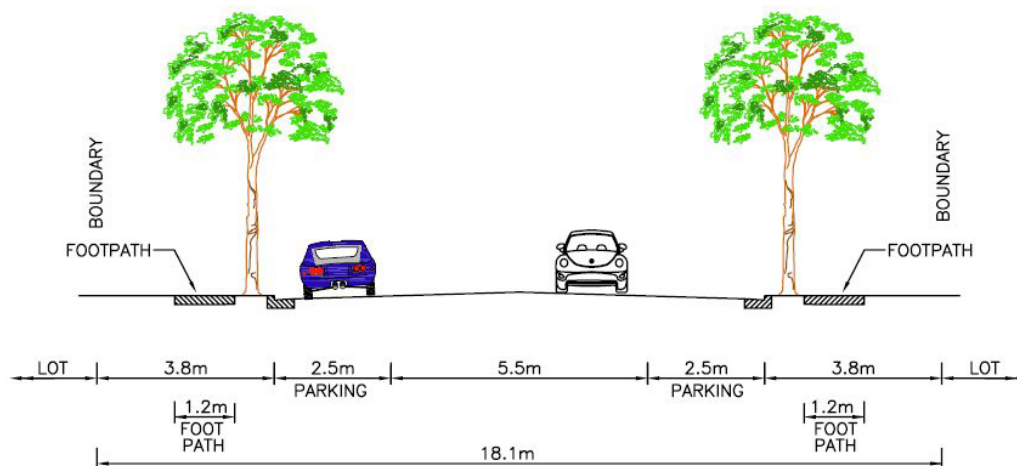
- a) Provide high levels of accessibility between the loop road and adjoining precincts.
- b) Roads are designed to allow a reasonable free flow of traffic at lower speeds.
- c) Occasional, minor delays or the need for driver co-operation due to vehicles parking on local roads is an acceptable, traffic calming outcome.

- d) Speed controls are provided as integrated element of the streetscape.
- e) Comfortably accommodate informal on-street parking.

B. Development Controls

- a) Streets are constructed in accordance with the dimensions identified at Figure E7.28.
- b) Widening of road may be required where topographical or road curve circumstances dictate.

Figure E7.28: Local Road



4) Minor Local Roads

A. Performance Measures

- a) Provide limited vehicle access for through traffic looking to access or exit the local road network.
- b) Regular, minor delays or the need for driver co-operation due to vehicles parking on local roads are an acceptable, traffic calming outcome.
- c) Maintaining high levels of permeability for non-vehicle road users.
- d) Roads are designed to ensure a low speed traffic environment.
- e) Informal on street parking constrains traffic movement.

B. Development Controls

- 1) Streets are constructed in accordance with the dimensions identified at Figure E7.29.
- 2) Widening of road may be required where topographical or road curve circumstances dictate.

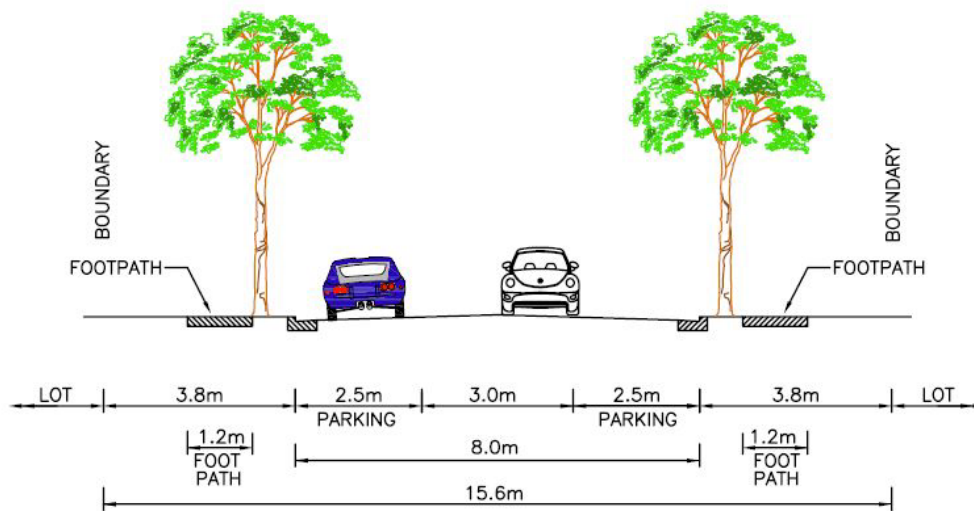


Figure E7.29: Minor Local Road

5) Lane Ways

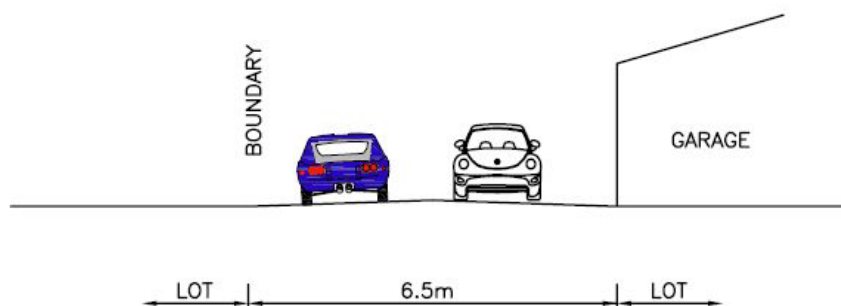
A. Performance Measures

- Lanes are shared zones allowing vehicular traffic for access to rear loaded garages only.
- Are to incorporate a change in materials and/or kerb cuts to provide differentiation to other vehicular streets.
- Are constructed in plain concrete pavement.
- No parking is permitted in Lane Ways.
- Designed with a central invert for drainage where topography allows.
- Studio units built above or adjacent to garages will be encouraged to provide surveillance.
- Laneway provide distinctive plantings at lane entry areas.

B. Development Controls

- Streets are constructed in accordance with the dimensions identified at Figure E7.30.
- Widening of road may be required where topographical or road curve circumstances dictate.
- The road design seeks to provide a maximum speed of 15 km/h.

Figure E7.30: Laneways



7.4.3.4 Open Spaces

7.4.3.4.1 Active Open Space

A. Objectives

- a) To provide for the active recreational needs of the local community.
- b) To provide multipurpose sporting and recreational activities that reflects seasonal demands.
- c) To provide a central neighbourhood place for community activities and gatherings.
- d) To provide the focus of interconnected high amenity landscaped environment.
- e) To encourage an active lifestyle for residents.

B. Performance Measures

These objectives may be achieved where:

- a) An active open space area is provided in accordance with the Figure E7.31.
- b) The open space provides a diverse range of active and sporting facilities.
- c) Active playing areas are provided with facilities and infrastructure to support various sporting events, including amenities for spectators.
- d) Active playing areas are differentiated as separate places by plantings, paths and other landscape elements.
- e) Pathways provide:
 - i) connection between the site and the broader pedestrian and bicycle network.
 - ii) spectator access to and around the playing fields.

- iii) connection to the Neighbourhood Centre and Primary School.
- f) Adjacent buildings provide passive surveillance of the park area.
- g) No back fences of development are to face public open space.
- h) Parking is provided both as a central parking lot and parking bays on the streets around the park.
- i) Large trees are provided around the perimeter of the park to enclose the space.
- j) The park is provided with an open and low fence or bollard type barrier along its perimeter.
- k) The park either provides or is co-located with the following facilities
 - i) large children playground.
 - ii) BBQ + Picnic facilities.
 - iii) Shade and seating structures,

within or adjacent the riparian zone, but only within the vegetated buffer if no alternative location outside the vegetated buffer can be found, they only occupy limited areas, and they can be designed to not reduce the function of the adjacent core riparian zone.

- l) The indicative layout of the open space areas is shown on Figure E17.32.

C. Development Controls

- 1) A minimum area of 6.9 hectares is to be provided for active open space in a single location and configuration that can accommodate all identified uses.
- 2) Minimum Sporting facilities are to include:
 - a) Two Rugby League fields capable of use for cricket in summer cricket.
 - b) A multi-purpose Little Athletics and AFL field.
 - c) Two long jump pits.
 - d) One discus and shot put cage with associated throw space.
 - e) All active areas are provided with training lights.
 - f) Playing fields are provided on a north-south axis.
 - g) Safe and functional spectator seating and standing areas adjacent to the playing on their east and west sides.
 - h) A centrally metered irrigation system for the playing fields.
 - i) Shade structures for spectators.
- 3) A centrally located amenities complex containing:
 - a) 4 x team change rooms.
 - b) 2 x referee change rooms.
 - c) 2 x public toilet facilities appropriate for the number of spectators.
 - d) 2 x canteen spaces with a shared kitchen.
 - e) 2 x storage spaces.
 - f) 1 x field management facility approximately 200m² in area.

- g) Wide paved apron area and roofed verandahs.
- h) A bitumen sealed, line-marked and lit area for 100 parked cars (including adequate accessible parking) and associated manoeuvring.

Figure E7.31: Open Space Network

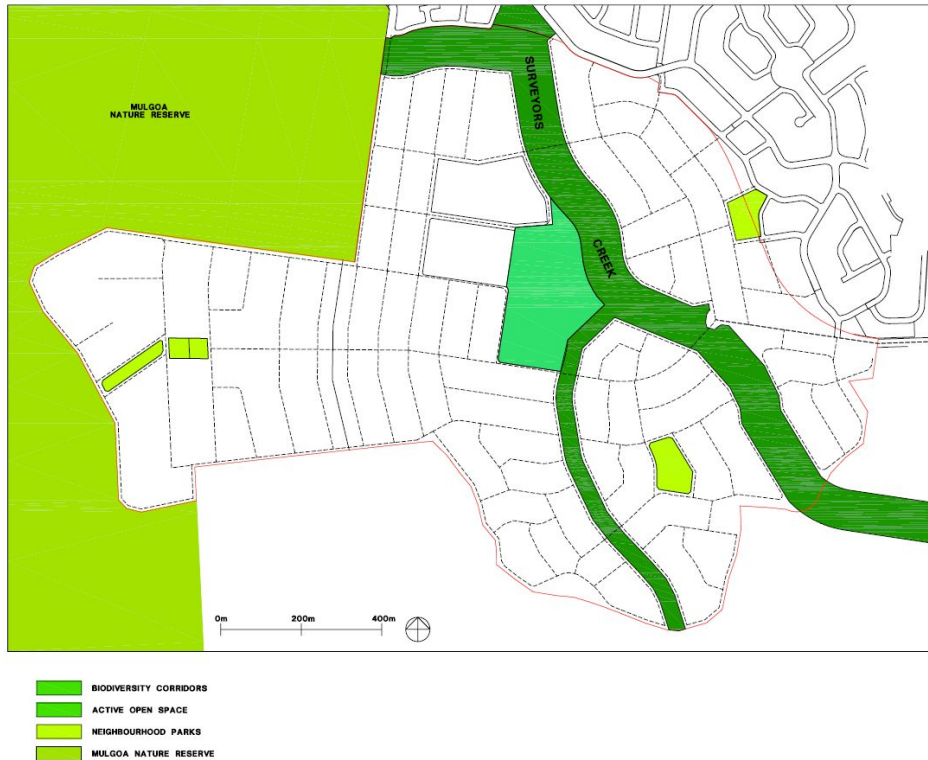


Figure E7.32: Active Open Space Layout



7.4.3.4.2 Neighbourhood Parks

A. Objectives

- a) To create a variety of public spaces that provides both passive and informal active open spaces.
- b) To conserve natural features of the site.
- c) To provide high amenity areas for adjacent residential development.
- d) To facilitate cultural identity through art and design in public places, with the engagement of the local community.

B. Performance Measures

These objectives may be achieved where:

- a) Each park is provided with has its own distinctive landscape character.
- b) Existing vegetation is retained and enhanced by additional complementary plantings.
- c) Parks create a precinct focus for the surrounding neighbourhood.
- d) Parks are generally bounded by streets with buildings oriented towards the open space providing outlook and passive surveillance.
- e) There are no back fences of development facing public open space.
- f) The parks provide linkages between the broader pedestrian and bicycle networks.
- g) Playground facilities are provided within the parks.
- h) Seating and shade opportunities are provided within the parks.
- i) The indicative location of neighbourhood parks is shown on Figure E7.31.

- j) Public art is provided throughout key public domain areas (refer Section 7.4.3.3.2 Street Furniture and Public Art).

C. Development Controls

- 1) A minimum total of 3.0 ha will be dedicated to Council to create 3 x large neighbourhood parks in areas generally shown at Figure E7.31.

7.4.3.4.3 Riparian Corridor Edge Parks

A. Objectives

- a) To provide an integrated network of open spaces.
- b) To enhance the character of major drainage routes through revegetation of those corridors.
- c) To provide high amenity areas for adjacent residential development.
- d) To link and extend the access and movement network for bicycles and pedestrians.
- e) To encourage an active lifestyle for residents by providing recreational and educational opportunities.

B. Performance Measures

These objectives may be achieved where:

- a) Recreational and educational opportunities dominate over the stormwater function of this location.
- b) A perimeter pathway is provided along both edges of the corridors.
- c) The pathway meanders through a diversity of landscaping settings that provide shade opportunities for users.
- d) The park is generally bounded by streets with buildings oriented towards the open space providing outlook and passive surveillance.
- e) There are no back fences of development facing the public open space.
- f) The park is provided with an open and low perimeter fence or bollard type barrier along the entire edge.
- g) Facilities including seating, shade, playgrounds and interpretive signage are provided at regular intervals along the edge.
- h) Parking opportunities are provided within the road reserve and co-located with recreational facilities.
- i) Riparian corridor parks can be co-located with active open spaces and neighbourhood parks.

C. Development Controls

- 1) The minimum width for shared and dedicated paths in open space network is 2.5m.

7.4.3.5 Neighbourhood Precinct

A. Objectives

- a) To create a memorable village experience for the local community.

- b) To provide a highly accessible community focal and gathering point.
- c) To create a retail centre based on traditional 'Main Street' shopping experiences.
- d) To ensure that a safe public domain represents a defining element of the centre.
- e) To accommodate a diverse mix of land uses including residential.
- f) To ensure that adequate land is reserved for the provision of a Primary School.
- g) To ensure the scale of retailing facilities sits comfortably within the local and regional retail hierarchy.
- h) To avoid duplication of parking provision by co-locating key land uses.
- i) To facilitate and encourage walking, cycling and public transport access as well as car access.

7.4.3.5.1 Urban Structure

A. Performance Measures

- a) The Neighbourhood Precinct is located at the heart of the community within a 10 minute walk for most of that community.
- b) A high quality public domain area is provided as part of a central organising element of the centre.
- c) The centre is co-located with other high use public places including active open space and the primary school.
- d) The retail area is located on the loop collector road.
- e) Accessible and legible linkages are provided between other key community components such as recreation areas and schools.
- f) The Precinct accommodates multi-mode transport ensuring excellent pedestrian and cycle links.
- g) Public transport is accommodated within the centre of the retailing precinct.
- h) The precinct shall provide both open-lot car parking and street based parking for convenience.
- i) Various land uses co-located in the Neighbourhood Precinct make efficient use of the total car parking spaces available.
- j) People are able to park their car in one location and engage in a variety of activities in close proximity to that space and within a safe pedestrian environment.
- k) Retail facilities are delivered as an early element of the broader release area.

7.4.3.5.2 Urban Character

A. Performance Measures

- a) The Precinct creates a sense of arrival and community identity.
- b) The Precinct is integrated into the overall release area landscape structure, emphasising the hierarchy of the precinct in the overall urban structure.
- c) A walkable pedestrian friendly environment is to be established with leafy active wide footpaths and pedestrian links that connect activities and gathering spaces.

- d) The precinct includes public meeting places, squares or promenades to create varied, comfortable, and accessible environments that provide a focus and destination for community activity.
- e) Car parks are to be leafy plazas that provide opportunities for other uses (i.e. markets or public gathering) with clear defined pedestrian links.
- f) Where medium to large scale uses are planned, finer grained uses should be incorporated time to minimise the impact of bulk and scale to the main thoroughfares of pedestrian movement.
- g) Opportunities for residential development are carefully planned within and adjacent to the Precinct Centre providing for passive security and surveillance.
- h) Appropriate dwelling forms encourage growth of the Precinct in time, both in terms of extended active hours and adaptive uses that allow for home based incubator businesses to emerge.
- i) The building form creates a series of spaces that provide shade in summer, sun in winter and are sheltered from unpleasant prevailing winds.
- j) Buildings define the street and provide a relatively continuous street frontage.
- k) Public art is incorporated at key focal points to promote community identity.
- l) The Main Street road reservation will allow for the provision of generously wide footpaths.
- m) Housing forms in the precinct will provide opportunities for home based employment and businesses.
- n) Key street intersections and transport interchanges are provided with distinctive paving and threshold type landscape treatments.

7.4.3.5.3 Retail Built Forms

A. Performance Measures

- a) Retailing is provided in a combination of traditional main street and internalised spaces.
- b) Smaller scaled single shops are presented to the main street.
- c) Maximise the percentage of active shopfront to public streets.
- d) Buildings are built primarily to the street edge.
- e) Glazed shop fronts are provided at the interface with the street.
- f) Wide awnings or verandahs are provided to the main street to provide pedestrian amenity.
- g) Shop fronts and awnings return around corners.
- h) Building design reflects a human and village scale.
- i) Buildings provide an appropriate environmental response to encourage pedestrian activity, seating and gathering spaces and contributing to safety and security.
- j) Two storey scale forms are provided at key road intersections within the centre.
- k) Entry areas to internalised retail areas are well defined and highly legible.
- l) The impact of deliveries should be minimised through location and separation of those activities.

m) Figure E7.33 provides an indicative structure and layout Image for the Neighbourhood Precinct.

B. Development Controls

- 1) Detailed design and planning of the Neighbourhood Precinct shall be subject to the formulation of a Concept Plan as part of a Staged Development.
- 2) The road reservation for the Neighbourhood Centre Main Street will be designed and constructed as per Figure E7.36.
- 3) Any supermarket facility has an 'open' exterior.

Figure E7.33: Neighbourhood Precinct Structure



A hand-drawn cross-section diagram of a street layout. The diagram is divided into six zones from left to right: SUPERMARKET, THROUGH RETAIL, EXTERNAL MALL, ROAD, WALKABLE VERGE, and PARK. Above the EXTERNAL MALL and ROAD zones, the text "ACTIVE STREET EDGE" is written. The diagram is labeled "A" on the left, "SECTION" in the center, and "B" on the right.

RESIDENTIAL

STUDIO

PASSIVE SURVEILLANCE

FENCING + VEGETATION BUFFER

VEHICULAR ACCESS

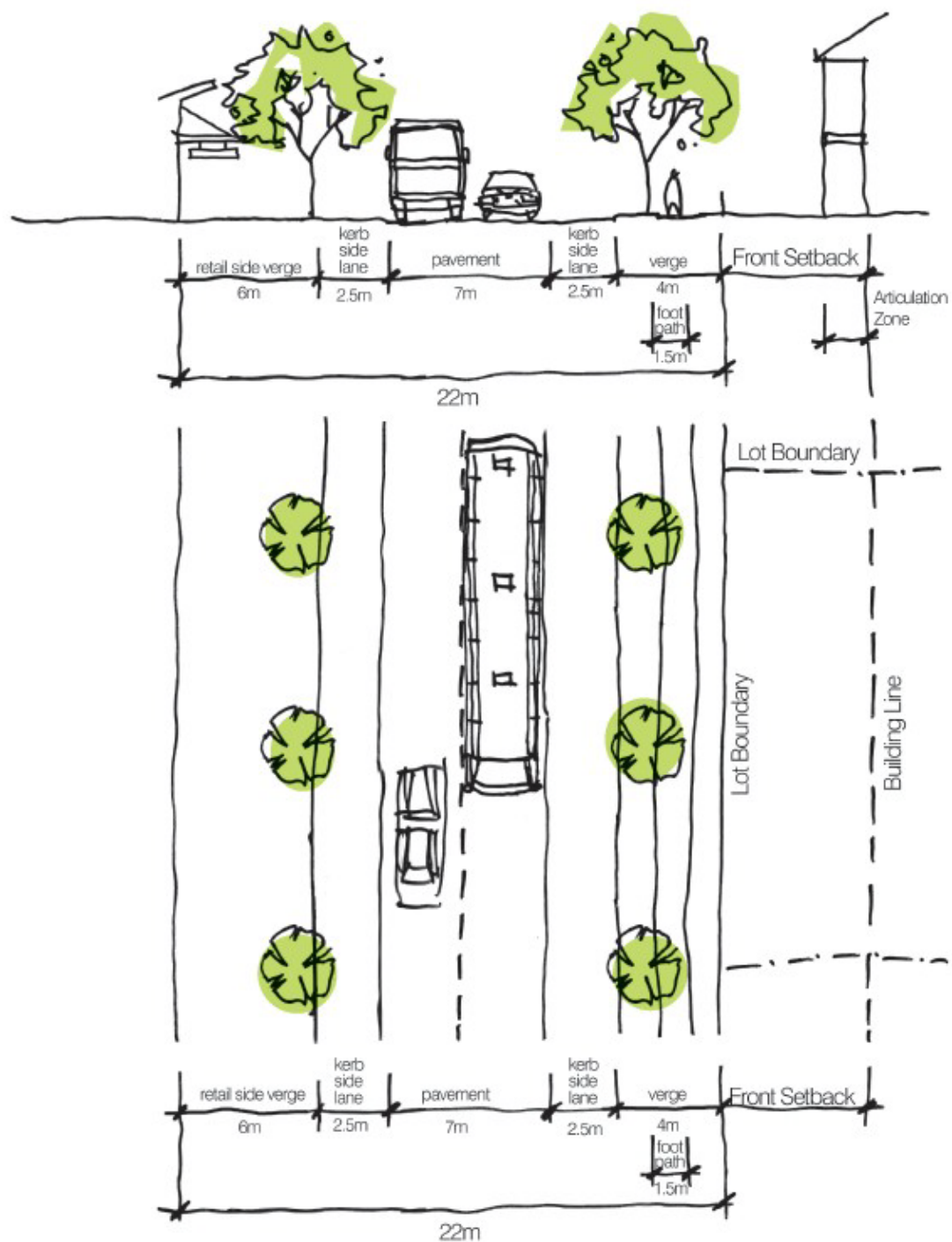
VEGETATION BUFFER

LOADING DOCK ACCESS

SUPERMARKET

C SECTION D

Figure E7.36: Neighbourhood Precinct Road Reserve



7.4.3.5.4 Primary School

A. Performance Measures

- a) The school is located adjacent or closely linked by a pedestrian safe route to public playing fields.
- b) The school is located on a public bus route.
- c) Provides landmark buildings that define key road intersections.
- d) The built form of the school engages and activates the street edge to contribute to the pedestrian character and mutually benefit from passive surveillance.
- e) Suitable space should be provided for the short term pick-up and drop-off of students that avoid the need for continuous circulating traffic.

B. Development Controls

- 1) Detailed design and planning of the School and Neighbourhood Centre shall be subject to the formulation of a Concept Plan as part of a Staged Development.
- 2) A minimum site frontage of 60m must be provided. This includes a minimum length of 40m for a single bus bay. Additional frontage, the equivalent of 12m per bus, may be required if a larger bus set-down area is needed.

7.4.4 Private Domain

7.4.4.1 Subdivision

A. Objectives

- a) To provide block sizes that maximise access to solar orientation.
- b) To provide a subdivision pattern that accommodates a range of dwelling densities and lot sizes.
- c) To provide lot sizes and shape that reflect the broader urban structure.
- d) To promote the most appropriate locations for higher density housing forms.
- e) To ensure development responds to site topography and natural assets.

B. Performance Measures

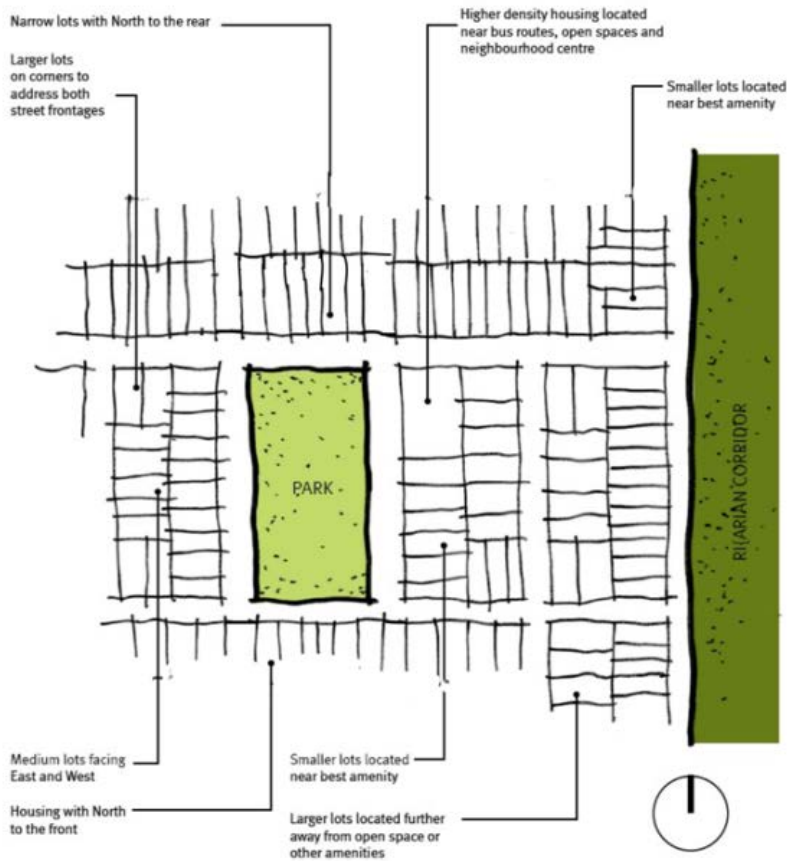
- a) Blocks and lots are generally rectilinear.
- b) Lots are oriented to facilitate siting of dwellings and private open space to take advantage of winter solar access and summer sun deflection.
- c) Lots identified to accommodate higher density housing forms will be focused on or around:
 - i) Open space areas.
 - ii) Neighbourhood centre.
 - iii) Areas of highest accessibility.
 - iv) Areas of high quality amenity.

- d) Larger lot frontages provided on street corners to allow development to address both street frontages.
- e) Lot sizes will respond to site topography by providing larger lots on sloping lands.
- f) Larger lots are provided in the rural transition (R2 Low Density Residential) zone.
- g) Lot sizes and dimensions take into account site topography and reduce the need for earthworks and retaining wall construction.
- h) Lot sizes and dimensions allow for retention of existing trees as part of subsequent site development.
- i) Lots front streets and overlook open spaces to provide passive surveillance of those areas.
- j) Benching of sites should preferably be undertaken at subdivision stage and earthworks plans should indicate positions of necessary retaining structures and associated drainage.

C. Development Controls

- 1) Subdivision including the creation of super lots will provide for the achievement of minimum dwelling targets.
- 2) Single dwelling lots are a minimum of 25m deep.
- 3) Lots in the rural transition (R2 Low Density Residential) zone will have a minimum lot size in accordance with Penrith LEP 2010.
- 4) Vary the depth of north-south oriented lots to provide longer, narrower lots on the south side of the street and shorter, wider lots on the north side, where possible.
- 5) Ensure lots with an east-west axis are 12m or more wide where possible, unless they are intended for use by attached dwellings.
- 6) Retaining walls are to be constructed with appropriate masonry materials.

Figure E7.37: Lot Design Principles



7.4.4.2 Shared Driveways

A. Objectives

- To provide make efficient use of urban land.
- To create high quality streetscapes.
- To minimise conflict between pedestrians and vehicles.

B. Performance Measures

- Shared driveways are formalised through the creation of right of carriageways as part of the subdivision.
- Provide safe and convenient access to rear garages.
- Shared driveways are a low maintenance environment.
- Shared driveways are used solely by residents with garages accessed by the private driveways.

- e) Shared driveways are the smallest configuration possible to serve the required rear garages.
- f) At the street entry, the driveway is narrow and landscaped to have low visual impact at the street entry and be clearly distinguishable as private access only.
- g) A studio is provided at the end of the longest driveway axis and provides windows that overlook the shared driveway.
- h) Adjacent dwellings provide additional passive surveillance opportunities over the driveway.
- i) Pedestrian gates are provided from the driveway to adjoining rear yard areas.
- j) Subdivision provides an appropriate arrangement for the long term maintenance and management for the driveway.

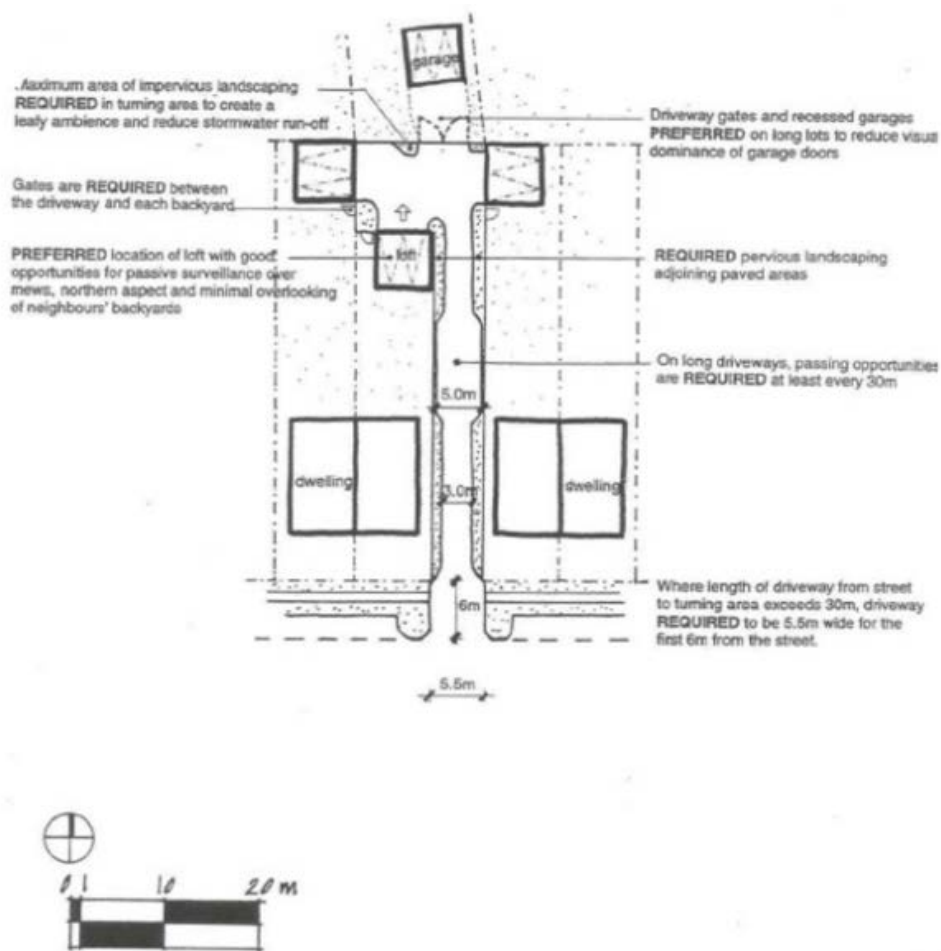
C. Development Controls

- 1) Will serve a maximum of 6 dwellings.
- 2) Are generally configured as one of four general types depending on block geometry and garages to be accessed as per Figure E7.38.
- 3) Are generally 3m wide and allow for exiting in a forward direction.
- 4) If connected to a street that will carry more than 300 vehicles per day, the shared driveway shall have a width of 5.5m for a distance of 6m from the kerb line.
- 5) All private driveways shall achieve the design standards as identified per Figure E7.39.
- 6) A minimum of one garage fronting the Shared Driveway provides a studio above the garage.

Figure E7.38: Shared Driveways Access Options



Figure E7.39: Shared Driveway - Design Principles



7.4.4.3 Site Planning

7.4.4.3.1 Principal Private Open Space

A. Objectives

- To provide a high level of residential amenity with opportunities for outdoor living within the property.
- To enhance the spatial quality, outlook, and usability of private open space.
- To optimise solar access to the living areas and private open spaces of the dwelling.

B. Performance Measures

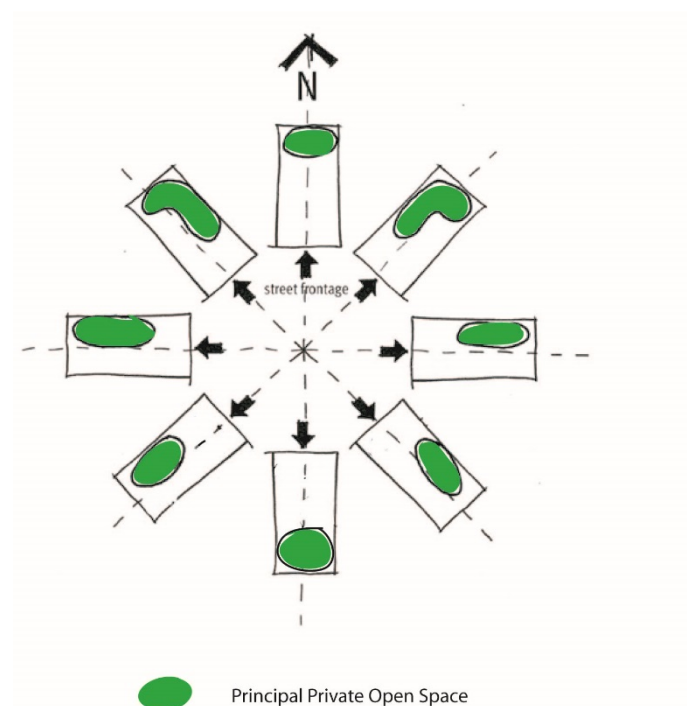
- Principal private open spaces are the primary organising element of site planning and dwelling design.
- Private open spaces should be located at ground level in rear yard areas that maximise opportunities to obtain solar access for all dwelling types other than apartments.
- Development with a northern orientation provides secondary private open spaces area at the street frontages through the use of courtyards and balconies.

- d) The principal private open spaces should have a direct interface with primary internal living area of its dwelling.
- e) Development should achieve the preferred location for open space location as demonstrated at Figure E7.40.

C. Development Control

- 1) Dwellings will achieve the minimum standards for Principal Private Open Space as identified at Section 5 of this section.

Figure E7.40: Private Open Space Siting



7.4.4.3.2 Garages and Parking

A. Objectives

- a) To provide sufficient and convenient parking for residents and visitors.
- b) To reduce the visual impact of garages, carports, and parking areas on the streetscape and improve dwelling presentation.
- c) To promote safe public domain areas.

B. Performance Measures

- a) Garages are sited as per the preferred siting diagram at Figure E7.41.
- b) The width of the lot will determine the maximum size of garage provided in either street frontage or rear lane locations as demonstrated at Figure E7.42.
- c) Front garages are to be setback behind the front most element of the house and integrated as part of the dwelling façade.

- d) Garages are constructed in materials and colours, which blend the garage doors into the main building.
- e) Garages provide flexible accommodation for vehicles, storage, and covered areas for outdoor recreation.
- f) Stacked parking is an acceptable outcome provided it is accommodated entirely within the property.
- g) Studios are provided over garages to rear lanes to provide surveillance, work from home or residential accommodation opportunities.
- h) Vehicle crossings between the street and front boundary shall be constructed in plain concrete only.

C. Development Controls

- 1) Double garages are the maximum garage size allowed for single dwelling houses.
- 2) Where a dwelling provides vehicular access to the street the garage will be setback a minimum of 5.5m from the front boundary.
- 3) Garages are to be provided per AS 2890.1 Off Street Parking, including:
 - a) Minimum width of 3.2m for single garages.
 - b) Minimum width of 5.8m for double garages.

Figure E7.41: Garage Siting

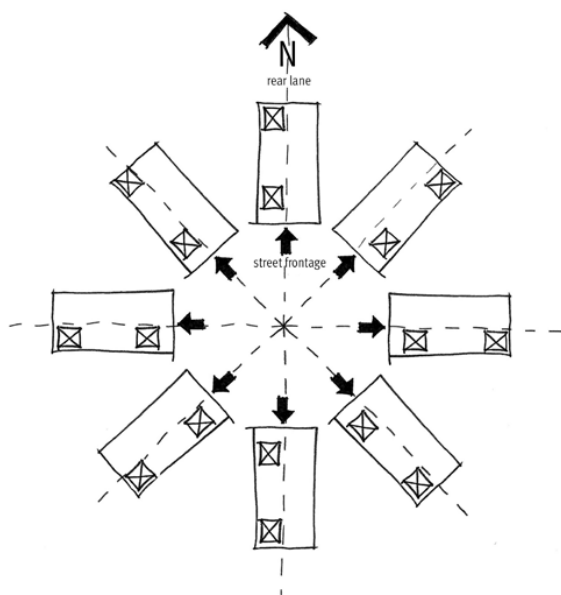
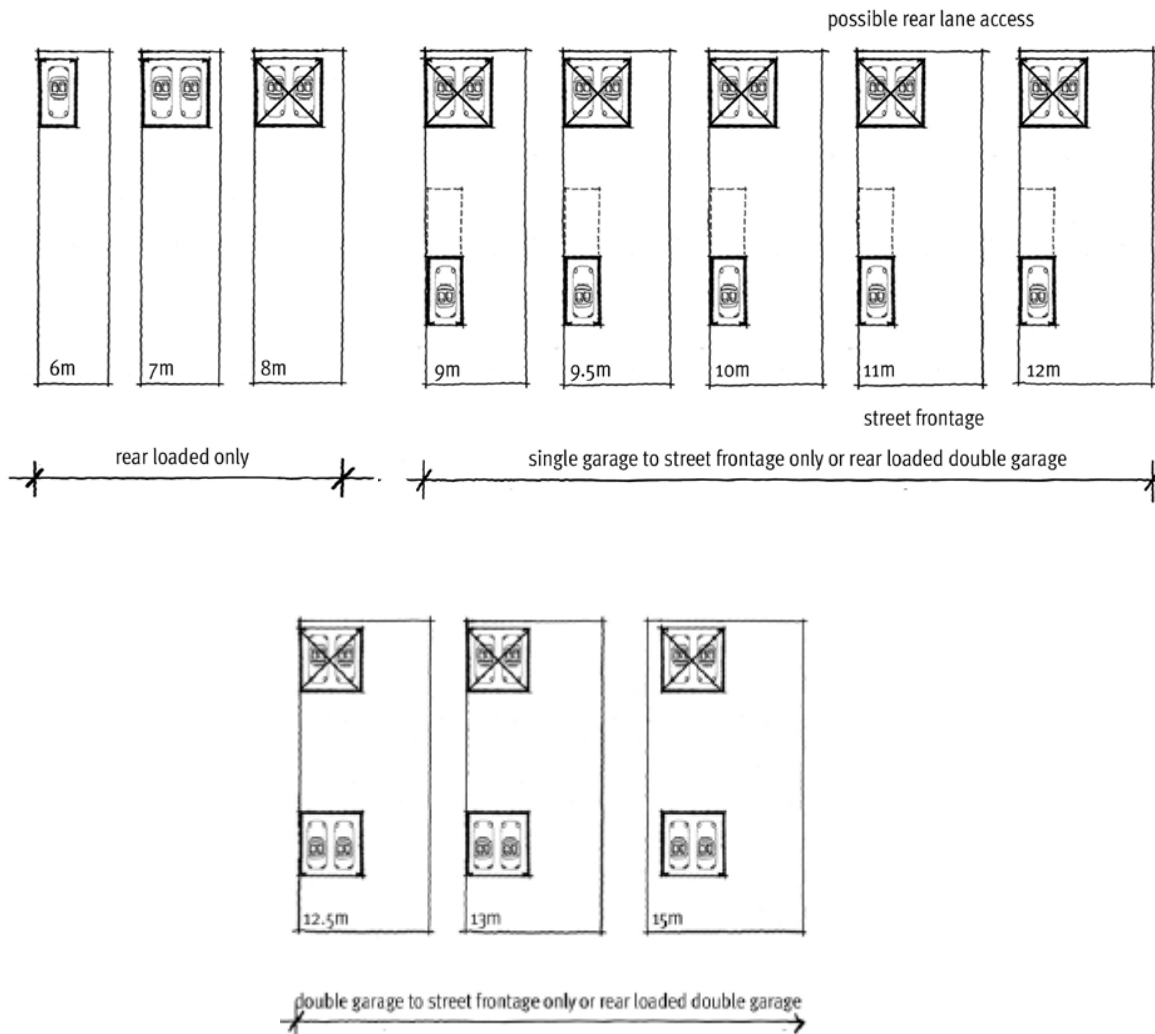


Figure E7.42: Maximum Garage Size



7.4.4.3.3

Building Footprints

A. Objectives

- To provide a variety of streetscapes that reflect the character of different precincts.
- To create an attractive and cohesive streetscape within local precincts.
- To maximise provision of solar access to dwellings.
- To minimise the impacts of development on neighbouring properties in regard to view, privacy, and overshadowing.
- To encourage the efficient and sustainable use of land.
- To allow for landscaped rear yard areas.
- To promote public safety of public domain areas.
- To manage risk from bushfire events.

B. Performance Measures

Front Setbacks

- a) Front setbacks are site responsive and will be determined for individual lots as part of the Subdivision Approval process given consideration to the following matters:
 - i) Future dwelling type.
 - ii) Orientation of lots.
 - iii) Provision of front yard open space and associated fencing.
 - iv) Availability of direct vehicle access to the street.
 - v) Relevant role of street in local road hierarchy.
 - vi) Proximity to open space areas.
 - vii) Location within Neighbourhood Centre.
 - viii) Requirements to provide Asset Protection Zone.

Rear Setbacks

- a) Landscaping provision to allow tall trees in the rear yard area to provide a vegetated backdrop to the development.

C. Development Controls

1) Front Setbacks

- a) Front setbacks are identified in Section 7.4.5 – Typical Development Forms, for each dwelling type.

2) Side Setbacks

- a) The width of the lot will determine the ability of the site to provide zero lot lines as demonstrated at Figure E7.43.
- b) Where only one side of a lot can provide a zero lot line, then Figure E7.44 will be used to determine which of those boundaries accommodates that zero lot line.
- c) A maintenance easement of at least 900mm is to be provided on the boundary adjacent to the zero lot line.
- d) All other side setbacks will be a minimum of 900mm.
- e) Fascias, gutters, downpipes, eaves (up to 450mm wide) and chimneys flues may encroach into the side setback.
- f) No windows are provided in zero lot line walls.

Figure E7.43: Zero Lot Lines

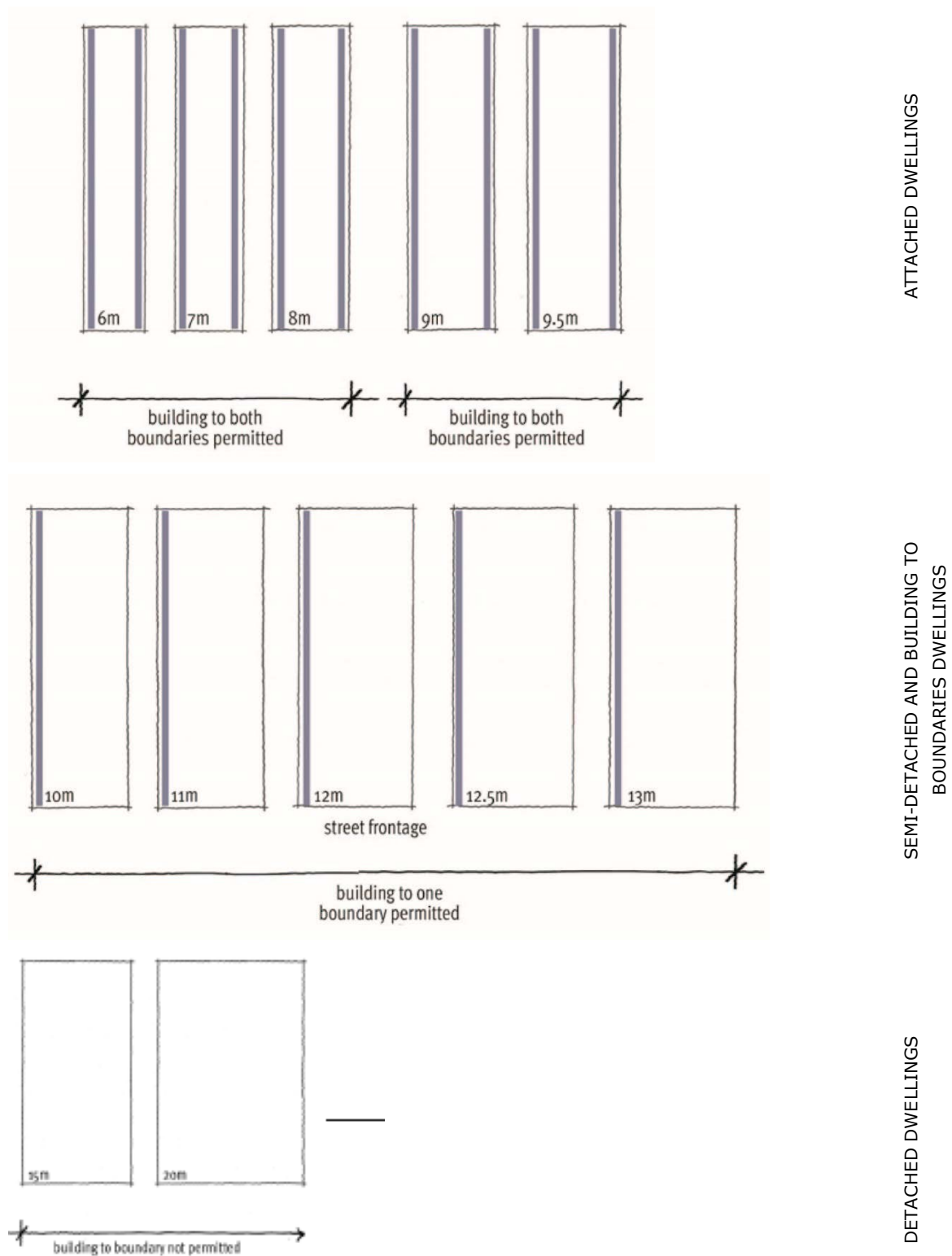
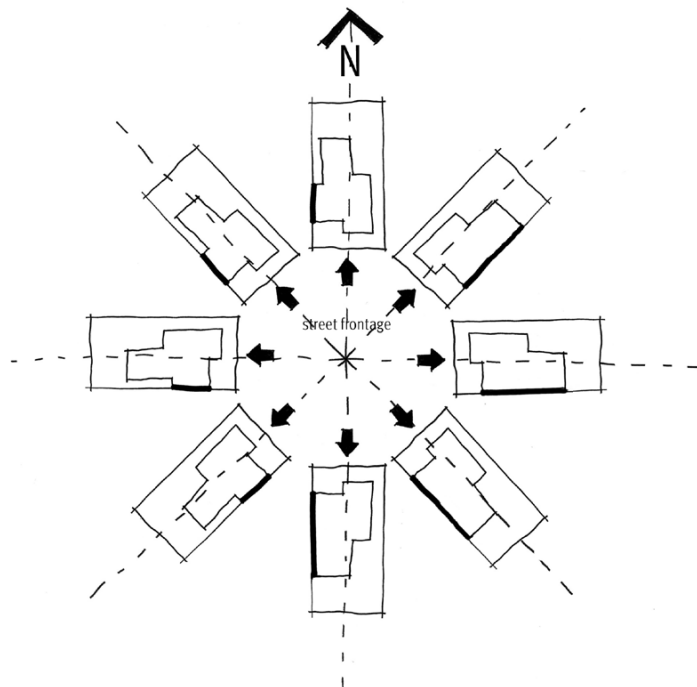


Figure E7.44: Zero Lot Line Location



7.4.4.4 Solar Planning

A. Objectives

- a) To achieve a high standard of residential amenity; and
- b) To protect reasonable amenity expectations of neighbouring sites.

B. Development Controls

- 1) Areas of Principal Private Open Space should achieve at least 3 hours of sunlight to 50% of the required private open space area between 9am and 3pm on 21 June.
- 2) Buildings should be designed to ensure that 40% of the Principal Private Open Space areas of adjoining dwelling sites receive a minimum of 3 hours of sunlight between 9.00am and 3.00pm on 21 June each year.

7.4.4.5 Dwelling Design

A. Objectives

- a) To provide simple and articulated building forms.
- b) To provide a high quality and cohesive streetscape.
- c) To promote an architectural style that is contemporary and innovative.
- d) To promote a safe public domain area.

- e) To promote energy efficient and sustainable development.
- f) To reduce the dominance of garages on the streetscape.
- g) To identify appropriate design responses for corner lots.

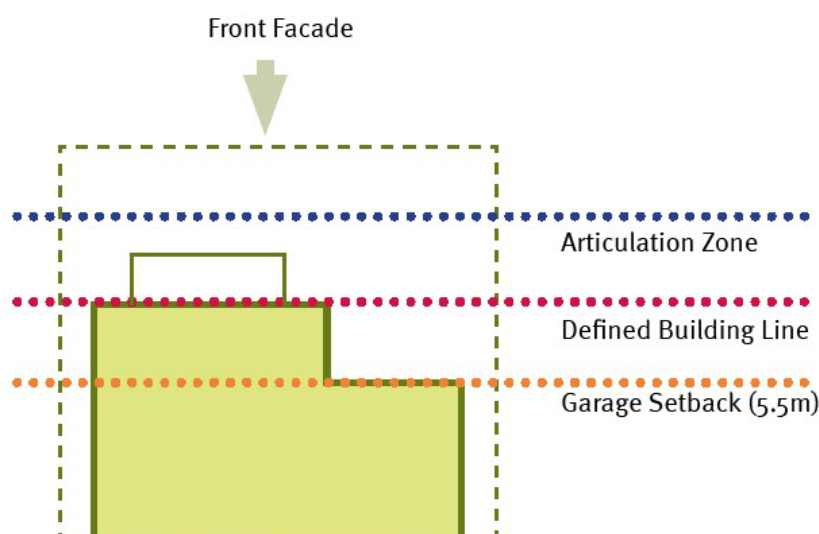
B. Performance Measures

- a) All development addresses the street and is provided with a clear, legible and well lit pedestrian entry.
- b) The street elevation is well articulated by the use of awnings, verandahs, balconies and feature elements on the front facades of dwellings.
- c) Development will achieve the principle of three layers of front setbacks as illustrated at Figure E7.45.
- d) The finished ground level of development is raised above the street level to improve the outlook and enhance visual privacy from within the dwelling and front verandahs.
- e) Garages will be recessed or capped by overhanging elements that provide shading over the garage opening.
- f) Dwellings orientate living spaces to the north, sleeping areas to the east or south and utility areas to the west or south.
- g) Dwellings provide shading of north, east and west facing windows with pergolas and awnings.
- h) Buildings are to be designed to allow cross ventilation by positioning windows and doors opposite each other within rooms.
- i) Material and external finishes of buildings in bushfire hazard areas comprise appropriate construction standards for those areas.
- j) Built forms on corners provide important place making and way finding elements in the streetscape.
- k) Corner sites provide a frontage to both streets and articulate their corner location with an architectural feature such as a wraparound verandah, bay window, corner entry or roof feature.
- l) Garages on corner lots are accessed from the secondary street.
- m) Dwellings provide adaptable house floor plans for the inclusion of a home office/business activity area.

C. Development Controls

- 1) Verandahs, awnings, etc. may project forward of the front building setback line by a maximum of 1.5m.
- 2) Building elements projecting forward of the front building setback are limited to a maximum of 60% of the dwelling width.
- 3) Eaves are required over all walls except those on zero lot lines.
- 4) External building materials/finishes are to be varied across front elevations of buildings.

Figure E7.45: Setbacks and Articulation



7.4.4.6 Visual and Acoustic Privacy

A. Objectives

- a) Ensure buildings are designed to achieve the highest possible levels of visual and acoustic privacy.
- b) Protect visual privacy by minimising direct overlooking of habitable rooms and private open space.
- c) Contain noise within dwellings and minimise the intrusion of noise from outdoor areas.

B. Performance Measures

- a) Windows to upper storeys to be located on front or rear facades where possible.
- b) Offset second storey windows of living areas that face directly to windows, balconies or private open space of adjoining properties.
- c) First floor balconies or living room windows not permitted to directly overlook private open space of adjoining dwellings unless suitable screening is provided.
- d) The design of attached dwellings must minimise the opportunity for sound transmission through the building structure, with particular attention given to protection bedrooms and living areas.
- e) Living areas and service equipment are located away from bedrooms of neighbouring dwellings.
- f) In attached dwellings, bedrooms of one dwelling are not to share walls with living spaces or garages of adjoining dwellings, unless it is demonstrated that the shared walls and floors meet the noise transmission and insulation requirements of the Building Code of Australia.
- g) Noise sensitive areas are to be located away from the noise emitting sources.

C. Development Controls

- 1) Habitable room windows with a direct sight line to habitable room windows in adjacent dwellings are to be avoided, however within 9m must be obscured by fencing, screens, or sufficient landscaping;
- 2) A screening device is to have a maximum of 25% permeability to be considered effective.

7.4.4.7 Defining Boundaries

A. Objectives

- a) Creates a clear distinction between public and private domain areas.
- b) To ensure front fences contribute to the streetscape.
- c) Maintain safety in the public domain.
- d) Rear and side fencing provide privacy to open space areas.

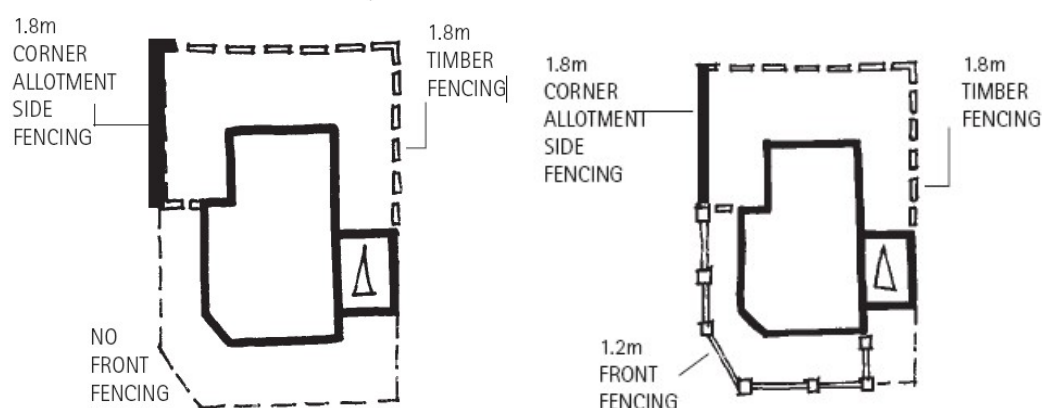
B. Performance Measures

- a) Delineation of front property boundaries is achieved through use of landscaping, low fences or changes of site level.
- b) Front fences must be transparent.
- c) Side property fences in front of the building line shall be treated as the front fence.
- d) Side property fences terminated at the front building line and returned to finish against the building.
- e) All retaining walls are to be of a masonry construction and where located on a boundary, traditional fencing material to be positioned on top of the retaining wall.

C. Development Controls

- 1) Fences to the street frontage:
 - a) are to be a maximum of 900mm in height.
 - b) may be a maximum of 1.2m in height where they define the primary open space of a dwelling.
- 2) Side property fences are to be a maximum of 1.8m high.
- 3) Fences to corner lots that accommodate single dwelling houses are to be a maximum 900mm high on both the primary street frontage and secondary street frontage to a point 10m from the dwelling frontage where it may then increase to 1,800mm in height.
- 4) Fences to corner lots that accommodate multi-unit housing forms are to be a maximum of 900 mm on the primary street frontage and 900 mm in height along the secondary street frontage in areas in front of the built form or 1.2m if they define the primary open space areas.
- 5) Transparent fencing shall have a minimum opening ratio of 50%.
- 6) Where solid fences are required to satisfy acoustic abatement, these fences shall not exceed 8m in length without some articulation or detailing to and must be softened on the street side with a landscaping strip of 700mm minimum.

Figure E7.46: Examples of Corner Lot Principles



7.4.4.8 Site Facilities

A. Objectives

- a) To ensure that adequate provision is made for site facilities.
- b) To ensure that site facilities are functional and accessible to all residents and are easy to maintain.
- c) To ensure that site facilities are thoughtfully integrated into development and are unobtrusive.

B. Performance Measures

- a) Development demonstrates that the design takes into account garbage bin storage and collection without reducing the amenity of the dwelling or neighbouring lots.
- b) Garbage bin storage and mail box structures are to be integrated with the overall design of buildings and/or landscaping and are not visible from the street or rear lane way.
- c) External clothes drying areas are to be provided for all residential development

7.4.5 Typical Development Forms

The development controls outlined in this Section are typical, generic arrangements for Glenmore Park Stage 2. Developers can establish more detailed controls for each precinct as part of approved Concept Plans, as long as those controls reflect the objectives and performance measures identified.

7.4.5.1 Apartments

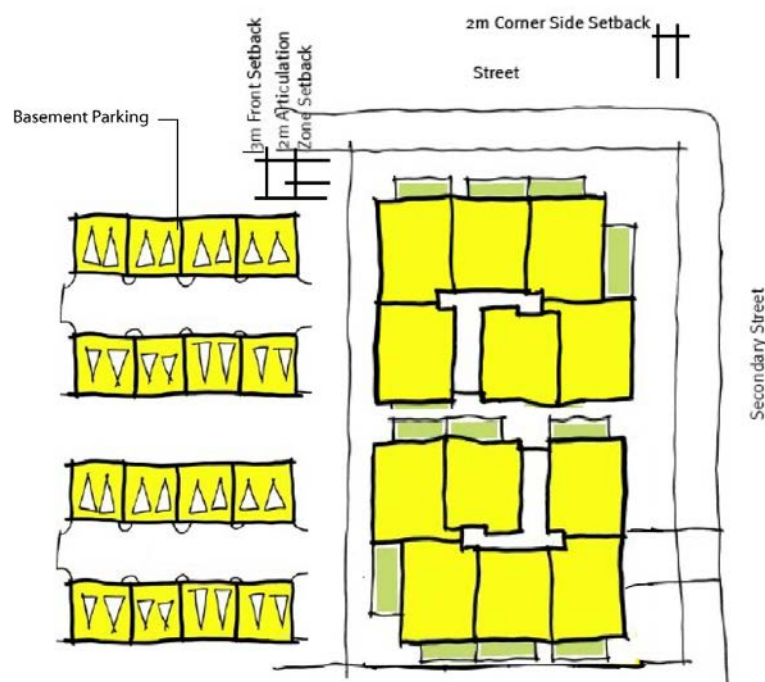
A. Performance Measures

- a) Development is designed to:
 - i) Provide a higher degree of urban orientated development outcomes.
 - ii) Be compatible in scale with the mass and character of adjacent building types.
 - iii) Provide parking on site and underground where possible.

B. Development Controls

Allotment Requirements	
Allotment Requirements	650m ²
Minimum Lot Frontage	25m
Open Space	
Ground level Principal Private Open Space	
Minimum Area	20m ²
Minimum Dimension	2.5m
Upper Level Principal Private Open Space	
Minimum Area	10m ²
Minimum Dimension	2m
Communal Open Space	
Development that provides more than 10 dwellings will provide a communal open space area that is at least 10% of the total site area.	
Minimum Dwelling Setbacks	
Front	3m
Secondary Setback	2m
Side	<ul style="list-style-type: none"> 1.5m for walls without openings to habitable rooms. 3m for walls with an opening to a habitable room.
Rear	<ul style="list-style-type: none"> 5m where development directly adjoins other residential development. 0m where development adjoins a rear lane or other public domain areas.
Garage to rear lane	0m
Other Requirements	
Location	<ul style="list-style-type: none"> In and adjacent to the Neighbourhood Centre Adjoining the major active open space facility
Height	Development shall: <ul style="list-style-type: none"> Have a maximum height of 4 storeys. Ensure building facades are articulated (balconies, blade walls, stepped facades, etc.) to provide visual interest and reduce overall building bulk.
Built Forms	Development must utilise multiple entries and circulation cores in buildings where a length greater than 15m.
Adaptable Dwellings	10% of dwellings shall be adaptable as per AS1428.1 – 1998 – Design for Access and Mobility.
Vehicle Manoeuvring	Provide turning movements as defined by AS2890.1 – 2004.

Figure E7.47: Apartment Design Principles



7.4.5.2 Terrace Dwellings and Live - Works

A. Performance Measures

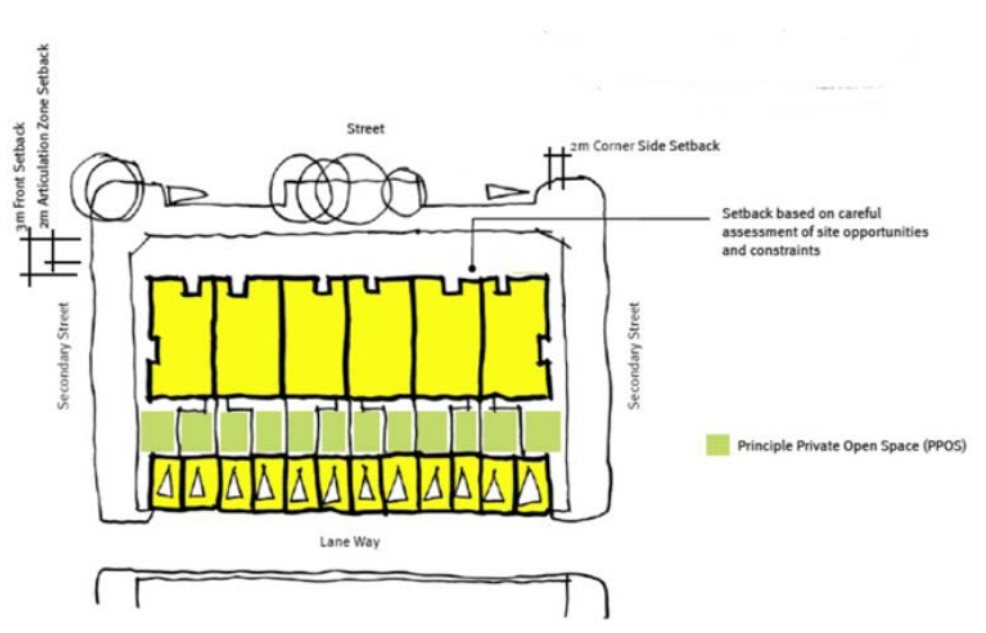
- a) Development is designed to:
- i) Provide for parking with a rear loaded garage accessed from a rear lane or shared driveway.
 - ii) Rear of lot is generally orientated to the north.
 - iii) Integrated studio units located above a ground level garage or at ground level, located at the rear of the site in some locations.
 - iv) Dwellings are designed to incorporate the option of 'live-work' activities (homed-based businesses), particularly in locations adjacent to the Neighbourhood Centre.

B. Development Controls

Allotment Requirements	
Lot Size Range	195 – 230m ²
Lot Frontage	6m – 9.5m
Principal Private Open Space	
Minimum Area	20m ²
Minimum Dimension	4m

Minimum Dwelling Setbacks	
Front	3m
Secondary Frontage	2m
Side	0m
Rear:	
Ground Floor	4m
Upper Floor	6m
Garage to rear lane	0m
Other Requirements	
Location	<ul style="list-style-type: none"> • In and adjacent to the Neighbourhood Centre; • Adjoining the major active open space facility, riparian zones and neighbourhood parks.
Height	<ul style="list-style-type: none"> • Dwellings shall have a maximum height of 3 storeys.

Figure E7.48: Terrace Design Principles



7.4.5.3 Semi Detached Dwellings

A. Performance Measures

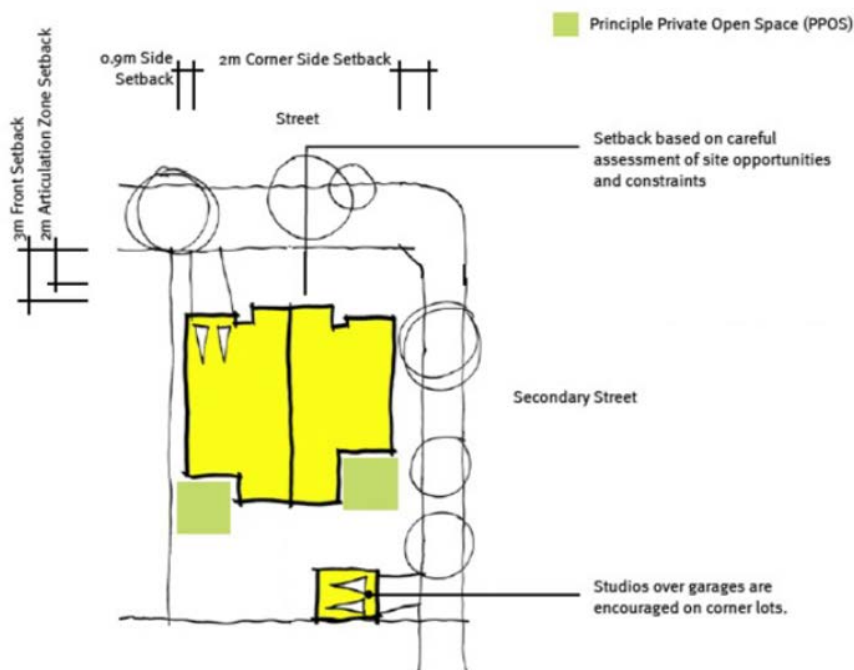
- Have the appearance of a larger home, but are comprised of 2 dwellings (3 dwellings including studio opportunity) on separate Title.
- When located at a corner, have distinct entries for each unit usually located on different street frontages.
- When located at a corner, provide vehicle access of different street frontages.
- Dwellings have an adaptable design which can incorporate options for home-based business activities.

B. Development Controls

Allotment Requirements	
Lot Size Range	230 – 450m ²
Lot Frontage	12 – 15m
Principal Private Open Space	
Minimum Area	30m ²
Minimum Dimension	4m
Minimum Dwelling Setbacks	
Front	3m

Secondary Frontage	2m
Side	<ul style="list-style-type: none"> • 0m on defined boundary as Figure E7.45: Setbacks and Articulation • 0.9m on other boundary
Rear:	
Ground Floor	4m
Upper Floor	6m
Garage to rear lane	0m
Other Requirements	
Height	<ul style="list-style-type: none"> • Dwellings shall have a maximum height of 2 storeys

Figure E7.49: Semi Detached Dwellings Design Principles



7.4.5.4 Studios

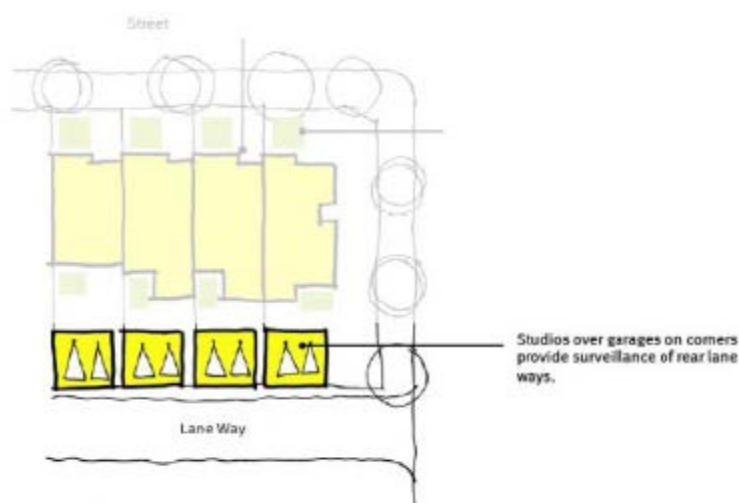
A. Performance Measures

Development is designed to:

- Be located above garages that are accessed from rear lanes or shared driveways.
- Provide their own sleeping, living, kitchen and bathroom areas.
- Provide causal surveillance over rear lanes or shared driveways.

- d) Windows and private open spaces do not overlook the private space of any adjacent dwellings.
- e) Do not overshadow the private open space of living space of any adjacent dwelling.
- f) Balconies or verandahs do not overhang vehicle access areas.

Figure E7.50: Studio Design Principles

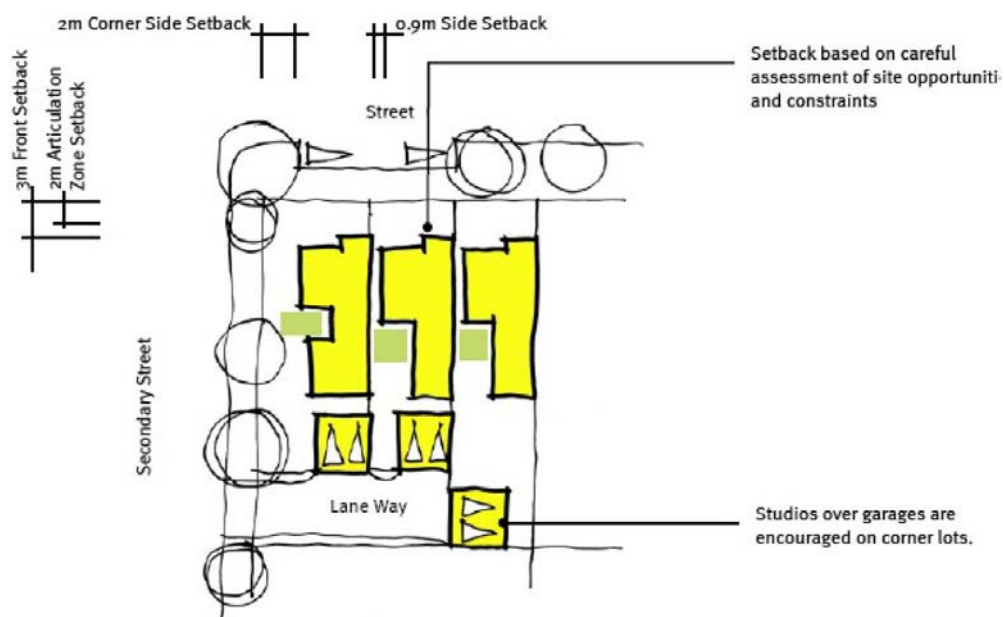


7.4.5.5 Built to Boundary Dwellings

A. Development Controls

Allotment Requirements	
Lot Size Range	230 – 450m ²
Lot Frontage	9.5 – 15m
Principal Private Open Space	
Minimum Area	40m ²
Minimum Dimension	4m
Minimum Dwelling Setbacks	
Front	4.5m
Secondary frontage	2m
Side:	<ul style="list-style-type: none"> • 0m on defined boundary. • 0.9m from other boundary.
Rear:	
Ground Floor	4m
Upper Floor	6m
Garage to Rear Lane:	0m
Other Requirements:	
Height	<ul style="list-style-type: none"> • Dwellings shall have a maximum height of 2 storeys.

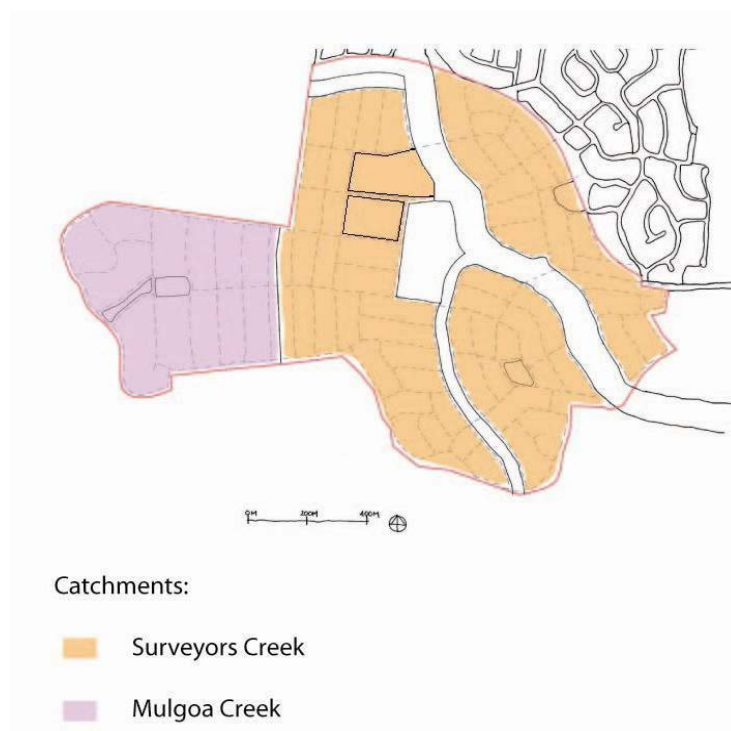
Figure E7.51: Built to Boundary Dwelling Design Principles



7.4.5.6 Detached Dwellings

Different development controls will apply to development of detached housing forms within the two catchments in the release area. These catchments are identified at Figure E7.52 below:

Figure E7.52: Catchments



7.4.5.6.1 Surveyors Creek Catchment

Allotment Requirements	
Lot Size Range	360m ² – 600m ²
Lot Frontage	12m – 15m
Principal Private Open Space	
Minimum Area	50m ²
Minimum Dimension	4m
Minimum Dwelling Setbacks	
Front	4.5m
Secondary Frontage	2m
Side	0.9m
Rear:	
Ground Floor	4m
Upper Floor	6m
Garage to rear lane	0m

Other Requirements:	
Height	<ul style="list-style-type: none"> Dwellings shall generally have a maximum height of 2 storeys. 3 storey development will only be permitted on land: <ul style="list-style-type: none"> Located at key intersections within a precinct, as identified part of an approved Concept Plan, and where they provide built form consistent with that shown at Figure E7.54. With slopes with a grade greater than (1:8) when they achieve built form consistent with that shown at Figure E7.55.

Figure E7.53: Detached Dwelling Principles

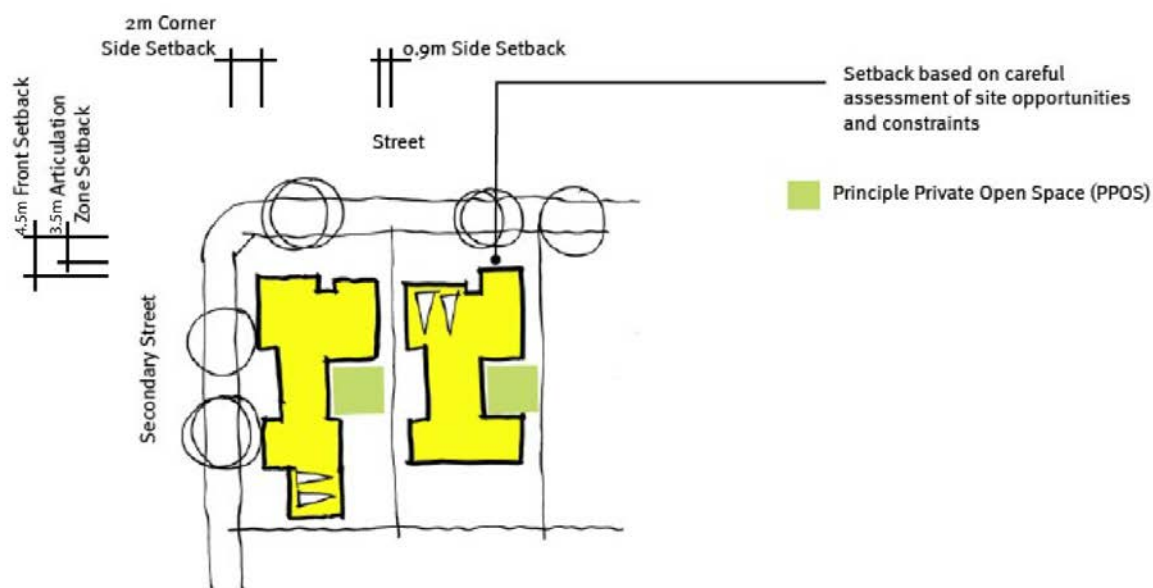


Figure E7.54: Three Storey Development at Key Intersections

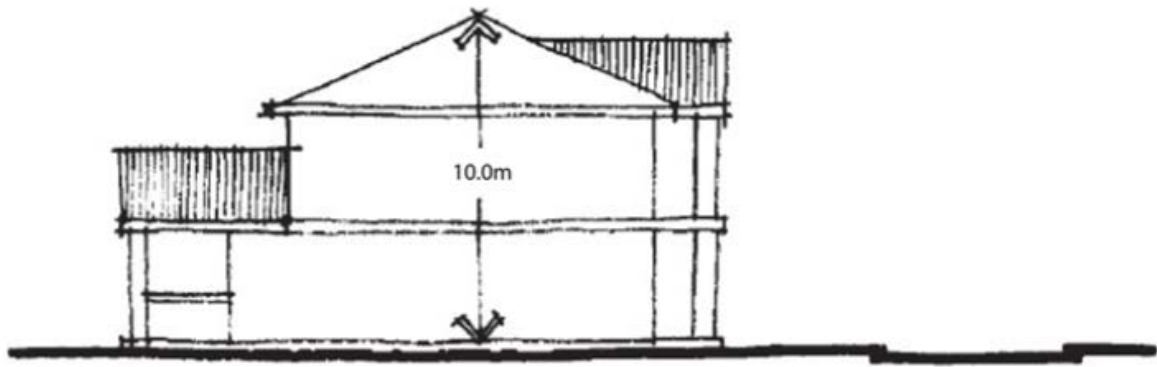
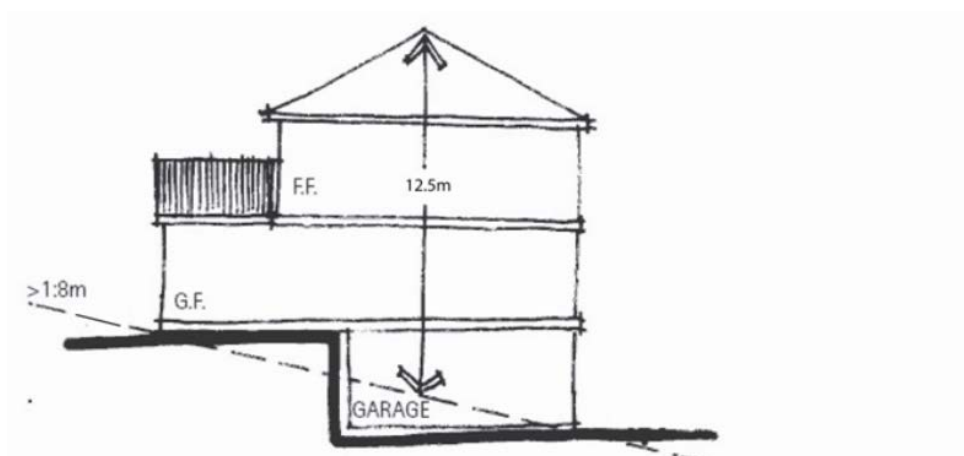


Figure E7.55: Three Storey Development on Lands With Grade >8:1



7.4.5.6.2 Mulgoa Creek Catchment

A. Performance Measures

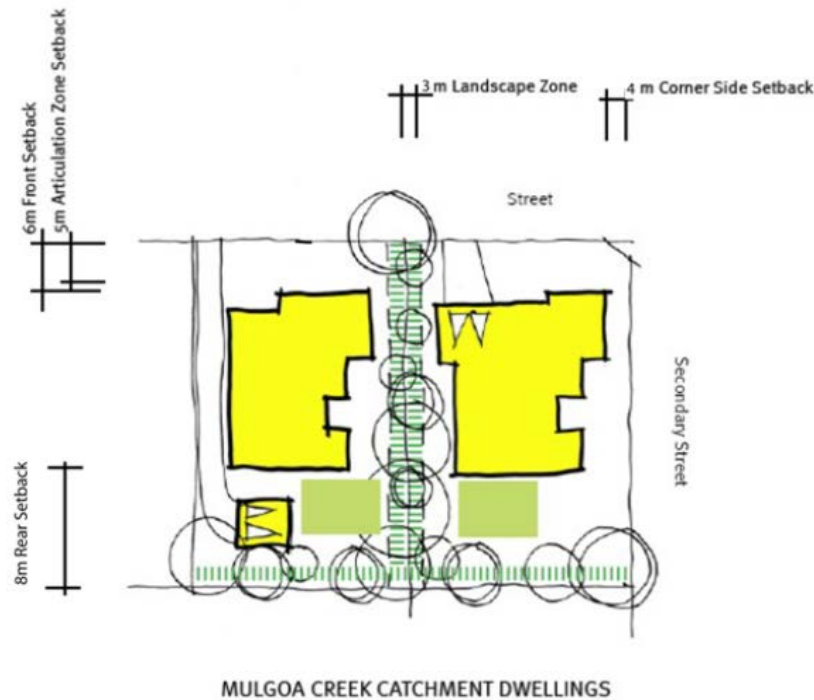
- Allow for landscaped side setbacks to provide visual separation between dwellings and a more spacious streetscape environment.
- Reflect the semi - rural character in road detailing, landscaping and fencing details.
- Lot sizes are to transition from the smaller lots in the Surveyors Creek catchment to the largest lots adjacent the Mulgoa Nature Reserve.

B. Development Controls

Allotment Requirements	
Lot size range	450m ² – 1,000m ²
Lot Frontage	20m
Principal Private Open Space	

Minimum Area	100m ²		
Minimum Dimension	5m		
Minimum Dwelling Setbacks			
	Lots <600m ²	600m ² - 1,000m ²	Lots >1,000m ²
Front	4.5m	6m	8m
Secondary Frontage	2m	4m	4m
Side	0.9m	0.9m	3m
Rear			
Ground Floor	4m	4m	8m
First Floor	6m	6m	
Other Requirements			
Height	Dwellings shall have a maximum height of 2 storeys		

Figure E7.56: Mulgoa Creek Catchment Dwelling Design Principles



7.4.5.7 Non-Residential Development

A. Performance Measures

- a) Non-residential development should be planned and designed according to principles of traditional suburban design, and to preserve the amenity of residential neighbourhoods.
- b) Principles of urban form and urban design that apply to permissible multi-unit housing are applied to non-residential development.
- c) Particular attention is paid to:
 - i) The development site including front setbacks, rear setbacks, dual frontage situations.
 - ii) Urban form including:
 - Traditional building design features.
 - Traditional garden frontages.
 - Orientation of building entrances.
 - Continuously occupied rooms facing the street.
 - Detailed consideration of significant townscapes or landscapes.
 - Signs.
 - iii) Driveways and parking including:
 - Provision of on-site parking appropriate to the proposed use, and in accordance with Penrith Council's parking codes, the RTA or Australian Standards.
 - Minimise site coverage by paved areas.

- Conceal garages from views available from public parks and streets.
 - Locate driveways and parking areas away from any neighbouring residential development.
- iv) Building envelope and side setbacks:
- To achieve a single storey appearance.
 - To provide for effective landscaped separation from adjacent developments.
- v) Minimise overshadowing of adjacent properties and minimise requirements for mechanical heating and cooling of interiors.
- vi) Protect the privacy of adjacent properties.
- vii) Sufficient areas are provided for storage and building services to meet requirements generated by the proposed development and located to protect the amenity of adjacent developments.

Table of Contents

E8 KINGSWOOD	3
PART A – DESIGN AND SITING OF NON-RESIDENTIAL DEVELOPMENT ON LAND FRONTING MORLEY AVENUE AND THE GREAT WESTERN HIGHWAY, KINGSWOOD	3
8.1 PRELIMINARY	3
8.1.1 LAND TO WHICH THIS SECTION APPLIES	3
8.1.2 AIMS AND OBJECTIVES	4
8.2 DEVELOPMENT CONTROLS	4
8.2.1 BUILDING SETBACKS	4
8.2.2 SIGNAGE	4
8.2.3 CAR PARKING	4
8.2.4 VEHICULAR ACCESS	5
8.2.5 LOADING AREAS	5
8.2.6 STORAGE AREA	5
8.2.7 BUILDING DESIGN AND LAYOUT	5
8.2.8 WESTERN RAIL LINE	6
8.2.9 LANDSCAPING ALONG THE GREAT WESTERN HIGHWAY	6
PART B – THE KNOLL	7
8.3 PRELIMINARY	7
8.3.1. LAND TO WHICH THIS PART APPLIES	7
8.3.1.1 RELATIONSHIP TO OTHER PLANS AND DOCUMENTS	7
8.3.1.2 SUPPORTING STUDIES	8
8.3.2 STRUCTURE PLAN	8
8.3.2.1 VISION FOR THE KNOLL	8
8.3.3 THE PUBLIC DOMAIN	9
8.3.3.1 STREET NETWORK	9
8.3.3.2 PEDESTRIAN AND CYCLE NETWORK	12
8.3.3.3 OPEN SPACE NETWORK	12
8.3.4 RESIDENTIAL DEVELOPMENT	14
8.3.4.1 SUBDIVISION DESIGN	14
8.3.4.2 STREETScape, FEATURE ELEMENTS AND ROOF DESIGN	14
8.3.4.3 DWELLING HEIGHT, MASSING AND SITING	15
8.3.4.4 BUILDING SETBACKS	16
8.3.4.5 DEVELOPMENT ON SLOPING LAND	18
8.3.4.6 STUDIO OR SECONDARY DWELLINGS	18
8.3.4.7 PRIVATE OPEN SPACE	18

8.3.4.8 SITE COVERAGE AND LANDSCAPED AREA	19
8.3.4.9 FENCING	19
8.3.4.10 GARAGES AND ACCESS	20
8.3.5 ENVIRONMENTAL AND RESIDENTIAL AMENITY	21
8.3.5.1 VISUAL AND ACOUSTIC PRIVACY	21
8.3.5.2 SAFETY AND SURVEILLANCE	22
8.3.5.3 SUSTAINABLE BUILDING DESIGN	22

E8 Kingswood

Part A – Design and Siting of Non-Residential Development on Land Fronting Morley Avenue and the Great Western Highway, Kingswood

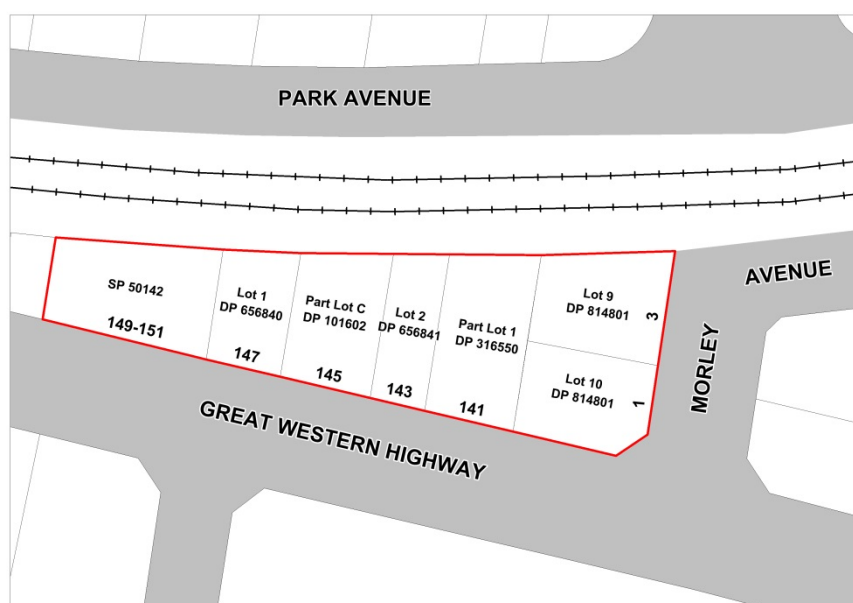
8.1 Preliminary

8.1.1 Land to which this section applies

This section applies to following land within Kingswood, as shown in Figure E8.1:

- Lots 9 and 10 DP 814801, 1 – 3 Morley Avenue, Kingswood,
- Part Lot C, DP 101602, 145 Great Western Highway, Kingswood,
- Lot 1, DP 656840, 147 Great Western Highway, Kingswood,
- Part Lot 1, DP 316550, 141 Great Western Highway, Kingswood,
- Lot 2, DP 656841, 143 Great Western Highway, Kingswood,
- SP 50142, 149 – 151 Great Western Highway, Kingswood.

Figure E8.1: Land to which this section applies



8.1.2 Aims and Objectives

- a) To encourage low traffic generating developments with sufficient onsite parking which satisfies Council's Car parking Code and adequate on site loading / off loading facilities;
- b) To encourage a proper design and landscape address to both the Great Western Highway and Western rail line consistent with the high visual exposure of the land;
- c) To ensure that developments will not detrimentally affect the existing environments and are compatible with adjoining land uses, particularly whilst any residential properties remain;
- d) To encourage amalgamation of allotments to allow orderly redevelopment to occur; and
- e) To ensure that development in layout, landscaping and signage is in keeping with the residential character of the land and in turn discourage the visual appearance of commercial ribbon development.

8.2 Development Controls

In considering an application for the development of land subject to this Section, Council shall take into consideration the following matters:

8.2.1 Building Setbacks

- 1) The following front building setbacks apply to development along the Great Western Highway:
 - a) 7m: 1 – 3 Morley Avenue and 141 – 147 Great Western Highway, Kingswood.
 - b) 5m: SP 50142, 149 – 151 Great Western Highway, Kingswood.
- 2) All building setbacks are to be appropriately landscaped.
- 3) On-site car parking will be considered within the front setback where it can be demonstrated that it will be suitably screened by landscaping.

8.2.2 Signage

- 1) All signage is to comply with the requirements of the Advertising and Signage Section of this DCP.
- 2) Signs identifying the location and activities of business will be permitted only along the Great Western Highway frontage.
- 3) No signage is to be erected along the frontage to the railway.

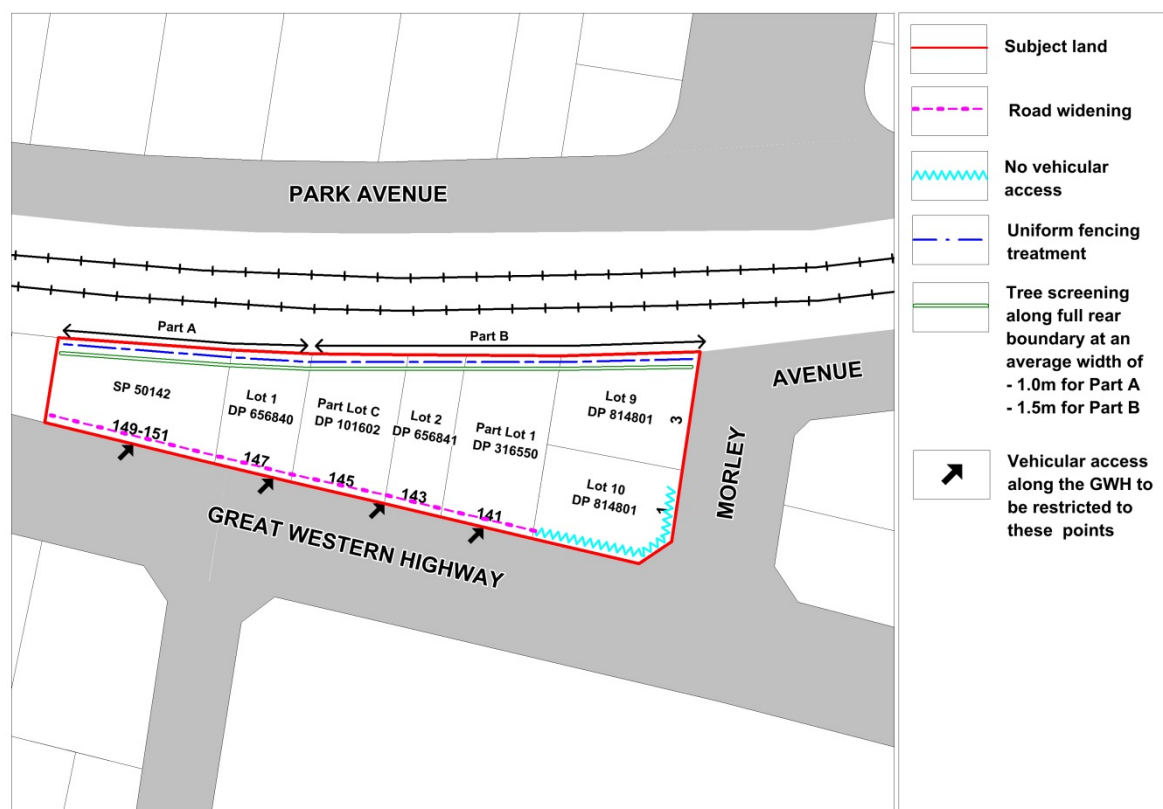
8.2.3 Car Parking

- 1) Car parking is to be provided in accordance with the Transport, Access and Parking Section of this DCP.
- 2) Car parking areas are to be suitably located so as to serve all sections of the development.
- 3) Car parking shall be provided with landscaping strips, particularly if adjacent to any existing dwelling being used for residential purposes and along the Great Western Highway and railway line boundaries of the allotments.

8.2.4 Vehicular Access

- 1) Vehicular access to 1 – 3 Morley Avenue, Kingswood will be provided off Morley Avenue only.
- 2) Vehicular access to other properties will be limited to existing vehicular access points, and in accordance with Figure E8.2: Vehicular Access. No new vehicular access points will be permitted off the Great Western Highway except for one access point to service SP 50142, 149 – 151 Great Western Highway, Kingswood.

Figure E8.2: Vehicular Access



8.2.5 Loading Areas

- 1) Sufficient loading areas shall be provided on site in accordance with the requirements of the Transport, Access and Parking Section of this DCP.

8.2.6 Storage Area

- 1) Storage areas will not be permitted along the Great Western Highway frontage. All goods and materials shall be stored within buildings.

8.2.7 Building Design and Layout

- 1) The design of buildings and layout of uses on site shall:

- a) ensure a proper design and landscape address to both the Great Western Highway and Western Rail Line having regard to the high visual exposure of the land; and
- b) ensure that any impact on the amenity of adjoining residential dwellings is minimised.

8.2.8 Western Rail Line

- 1) To achieve a high standard and uniform address to the Western Rail Line, the following shall be undertaken:
 - a) The lot boundary to the Western Rail Line is to be screened with trees comprising of species consistent with the existing landscape setting of the area. This tree screen shall vary in width as per the plan attached to this section; and
 - b) Any fencing treatment of the boundary to the Western Rail Line shall be uniform for all lots and comprise of wire mesh fencing to a height of 1.8m.

8.2.9 Landscaping along the Great Western Highway

- 1) Landscaping shall form an integral part of the use of the setback area from The Great Western Highway.
- 2) It shall at maturity effectively screen any car parks and visually 'soften' the built form nature of the development in order to emphasise the 'low key' commercial character of development and to be compatible with existing residences.

Part B – The Knoll

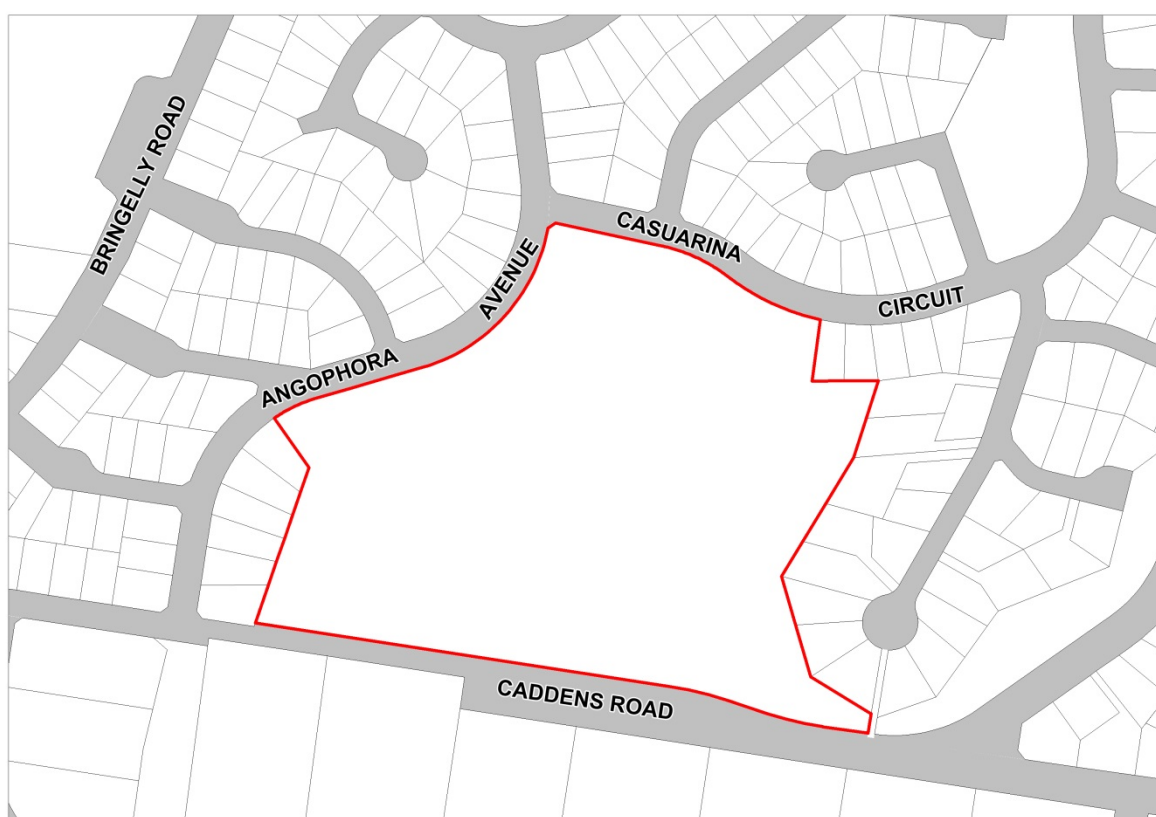
8.3 Preliminary

8.3.1. Land to which this Part Applies

This section applies to the land located at 17-53 Caddens Road, Orchard Hills (Lot 21 DP 1151724) within the Penrith Local Government Area.

The land, known as 'The Knoll' is identified in Figure 8.4.

Figure 8.4: Land to which The Knoll applies



8.3.1.1 Relationship to other Plans and Documents

This section must be read in conjunction with any environmental planning instrument applying to the land, as well as any Planning Agreement for The Knoll.

In the event of any inconsistency between this Section and the rest of this DCP, the requirements of this Section prevail.

Where a specific issue is not addressed in this Section, reference should be made to relevant sections of this DCP.

8.3.1.2 Supporting Studies

The following supporting studies and documents have been used in the preparation of this section and are available for reference from Council:

- a) Aboriginal Heritage Assessment by Godden Mackay Logan and Jo McDonald (March 2012).
- b) Ecological and Bushfire Report by EcoLogical Australia (March 2012).
- c) Infrastructure and Services Report by J. Wyndham Prince (March 2012).
- d) Phase 1 Environmental Site Assessment by WSP (March 2012).
- e) Traffic Report by Halcrow (May 2012).
- f) Stage 1 Road Safety Audit by GTA Consultants (November 2012)
- g) Community Consultation Report by Manidis Roberts (May 2012).
- h) Stormwater Management Report by J. Wyndham Prince (February 2013).
- i) JBS Environmental Phase 2 Investigation (Feb 2012).

8.3.2 Structure Plan

8.3.2.1 Vision for The Knoll

The Knoll comprises accessible grassland with an area of approximately 7.33 hectares. The Knoll is surrounded by existing residential development.

The development of the Knoll is to:

- a) Provide an appropriate balance between low-density residential development and public open space.
- b) Create a 'Hill Top Park' for community use.
- c) Demonstrate a high standard of residential amenity and a high standard of urban and architectural design quality.
- d) Maintain the existing established character of the areas adjoining the Knoll.
- e) Facilitate connections with land and development adjoining the Knoll.
- f) Maintain district views and vistas attained from the Hill Top Park.
- g) Provide an integrated, convenient and sustainable road, footpath and cycle network.

In order to achieve the vision for the Precinct, a Structure Plan was prepared as part of the planning proposal. This Structure Plan demonstrated the opportunity to subdivide land into a minimum of 45 individual residential lots and establish an area of informal public open space, to be known as Hill Top Park, at the central portion of the precinct.

The Knoll Structure Plan establishes the urban structure and form for the planning and future development of the Knoll. The Structure Plan (Figure E8.5) demonstrates the subdivision of the Knoll to provide 45 individual residential lots and an area of public open space in the form of a hill top park.

Figure E8.5 – Structure Plan for The Knoll



8.3.3 The Public Domain

8.3.3.1 Street Network

A. Objectives

- To deliver a safe and convenient vehicular, pedestrian and cycleway network.
- To provide visual interest within streetscapes.

B. Controls:

- The street network is to be set out in accordance with the Structure Plan.
- The cycleway network is to be built in accordance with the Structure Plan. The indicative route of the cycleway mostly crosses through the precinct and connects to the new Caddens residential development to the east of the precinct.
- Street trees are required on all street verges/nature strips (between footpath and kerbs). Street planting will be located to:
 - Minimise risk to utilities and services.
 - Maintain adequate sight lines for vehicles and pedestrians particularly in locations of driveways and corners.
 - Provide adequate shading for pedestrians.
 - Provide attractive and interesting streetscape.
 - Minimise interference with street lighting.

- 4) The provision of street trees should be of a uniform species and preferably native.

Figure E8.6 – Indicative cross-sections and plans of desired streetscapes for allotments with precinct

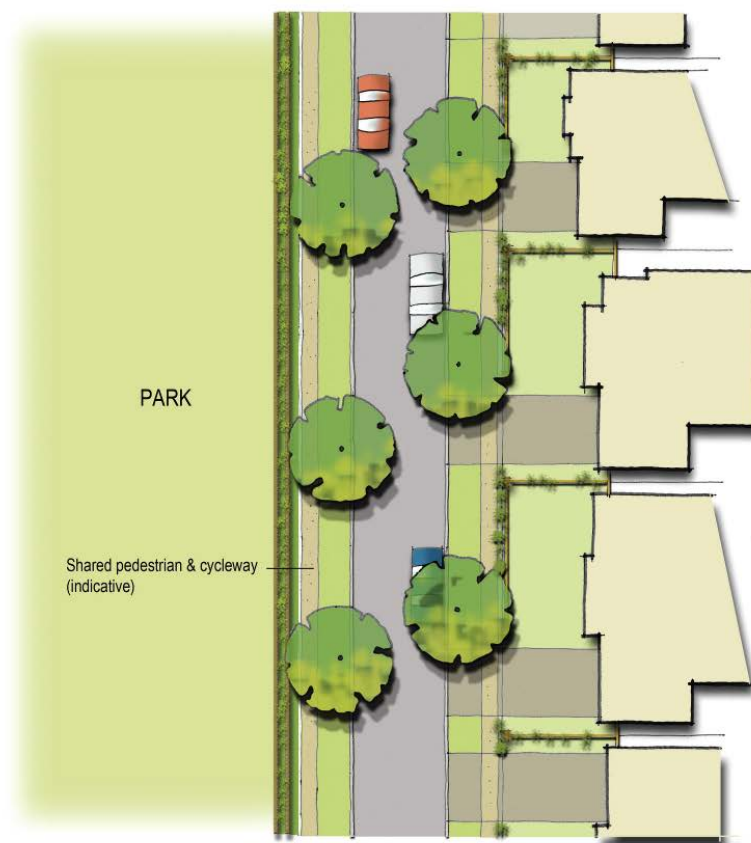
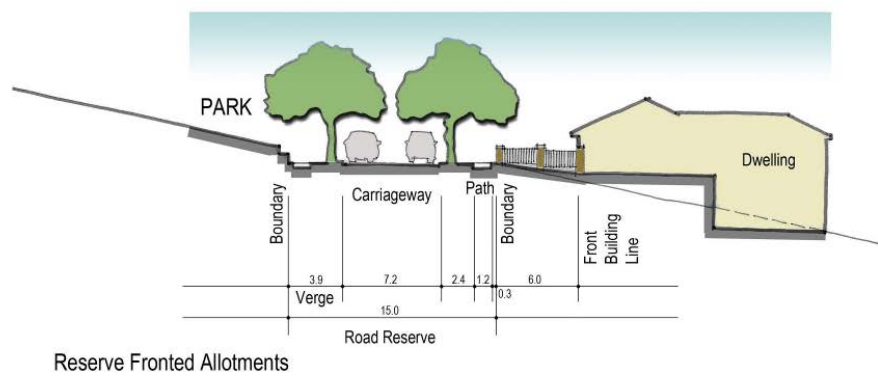
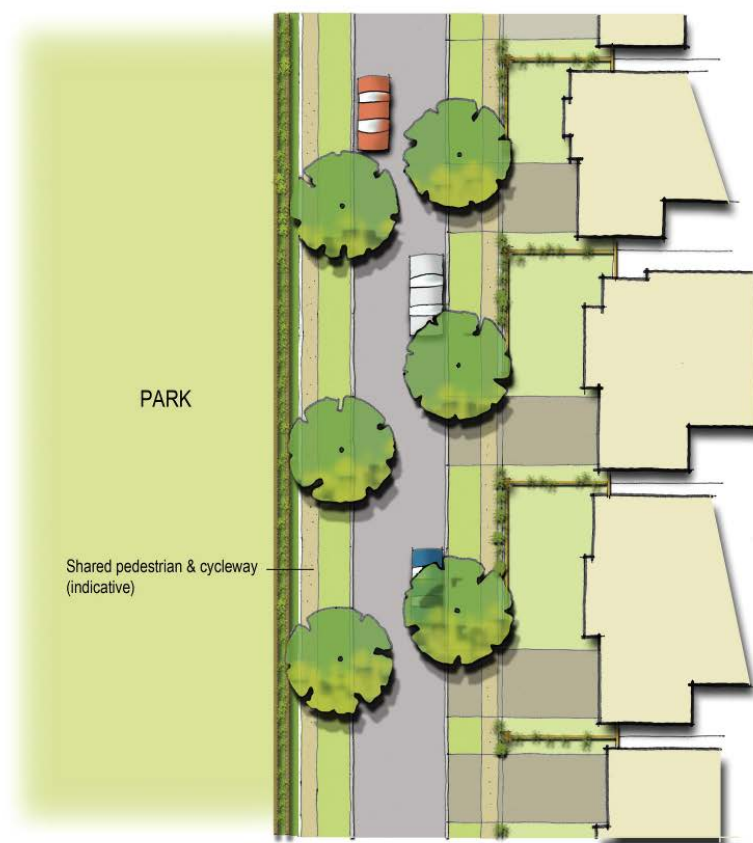
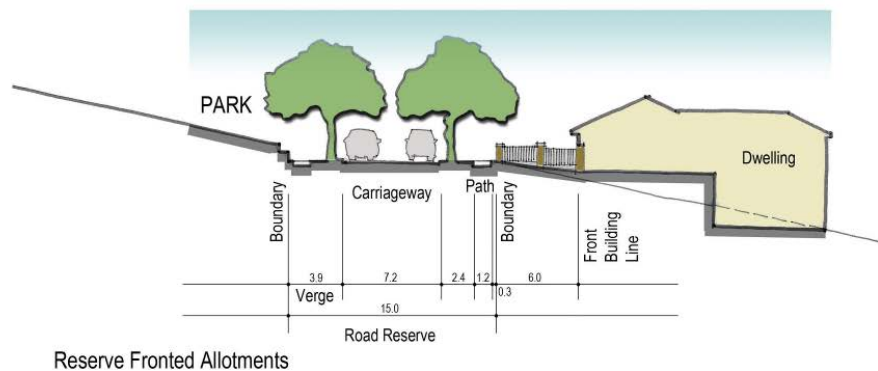


Figure E8.7 – Indicative cross-sections and plans of desired streetscapes for reserve fronted allotments within precinct



8.3.3.2 Pedestrian and Cycle Network

A. Objectives:

To provide a clear, convenient, efficient and safe network of pedestrian and cycleway paths for the use of the community, within and beyond the precinct.

To encourage residents to walk or cycle, in preference to using motor vehicles, as a way of gaining access to schools, shops, and local community and recreation facilities outside of the precinct.

B. Controls:

- 1) Pedestrian routes and cycleways are indicated on the Structure Plan.
- 2) Pedestrian footpaths are to have a minimum width of 1.5m.
- 3) All pedestrian and cycleway routes and facilities are to be consistent with the Planning Guidelines for Walking and Cycling (Department of Infrastructure, Planning and Natural Resources and the Roads and Traffic Authority, 2004).
- 4) Pedestrian and cycle routes and facilities in public spaces are to be safe, well lit, clearly defined, and be functional and accessible to people with a disability.
- 5) Clearly and frequently signpost shared pedestrian/cycle links.
- 6) Pedestrian and cycle pathways, and pedestrian refuge islands are to be designed to be fully accessible by all in terms of access points and gradients, generally in accordance with Australian Standard 1428:1-4.
- 7) Pedestrian and cycle pathways are to be constructed as part of road infrastructure works with detailed designs to be submitted with the development applications for subdivision.

8.3.3.3 Open Space Network

A. Objectives:

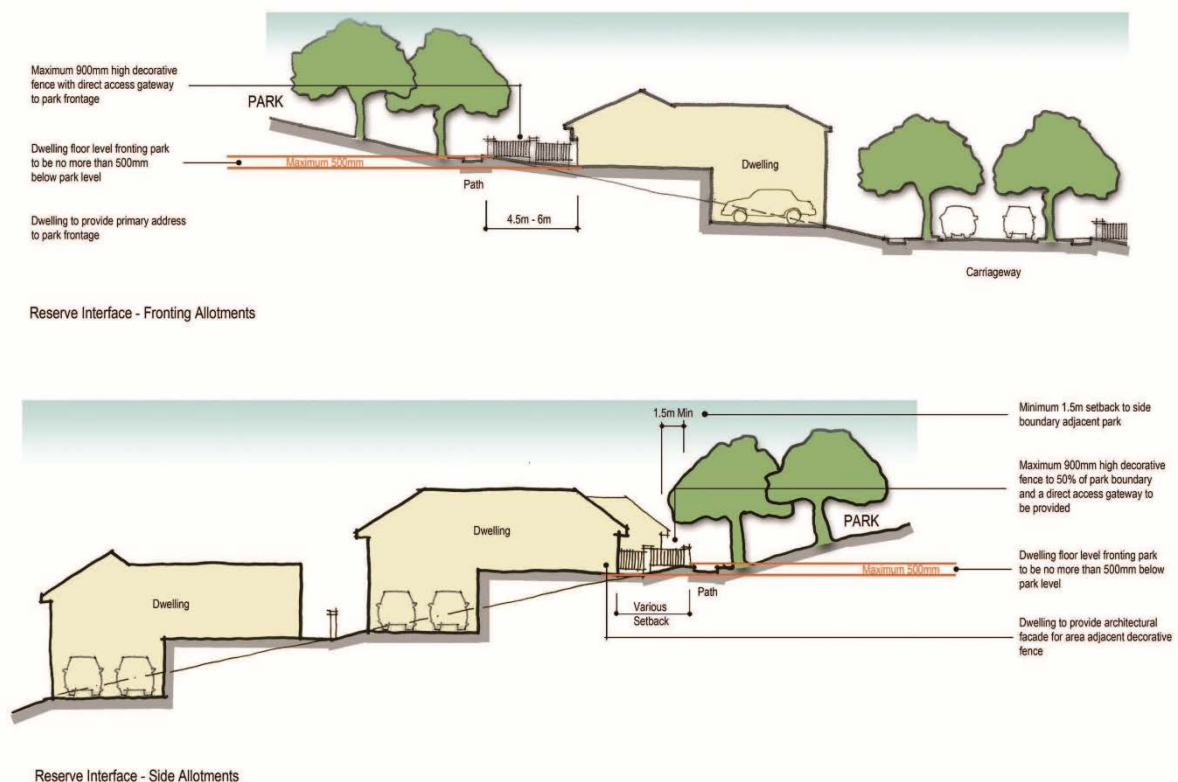
- a) To create a sense of identity for the precinct while maintaining the existing character of surrounding development.
- b) To respect the amenity and privacy of existing residential properties adjacent to the precinct.
- c) To create passive recreational open space for the precinct for both future residents of the precinct and existing residents of surrounding properties.
- d) To provide a visual focal point of the precinct.
- e) To maintain district views and vistas of Orchard Hills and beyond from the hilltop at the precinct.

B. Controls:

- 1) Retain and embellish the land nominated as Hill Top Park on the Structure Plan.
- 2) Dwellings that border the Hill Top Park should generally be orientated towards the open space for passive surveillance and deliver an attractive surround to the Hill Top Park (refer to Figure E8.8)
- 3) Provide cycle ways and footpaths to form key open space linkages throughout the precinct.

- 4) Identify areas for passive recreational space within the proposed Hill Top Park.
- 5) Provide a three metre wide landscaped easement between existing residential properties and new lots abutting the precinct's western and eastern boundaries to respect privacy and amenity between the precincts.
- 6) Provide appropriate street furniture within the Hill Top Park which should be consistent in terms of appearance and design. A public domain plan should be prepared with the subdivision development application showing street furniture, including as appropriate:
 - a) Seats
 - b) Litter bins
 - c) Drinking fountains
 - d) Lighting
 - e) Information signs

Figure E8.8 – Indicative interface with Hill Top Park on front and side allotments



8.3.4 Residential Development

8.3.4.1 Subdivision Design

A. Objectives:

- a) To establish a consistent urban form and structure that encourages a low density residential character with desirable streetscapes.
- b) To design lots that respond to the natural topography and street pattern of the precinct.
- c) To provide a desirable level of amenity for individual lots in terms of solar access, views and outlook, and proximity to public open space.

B. Controls:

- 1) The subdivision layout of the precinct should be subject to survey generally in accordance with the Structure Plan at Figure E8.5.
- 2) Provide a balanced range of north-south and east-west orientated sites.

8.3.4.2 Streetscape, Feature Elements and Roof Design

A. Objectives:

- a) To encourage dwelling designs which create a harmonious streetscape and responds to the predominate character of the surrounds of the precinct.
- b) To provide a clear distinction between public and private space and to encourage casual surveillance of the street and Hill Top Park.
- c) To identify elements of roof design that respond appropriately to the streetscape character while providing weather protection to windows.
- d) To create an attractive and cohesive streetscape through the provision of simple and articulated building and roof forms in a contemporary style.
- e) To reduce the dominance of garages on the streetscape.
- f) To encourage eaves, verandahs, balconies and other feature elements on the front facades of dwellings.

B. Controls:

- 1) Primary street façade of a dwelling to incorporate at least one of the following building elements to articulate its presentation to the street:
 - a) an entry feature
 - b) awnings or louvres or other sunshade devices over windows
 - c) open verandah
 - d) bay windows
 - e) balcony at first floor
 - f) other decorative architectural features
- 2) Secondary street façade on corner lots include at least a window off a habitable room and particular design features (e.g. verandah, balcony or landscaping).

- 3) Eaves to be provided to all roofs with a minimum overhang of 400mm.
- 4) Roof pitch is to be a maximum of 25 degrees.
- 5) Garages and parking spaces are to be sited behind the front building line of dwelling or integrated into the façade of the dwelling for garages that are situated at basement or sub-ground floor level.

Figure E8.9 – Primary Street Façade Design Principles



8.3.4.3 Dwelling Height, Massing and Siting

A. Objectives:

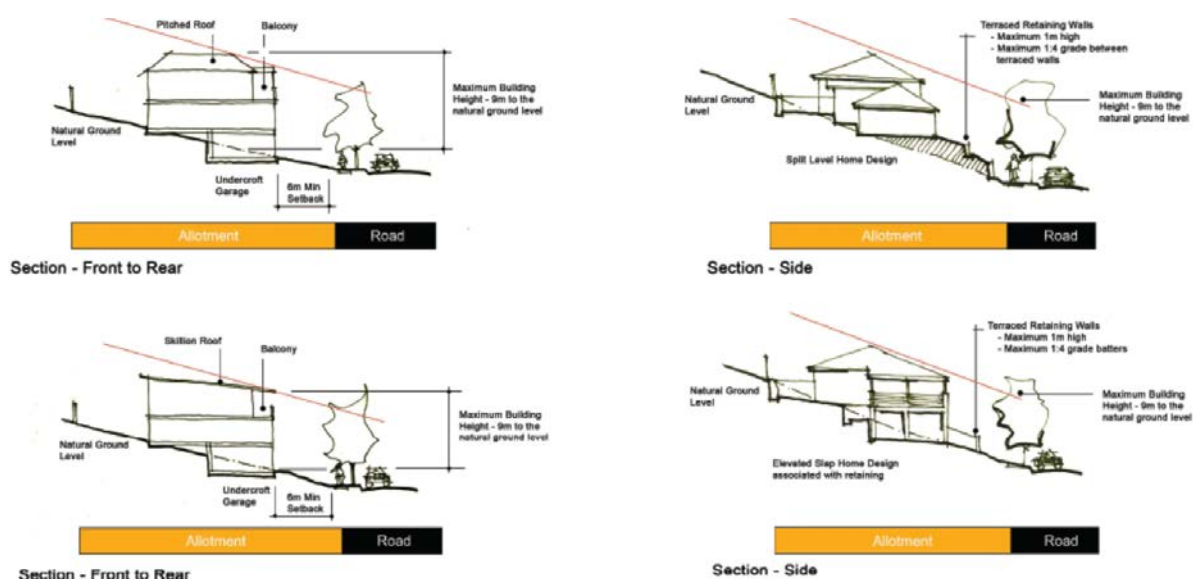
- a) To achieve consistency in design of dwellings and create an appropriate scale for dwellings to respond to the natural landscape and street pattern of the precinct.

- b) To nominate building heights to create a desirable streetscape and respect solar access and privacy aspects of individual lots.
- c) To avoid significant cut and fill of land to accommodate dwellings on steeply sloping site.

B. Controls:

- 1) Dwellings are to be a maximum of two storeys in height with the exception of dwellings that incorporate basement/undercroft garages or split level solutions for steeply sloping sites as illustrated in Figure E8.10.
- 2) Maximum external wall height for all dwellings is 7m from the natural ground level.
- 3) At least 3 hours of direct sun between 9am and 3pm onto 50% of principal private open space should be achieved for new dwellings and their adjoining properties.
- 4) Satisfy cut and fill and excavation numeric controls set out in Section 8.3.4.5 Development on Sloping Land of this Part.
- 5) Housing interface to the Hill Top Park to be a maximum of 500mm below park level at the boundary.

Figure E8.10 –Building Height and Development Control solutions for sloping sites



8.3.4.4 Building Setbacks

A. Objectives:

- a) To minimise the impacts of development on neighbouring properties in relation to views, privacy and overshadowing.

- b) To provide space between buildings.
- c) To reinforce the visual prominence of corner lots to promote a strong and legible character.
- d) To reduce the visual impact of front garaging on street frontages.

B. Controls:

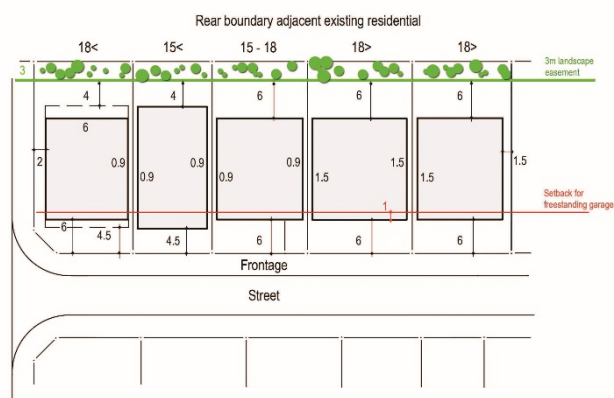
- 1) Dwellings are to be sited in conformity with the numeric controls specified in Table E8.1 and the landscape easement requirement specified in Section E8.3.3.3 Open Space Network, in order to establish a consistent front building line in response to the curve pattern of the road reserve as well as respecting solar access, privacy and amenity aspects of individual lots (refer figure E8.11).

Table E8.1: Building Setbacks

Allotment Type	Front	Side	Rear
Frontage with 18 and greater	6m	1.5m	6m
Frontage between 15m and 18m	6m	0.9m	6m
Frontage with 15m and lesser	4.5m	0.9m	4m

- 2) Secondary frontages for all corner sites are to be provided in accordance as follows:
 - a) 2m on lots less than 18m wide
 - b) 3m for dwellings on lots 18m and wider
- 3) Secondary frontages should be staggered to minimise the incidence of blank frontages.
- 4) Freestanding garages that are independent of a dwelling (i.e. not sited within the building envelope of a dwelling at basement/undercroft level) are to be sited at least 1m behind the front building line of dwellings to reduce its visual prominence within the street frontage of sites.

Figure E8.11 –Setback Principles



8.3.4.5 Development on Sloping Land

A. Objectives:

- a) To minimise incidence of cut and fill and alterations in natural ground levels.
- b) To encourage appropriate dwelling design which suits the topography of lots.
- c) To protect adjoining properties from potential structural instability by proposed excavation.
- d) To lessen the visual impact of retaining walls on allotment boundaries.

B. Controls:

- 1) Cut and fill of land is to be minimised under the following numeric controls:
 - a) Maximum depth of any cut in the slope is 1m.
 - b) Maximum height of any fill of the slope is 1m.
- 2) Side boundary retaining walls for development on cross slopes should retain a cut no higher than 1m.
- 3) Excavation works should be at least 1.5m from side and rear boundaries to respect the structural stability of adjoining sites.
- 4) Retaining walls should be setback at least 1m from any boundary and if possible screened by suitable landscaping.
- 5) Where the retaining of land is greater than 1m in height, retaining walls should be tiered with a minimum distance of 600mm between walls and suitably landscaped.
- 6) Enbankments should have a maximum grade of 1:4 and be suitably landscaped to prevent erosion.

8.3.4.6 Studio or Secondary Dwellings

A. Objectives:

- a) To provide a diversity of housing and accommodation options to satisfy various family types and age groups.
- b) To provide innovative housing solutions compatible with the surrounding residential development.

B. Controls:

- 1) The design of the studio or secondary dwelling should be compatible with the design scheme of the principal dwelling.
- 2) Windows and private open spaces should not overlook the private space of any adjacent dwellings.
- 3) Where practical private open space in the form of a balcony should be provided to the secondary dwelling in addition to private open space area requirements.

8.3.4.7 Private Open Space

A. Objectives:

- a) To allocate sufficient space within an allotment for recreational purposes.

- b) To provide a desirable level of residential amenity.
- c) To optimise solar access on recreational areas.

Controls:

- 1) Each dwelling must be provided with an area of private open space.
- 2) Minimum of 20% of site area is to be reserved for private open space capable for recreational uses.
- 3) 50% of the private open space should be exposed to direct sunlight for at least 3 hours between 9am and 3pm.

8.3.4.8 Site Coverage and Landscaped Area

A. Objectives:

- a) To provide sufficient landscaped area to each allotment.
- b) To encourage an appropriate level of amenity.
- c) To enhance streetscapes.
- d) To reduce impervious areas/or maximise pervious areas/or maximise stormwater infiltration/absorption to lessen site stormwater runoff.

Controls:

- 1) A 3m landscaped setback will be provided at the rear of properties which are adjacent to existing residents (as illustrated in Figure E8.5). This will be provided in addition to standard building setbacks detailed in section E8.3.4.4 Building Setbacks.
- 2) Landscaped area in any part of a site, at ground level, that is permeable and consists of soft landscaping, turf or planted areas and the like. On lots 450m² and greater, 35% of the lot area must be landscaped.
- 3) A landscape plan is to be submitted with all development applications for residential development. The development application must indicate the location and other requirements for landscaping contained in this DCP.
- 4) The front setback area of a dwelling is to be landscaped with the treatment to clearly delineate between the private and public domain. The front setback is to incorporate two trees. The rear garden must include at least one tree that will achieve a height of 6m at maturity. These may include existing trees that are to be retained.
- 5) To prevent accumulation of water and concentration of salts, subsoil drains are to be installed around the perimeter of residences and connected to the stormwater system.
- 6) Low water demand drought resistant vegetation is to be used in common landscaped areas, including native salt tolerant trees.
- 7) Garbage bin storage and clothes drying areas are to be concealed from view and shown on site plans.

8.3.4.9 Fencing

A. Objectives:

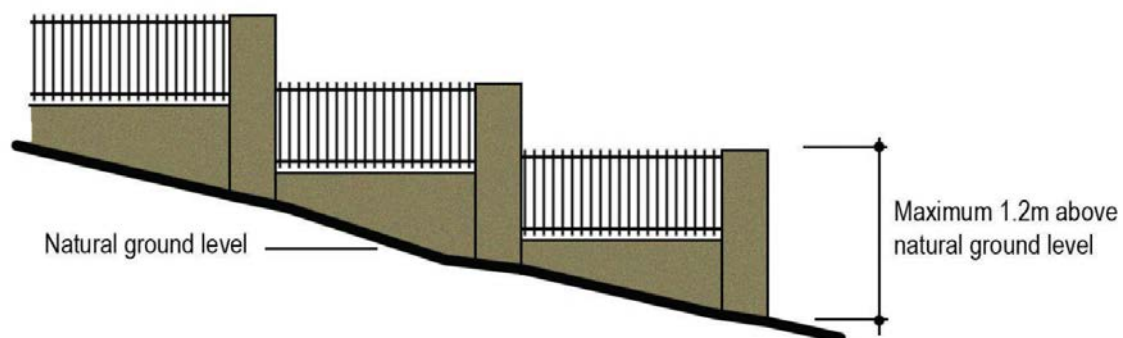
- a) To provide privacy to both residents and neighbours.

- b) To ensure boundary fencing is of a high quality and does not detract from the streetscape.
- c) To ensure that fencing is consistent with the street and the design and style with its dwelling.
- d) To permit causal surveillance of open space.

Controls:

- 1) The design of front fences is to take reference from, and complement, the architectural style of the dwelling on the site and dwellings on adjacent sites in terms of style, height and materials.
- 2) Maximum height of 1.2m for front fences.
- 3) On sloping sites, the height of the fence is to be averaged so that the fence steps down the slope (refer to Figure E8.12).
- 4) Any solid up-stand section should be limited to 600mm in height. The top half of the fence should be of an open design with a minimum open area of 50%, for visibility to and from the site. Components such as arched gates, piers and the like may exceed the maximum 1.2m height limit.
- 5) Maximum height of 1.8m for side and rear boundary fences.
- 6) Where a dwelling is located adjacent to open space, boundary fencing is to be of a high quality material and finish and the design is to permit causal surveillance of the open space.
- 7) The fencing on the secondary street of a lot with a frontage 17.5m or greater must be set back 0.9m from the secondary street boundary and must incorporate landscaped vegetation between the fence and the boundary.
- 8) Metal sheet fencing is not permitted anywhere.

Figure E8.12 – Front fencing



8.3.4.10 Garages and Access

A. Objectives:

- a) To provide sufficient, safe and secure parking for residents.
- b) To design and locate off-street car parking areas not to unreasonably detract from the appearance and quality of the dwelling-house or streetscape.

- c) To maximise pedestrian and vehicular safety.
- d) To minimise loss of views from the public domain.
- e) To discourage garages from dominating the frontage of a dwelling.

Controls:

- 1) Off-street parking spaces should be provided in accordance with within the Transport, Access and Parking Section of this DCP.
- 2) All car accommodation including garages must be sympathetic in architectural character to the dwelling and not visually dominate or adversely impact on the existing built or landscape character of the street.
- 3) Where a carport or garage entry forms part of the front façade of a dwelling, it is to be set back a minimum of 5.5m from the front boundary and at least 1m behind the building façade.
- 4) The maximum dimensions for garage doors are to be less than 50% of the front façade, 6m in width and 2.4m in height. Front double garages are only permitted on lots with a frontage width equal to or greater than 12.5m. Triple width garages are discouraged.
- 5) Parking spaces are to comply with AS 2890.1 off street parking, including:
 - a) Minimum internal width between main walls of 3m for a single garage; and Minimum internal width between main walls of 5.5m for a double garage.
 - b) Driveway access to garages on steep land must comply with AS 2890.1. Stencil-crete on driveways is not permitted.
- 6) Driveways are to be no wider than 4.5m at the front boundary and should be located a minimum of 1.5m from street trees.
- 7) Where practical driveways and car parking facilities for corner lots are to be accessed off a secondary street.
- 8) The maximum number of dwellings to be serviced from a shared driveway is 4.

8.3.5 Environmental and Residential Amenity

8.3.5.1 Visual and Acoustic Privacy

A. Objectives:

- a) To maintain visual and acoustic privacy for each property.
- b) To discourage overlooking from one dwelling to another.

B. Controls:

- 1) Habitable room windows should not directly face other habitable room windows or private open space of adjoining dwellings on site or on adjoining sites.
- 2) Balconies at first floor with side and rear aspects to have a maximum area of 15m² and a depth of 1.7m to minimise the incidence of overlooking from one dwelling to another.
- 3) Windows of habitable rooms above ground floor level should have sill heights of 1.7m. Windows with sill heights less than 1.7m above floor level should comprise opaque glazing below this level.

- 4) Use of landscaping alongside boundaries is encouraged to provide natural screening between lots.
- 5) The internal layout of residential buildings, window openings, the location and design of outdoor living areas and elements (i.e. courtyards, balconies and retaining walls), and building plant should be designed to minimise noise impact and transmission and enhance visual amenity.

8.3.5.2 Safety and Surveillance

A. Objectives:

- a) To reduce opportunities for concealment.
- b) To encourage natural and passive surveillance of the street and public domain.
- c) Dwelling design should encourage overlooking of primary and secondary streets as well as other public or communal areas, including the Hill Top Park. This is to be achieved by siting at least one living room to the front of the dwelling (which has an aspect to a primary street) and at least one habitable room to the side or rear (which has an aspect to a secondary street or public open space).
- d) Front fencing to comply with design controls set out in the fencing section of this Part to enable reasonable passive and casual surveillance of the street.
- e) Developments, including open space, are to avoid creating areas for concealment and blank walls facing the street.
- f) Pedestrian and communal areas are to have sufficient lighting to ensure a high level of safety and must be designed to minimise opportunities for concealment.
- g) Development applications for subdivision, public open space and community facilities are to incorporate the principles of Crime Prevention Through Environmental Design (CPTED). Refer to the Site Planning and Design Principles section of this Plan for the CPTED principles.

8.3.5.3 Sustainable Building Design

A. Objectives:

- a) Design and build dwellings that are environmentally sustainable in relation to energy and water use.
- b) Maximise opportunities for natural ventilation through building layout.

B. Controls:

- 1) Design of dwelling to be in accordance with energy and water use targets set out under State Environmental Planning Policy – Building Sustainability Index (BASIX). A BASIX Certificate is required for all new residential development.
- 2) Minimum dwelling floor to ceiling heights should be as follows:
 - a) Ground floor habitable rooms of two storey single dwellings – 2.65m;
 - b) Upper floors and all non-habitable rooms – 2.4m;
 - c) Single storey dwellings – 2.65m;
 - d) Attics – 1.5m wall height at edge of room with a 30 degree minimum ceiling slope; and
 - e) All floors of multi-unit dwellings – 2.4m.

- 3) Door and window openings and building/dwelling layout are to encourage adequate cross ventilation and solar access.
- 4) North and west facing windows are to incorporate sunshade awnings/panels or appropriate weather control devices.
- 5) All dwellings are to incorporate an outdoor clothes line/drying area in a sunny location not visible from a street or public place.

Table of Contents

E9 MULGOA VALLEY	2
9.1 SITING AND BUILT FORM CONTROLS	3
9.1.1 HERITAGE ITEMS AND VISTAS	3
9.1.2 SITING	4
9.1.3 BUILDING FORM, MATERIALS AND COLOURS	4
9.1.4 PLANTING	6
9.1.5 ACCESS, PARKING AND SERVICES	6
9.1.6 FENCES AND ENTRANCES	7
9.1.7 SIGNAGE	8
9.2 OTHER CONTROLS	11
9.2.1 MULGOA ROAD	11
9.3 OTHER RELEVANT INFORMATION	11

E9 Mulgoa Valley

A. Background

Area included within the Mulgoa Valley Precinct

The Mulgoa Valley Precinct includes land in the Mulgoa Valley and parts of Wallacia. It is bounded on the west by the Nepean River and Blue Mountains National Park, on the south by the village of Wallacia (and includes the village), on the east by Luddenham and on the north by Glenmore Park and Regentville. The extent of the land is shown on the LEP Clause Application Map with a notation 'Mulgoa Valley'.

The Precinct is characterised by its predominantly rural landscape comprising creek flats, undulating agricultural land, wooded hills and escarpment, and large estate gardens. The backdrop of the Nepean River and Blue Mountains contributes to this landscape. The Precinct includes the villages of Mulgoa and Wallacia, which also have important cultural and natural heritage qualities.

The Mulgoa Valley Precinct plays an important role in providing:

- A nature and heritage conservation area on the fringe of the Sydney metropolitan area;
- A rural, recreation and tourism centre for Penrith and suburbs in the surrounding region;
- An area of limited rural living opportunities in sympathy with its landscape and heritage values; and
- A landscape buffer between the Blue Mountains National Park and the suburbs of Western Sydney.

Aims of the controls for the Mulgoa Valley Precinct

The controls for this Precinct seek to conserve the heritage, rural and natural landscape of the Mulgoa Valley, and encourage its development as a rural area emphasising its visual and environmental heritage values.

The controls are in addition to and support the provisions in LEP relating to Mulgoa Valley and the Villages of Mulgoa and Wallacia. In particular, applicants will need to demonstrate how any proposed development will address the development consent criteria in subclause (3) of the Mulgoa Valley clause of the LEP.

B. General Objectives

- a) To conserve the rural landscape of the Mulgoa Valley;
- b) To protect the setting of the villages of Mulgoa and Wallacia within the rural landscape;
- c) To conserve heritage items and vistas within the Valley;
- d) To protect natural ecological elements within the Valley;
- e) To protect the agricultural capability of prime agricultural land; and

- f) To ensure that development in the Valley is consistent with conserving its rural and natural landscape, heritage and agricultural qualities.

C. Other Relevant Sections of this DCP

This DCP is a multi-layered document that recognises the relationship of a number of issues in achieving sustainable outcomes. Therefore, it is important to read all relevant parts of this DCP.

9.1 Siting and Built Form controls

9.1.1 Heritage Items and Vistas

A. Background

The Mulgoa Valley Precinct has played an important role in the history of the State's development. From 1810, the Valley was a key area of European settlement and it became closely linked to the activities of the wealthy Cox family and other prominent figures of the colony. The Precinct's heritage significance lies in the surviving sites, buildings, gardens and pastoral landscapes developed by the Cox family. These features provide some of the best remaining physical evidence in NSW of the manner in which the country was settled and the impact that this had on the landscape. This section seeks to protect the Valley's heritage items and their vistas from any unsympathetic development.

B. Objectives

- a) To protect the surviving early colonial rural landscape from any further degradation;
- b) To ensure development does not prejudice the remaining evidence of the Cox family's associations with the Valley, its houses and gardens;
- c) To preserve and enhance the visual relationship between the sites of Cox's Cottage, St Thomas's Church and Fernhill;
- d) To conserve the surviving structures, features and gardens at the major historic and archaeological sites;
- e) To protect the visual catchments of heritage items by appropriately siting development having regard to the significance of the setting;
- f) To prevent development within the historic landscapes and curtilages of heritage items which may detract from the significance of those sites; and
- g) To prevent any activity which could destroy the potential archaeological resources of any heritage items.

C. Controls

- 1) No structures are to be located in the view corridors linking the heritage items of Cox's Cottage, St Thomas's Church and Fernhill.

- 2) Figures E9.1 and E9.2 show the extent of the historic landscapes and curtilages in the Mulgoa Valley and should be used in assessing the impact development may have on them. Buildings are to be screened from view from heritage items and their curtilages. (Figures E9.1 and E9.2 are located at the end of Section 9.1).
- 3) The vistas from the major heritage items in Mulgoa Valley are shown on the LEP on the Scenic and Landscape Values Map. No development is permitted in the vistas of these heritage items unless they are for the purpose of restoring, rehabilitating or preserving elements of the heritage items, such as fences, outbuildings, gates, roadways or plantings. Such structures should be designed and sited so as not to detract from the vistas.
- 4) Landscaping, including trees, should be sensitively sited to complement rather than interfere with the vistas.

9.1.2 Siting

A. Background

This section seeks to ensure that buildings are sited so they are in harmony with the existing landscape.

B. Objectives

- a) To ensure that buildings are sited to protect and enhance the rural and natural landscape of the Valley, particularly when viewed from roads and other public places.

C. Controls

- 1) Buildings are to be located on mid-slopes to avoid visual impact on ridges and to avoid the banks of watercourses.
- 2) Buildings are to be setback at least 30m from public roads and at least 100m from Mulgoa Road. This control may be varied depending on the topography of the site.
- 3) Buildings are to minimise excavation, filling and high foundations by avoiding slopes greater than 1 in 6.
- 4) The longest façade of a building is to be parallel to the contours of the land.
- 5) Buildings are to be grouped to minimise the visual impact of buildings in an open rural landscape.

9.1.3 Building Form, Materials and Colours

A. Background

This section seeks to ensure that buildings adopt appropriate building forms, materials and colours that are consistent with conserving the Valley's rural and natural landscape and its heritage values.

B. Objectives

- a) To ensure building forms are in keeping with the traditional buildings of the Mulgoa Valley;
- b) To ensure building materials match or complement those of older rural buildings and heritage items; and
- c) To ensure building colours are derived from the local natural landscape, especially the stone and soil, and from the traditional colours of the historic buildings of the Valley.

C. Controls

- 1) Buildings are to be a maximum of two storeys in height.
- 2) Pitched roofs are preferable with a slope of between 30 and 45 degrees. Skillion roofs by themselves are to be avoided except as verandahs or for extensions.
- 3) Large elements, especially flat surfaces, are to be avoided. Building façades and roof lines are to be broken into small elements. Garden structures, such as trellises and pergolas, can assist in breaking up large elements.
- 4) Buildings are to be designed with a horizontal rather than vertical emphasis. For example, elements such as verandahs and wide eaves can add a horizontal emphasis.
- 5) Windows and doors, expressed as openings in solid walls, are to have a vertical rather than a horizontal emphasis, and large unbroken glazed panels are to be avoided.
- 6) Building materials are to match or complement those of older rural buildings and heritage items. Examples of appropriate materials are:
 - a) Walls – Dressed Hawkesbury sandstone, rendered brickwork, rendered concrete block work, pise, mud brick, earth wall construction, painted weatherboard (horizontal), corrugated iron and timber slab construction; and
 - b) Roofs – Slate, timber shingles, clay tiles of traditional shape and colour, corrugated iron and ribbed sheet metal.
- 7) Building colours are to be derived from the local natural landscape, especially the stone and soil, and from the traditional colours of the historic buildings of the Valley. Examples are:
 - a) Walls – Light Indian Red, Biscuit, Light Stone, Drab, Light Red/Brown, Light Cream, Pink Beige and Brown Pink. Lighter colours are also acceptable, but avoid white and variegated and mottled colours in brickwork;
 - b) Roofs – Unpainted iron, Light Olive Green, Paynes Grey, slate grey and blue/grey; and
 - c) Trim – Bold rich deep colours such as Maroon, Terracotta and Brunswick Green.

9.1.4 Planting

A. Background

This section seeks to ensure that important indigenous vegetation and historic introduced vegetation that contributes to the landscape of the Mulgoa Valley Precinct is protected and enhanced.

B. Objectives

- a) To protect and enhance existing indigenous vegetation and historic introduced vegetation that contributes to the Valley's rural and natural landscape and its heritage values.

C. Controls

- 1) Existing stands of indigenous vegetation and key individual indigenous trees that contribute to the landscape character shall be retained.
- 2) Historic plantings of introduced trees and shrubs shall be retained where they have been identified as significant, or form a positive visual feature in the landscape, or complement a place of historic or cultural significance. For example, the entrance drive of *Pinus pinea* (Stone pines) at Winbourne, the *Araucaria bidwillii* (Bunya pines) at Glenmore, the *Ficus rubiginosa* (Port Jackson Fig) at Fairlight, and *Cinnamomum camphora* (Camphor Laurel) at Glenleigh.
- 3) Regrowth vegetation in the view corridors linking Cox's Cottage/St Thomas's Church/Fernhill may be selectively thinned to restore the landscape to an historic park-like character. However, the rough barked angophora species (*A. subvelutina* and *A. floribunda*) and their hybrids must be retained. For screening or to enhance this landscape character, clumps of three or four of these angophoras should be planted in appropriate locations. Naturally occurring seedlings or those specially propagated from specimens in the locality (provenance stock) for the purpose should be used.
- 4) A comprehensive list of suitable species is available on Council's website or by contacting Council.
- 5) Non-traditional introduced species with strongly coloured or otherwise prominent foliage is not recommended for planting in the Mulgoa Valley Precinct; e.g. golden cypress and *Pinus patula*. These species tend to detract from the landscape of traditional introduced species such as bunya pines or showy indigenous shrubs like wattles.

9.1.5 Access, Parking and Services

A. Background

This section seeks to ensure that access roads, parking areas and services do not detract from the Valley's rural and natural landscape or its heritage values.

B. Objectives

- a) To ensure the visual impact of access roads, parking areas and services is minimised.

C. Controls

- 1) Driveways and access roads shall follow the contours of the land as much as possible and be of the minimum width.
- 2) Driveways and access roads shall be constructed of compacted gravel, or paved or sealed in a dark coloured material if located on steep slopes.
- 3) Parking areas shall be separated from access roads and from the buildings they serve by planting and other landscaping.
- 4) Large parking areas shall not be visible from public roads.
- 5) Services should be appropriately located and screened by walls and vegetation to form part of a coherent group.

9.1.6 Fences and Entrances

A. Background

This section seeks to ensure that fences and entrances do not detract from the Valley's rural and natural landscape or its heritage values.

B. Objectives

- a) To ensure fences, gates and entrances are in harmony with the existing landscape and character of the Mulgoa Valley Precinct.

C. Controls

- 1) If practicable, avoid fences on road frontage boundaries.
- 2) Fences should be simple and unpretentious, and in keeping with traditional forms; e.g. unpainted timber post and rail, timber post and wire, or steel post and wire. Masonry fences, such as brick, blockwork or stone, should be avoided.
- 3) Gates and entrances should also be simple, and in keeping with traditional forms. Examples are:
 - a) Rendered and pointed brickwork, blockwork, sandstone, painted timber or post and rail;
 - b) Decorated gateposts with the property name carved or painted onto the gatepost or painted onto a wide timber top rail; and
 - c) Decorated iron, steel or timber gates.
- 4) Gates and entrances should relate to the materials and colours of the building to which they belong.

9.1.7 Signage

A. Background

This section seeks to ensure that signage does not detract from the Valley's rural and natural landscape or its heritage values.

B. Objectives

- a) To ensure signage is in harmony with the existing landscape and character of the Mulgoa Valley Precinct.

C. Controls

- 1) Signage, where permissible, shall relate to the style, character and function of the building or activity.
- 2) Signage shall not be freestanding in the natural landscape, but relate to walls, fences or buildings.
- 3) Signage shall be no larger than 0.72m² and no higher than 2m.
- 4) Illuminated signage is not permitted.
- 5) A distinctive signage system for the Valley is encouraged based on colonial lettering faces, proportions, sizes and details.

Figure E9.1: Historic landscapes

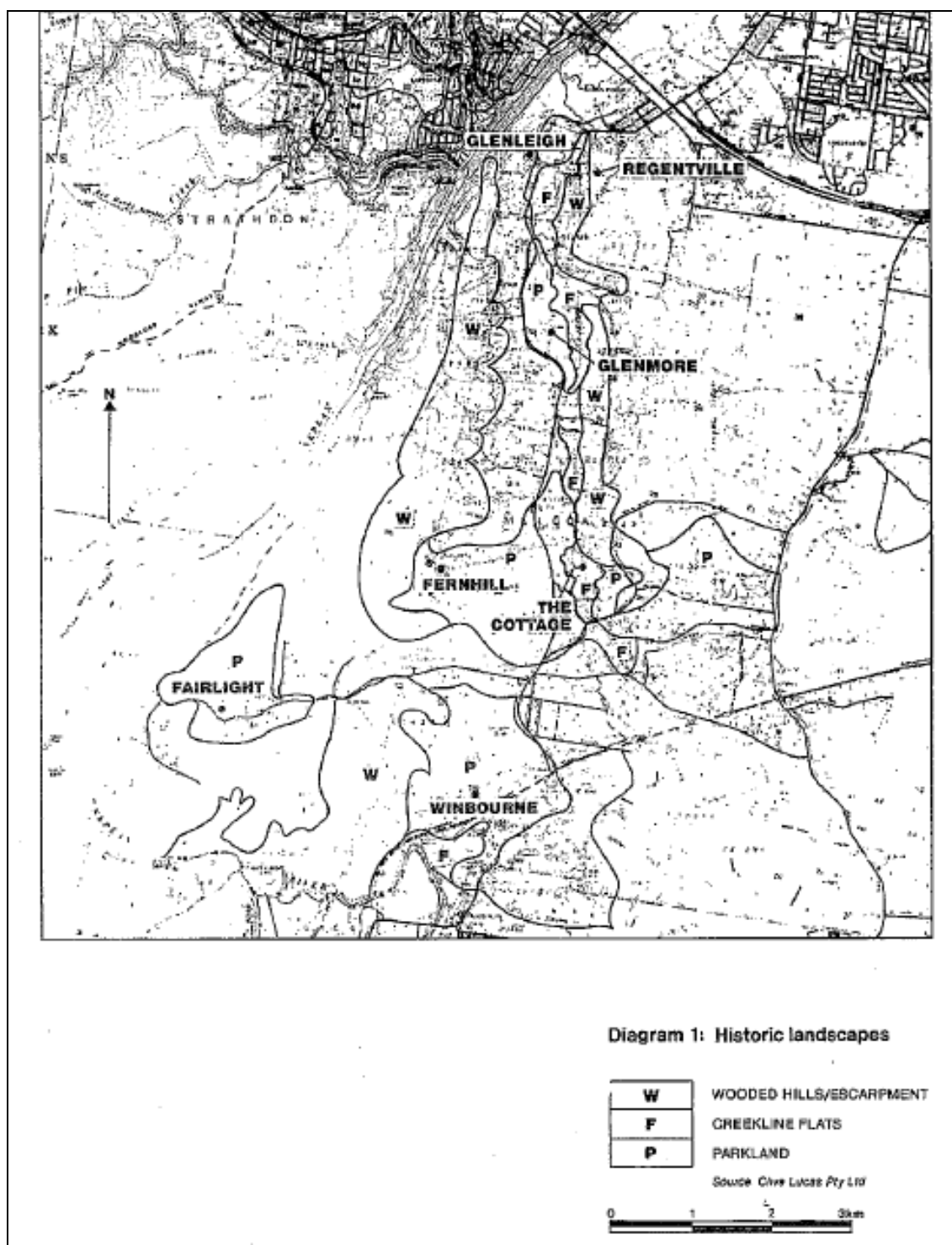
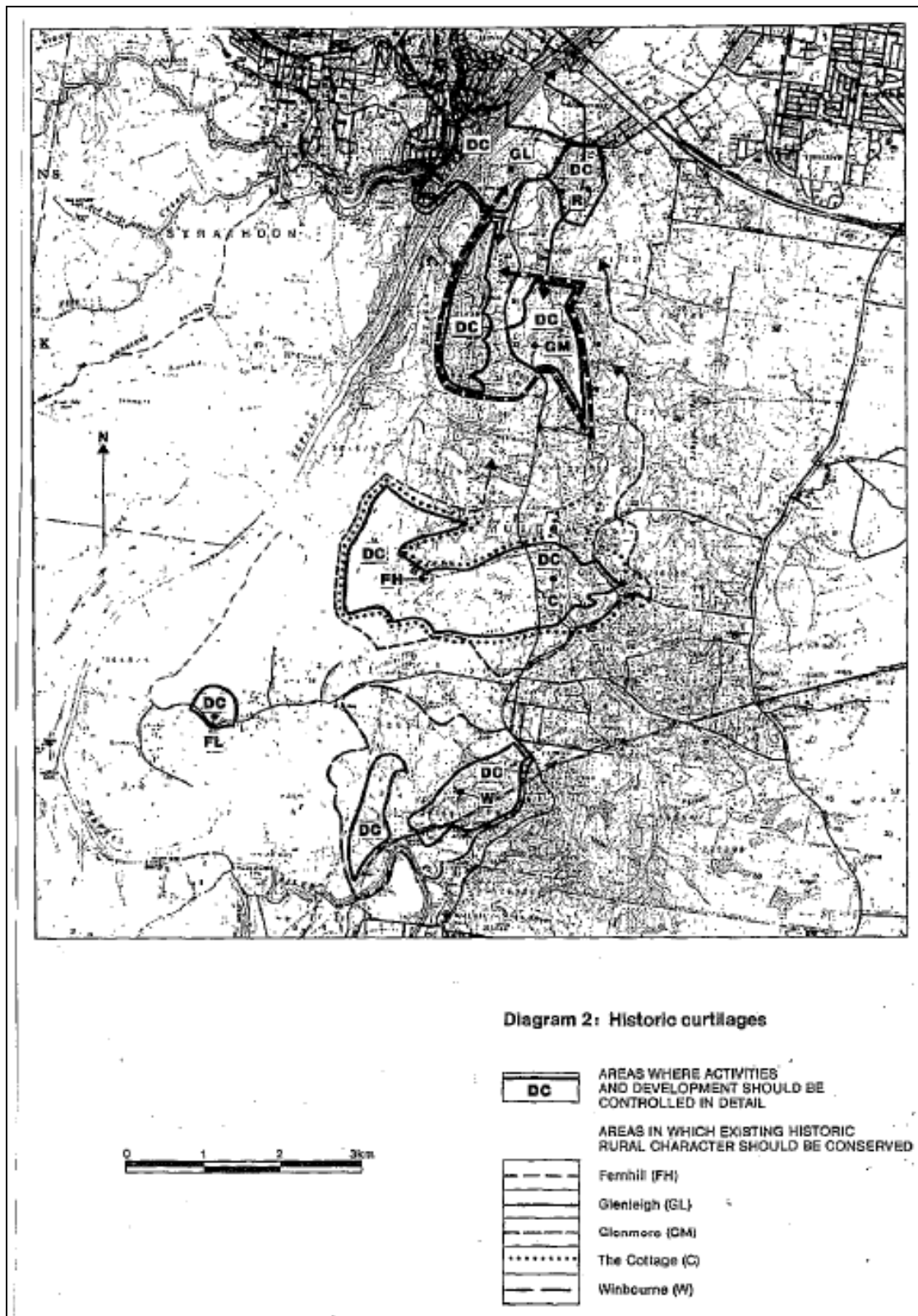


Figure E9.2: Historic curtilages



9.2 Other Controls

9.2.1 Mulgoa Road

A. Background

An important part of the Mulgoa Valley Precinct and appreciating its landscape is the drive along Mulgoa Road. Roadside vegetation, hills, gullies, bends and the changing views of heritage items and the landscape are the main attributes. This section seeks to ensure that Mulgoa Road and these attributes are protected.

B. Objectives

- a) To protect the present rural character and function of Mulgoa Road; and
- b) To ensure any new development does not impact on the safety and efficiency of Mulgoa Road.

C. Controls

- 1) Mulgoa Road shall be maintained as a rural road and shall not be improved to the level of a major regional thoroughfare.
- 2) Consent shall not be granted to development in the Mulgoa Valley Precinct if:
 - a) The safety and efficiency of Mulgoa Road will be adversely affected by the design and siting of the proposed access and by the nature, volume and frequency of vehicles using Mulgoa Road to gain access to the development; and
 - b) Any upgrading or strengthening of Mulgoa Road required to maintain its safety and efficiency detracts from the present rural character and function of Mulgoa Road.

9.3 Other Relevant Information

The following documents may assist applicants in addressing the controls for the Mulgoa Valley Precinct:

- Department of Environment and Planning 1984, Mulgoa Valley Regional Environmental Study
- Department of Environment and Planning 1987, Sydney Regional Environmental Plan No.13 – Mulgoa Valley – Parts I & II
- Penrith City Council 1999, Mulgoa and Wallacia Rural Villages Study.

Table of Contents

E10 ORCHARD HILLS	2
10.1 SITING AND BUILT FORM CONTROLS	3
10.1.1 SITING AND ORIENTATION OF DWELLINGS AND OUTBUILDINGS	3
10.1.2 BUILDING FORM, MATERIALS AND COLOURS	3
10.1.3 VEGETATION AND PLANTINGS	4
10.1.4 ACCESS, PARKING AND SERVICES	5
10.1.5 FENCES AND ENTRANCES	5
10.1.6 SIGNAGE	6
10.2 OTHER RELEVANT INFORMATION	6

E10 Orchard Hills

A. Background

Area included within the Orchard Hills Precinct

The Orchard Hills Precinct is bounded by The Northern Road to the west, Caddens Road to the north, the South Creek corridor to the east, and the Orchard Hills defence establishment to the south. The M4 Motorway and The Northern Road are the main transport corridors in the area. Orchard Hills is a key part of the transition between the urban and rural areas of Penrith when approaching along the M4 Motorway and The Northern Road. The extent of the land is shown on the LEP Clause Application Map with a notation 'Orchard Hills'.

Orchard Hills has a predominately rural character with undulating hills and scenic vistas. Historically, its landscape was mainly overlaid with orchards and grapevines, and with rural farmhouses and outbuildings. A prominent line of hills mostly with an east-west orientation defines the topography of the area.

Today, Orchard Hills retains a largely rural character predominantly used for rural living on 2 hectare lots. There are also a number of intensive agricultural uses in operation throughout the locality. A number of schools and churches are dispersed in the area north of the M4 Motorway.

B. General Objectives

- a) To ensure that development does not adversely affect the scenic qualities, character and amenity of this precinct;
- b) To promote the continuation of the open, semi-rural character and regionally significant landscape setting of Orchard Hills and minimise the visual impact of development from major roads and public places;
- c) To recognise that Orchard Hills forms part of an important entry to the residential areas of Penrith, and that careful management of development in this location is critical to conserving the values of this City entry;
- d) To ensure that development does not unreasonably increase the demand for public infrastructure and public services;
- e) To ensure that non-residential activities do not:
 - i) Alter the character or scenic quality of the locality;
 - ii) Detract from the existing landscape setting;
 - iii) Promote the commercialisation of lands adjoining The Northern Road; or
 - iv) Generate traffic volumes which cannot be readily accommodated within the existing road pattern, or which create a traffic safety problem.

10.1 Siting and built form controls

10.1.1 Siting and orientation of dwellings and outbuildings

A. Objectives

In addition to the general objectives for Orchard Hills, the objectives of this section are to ensure that buildings are positioned in a manner and location that will:

- a) protect and enhance the semi-rural landscape of Orchard Hills;
- b) minimise the visual impact of development from major roads and public places; and
- c) enhance the important City entry qualities of Orchard Hills.

B. Controls

- 1) All buildings shall be set back a minimum of 30m to The Northern Road boundary and a minimum of 15m from all other roads.
- 2) An additional building setback shall be provided on those lots fronting The Northern Road, where in the opinion of Council, the development of the land is likely to impact on the open, semi-rural character of the land when viewed from The Northern Road.
- 3) Buildings and other structures shall not intrude into the skyline when viewed from The Northern Road or the M4 Motorway.
- 4) Buildings are to be located on mid-slopes to avoid visual impact on ridges and to avoid the banks of watercourses.
- 5) Buildings are to minimise excavation, filling and high foundations by avoiding slopes greater than 1 in 6.
- 6) The longest façade of a building is to be parallel to the contours of the land.
- 7) Buildings should be positioned to maximise opportunities for solar access in winter, and minimise exposure to summer sun and winter winds.
- 8) Buildings and other structures should be located to retain, whenever possible, remnant indigenous vegetation, including trees, shrubs, understorey plants and ground covers.

10.1.2 Building form, materials and colours

A. Objectives

In addition to the general objectives for Orchard Hills, the objectives of this section are to:

- a) ensure building forms are in keeping with the setting and context of the precinct; and
- b) ensure building materials contribute to maintaining the semi-rural character of the Precinct.

B. Controls

- 1) Buildings are to be a maximum of two storeys in height.
- 2) Pitched roofs are preferable with a slope of between 30 and 45 degrees. Skillion roofs by themselves are to be avoided except as verandahs or for extensions.
- 3) Large elements, especially flat surfaces, are to be avoided. Building facades and roof lines are to be broken into small elements. Garden structures such as trellises and pergolas can assist in breaking up large elements.
- 4) Buildings are to be designed with a horizontal rather than vertical emphasis.
- 5) Exterior windows and doors are to have a vertical rather than a horizontal emphasis. Large unbroken glazed panels are to be avoided.
- 6) Building materials and colours are to be in keeping with their surroundings, and are to be derived from the local horticultural and natural landscape.

10.1.3 Vegetation and plantings

A. Objectives

In addition to the general objectives for Orchard Hills, the objective of this section is to provide controls to ensure the layout of gardens and plantings, and the selection of species reflects the traditional landscape character of Orchard Hills.

B. Controls

- 1) Development on land occupied by existing vegetation (including, although not limited to, remnant and regrowth tree stands, existing or abandoned orchards and vineyards) shall demonstrate, in the design and siting of buildings, parking, access and general improvements, that all measures have been taken to retain and supplement this vegetation.
- 2) Landscape design should be based upon the traditional forms, colours, scale, textures, relationships and groupings of plant species in Orchard Hills. This can also include other garden elements of fences, gateways, hedges, windbreaks, driveways, and landscape built elements.
- 3) When deciding what to plant, applicants should consider the existing landscape and environmental amenity of the area with reference to agricultural, horticultural and homestead plantings, and the manner in which they have been traditionally used in the Orchard Hills landscape setting.

10.1.4 Access, parking and services

A. Objectives

In addition to the general objectives for Orchard Hills, the objective of this section is to ensure the visual impact of access roads, parking areas and services is minimised.

B. Controls

- 1) Access from properties fronting The Northern Road shall only be permitted if it serves dwellings or domestic outbuildings.
- 2) Traffic generating developments must demonstrate that traffic volumes can be readily accommodated within the existing road pattern and do not create a traffic safety problem.
- 3) Driveways and access roads shall follow the contours of the land, as much as possible, and be no wider than is necessary to allow for safe and effective vehicle movements.
- 4) Driveways, access roads and hardstand areas shall be constructed of compacted gravel, or paved or sealed in a dark coloured material if located on steep slopes.
- 5) Large parking areas shall not be visible from public roads, and shall be separated from access roads and from the buildings they serve by planting and other landscaping.
- 6) Any lighting provided should not intrude into the rural setting. Lighting structures and the light cast shall be discreet.
- 7) Services should be appropriately located and screened by walls and vegetation to form part of a coherent group.

10.1.5 Fences and entrances

A. Objectives

In addition to the general objectives for Orchard Hills, the objective of this section is to ensure fences, gates and entrances are in harmony with the existing landscape and character of the Orchard Hills Precinct.

B. Controls

- 1) If practicable, avoid fences on road frontage boundaries.
- 2) Fences should be simple and unpretentious, and in keeping with traditional forms; e.g. unpainted timber post and rail, timber post and wire, or steel post and wire.
- 3) Masonry fences, such as brick, blockwork or stone, should be avoided.
- 4) Gates and entrances should also be simple and in keeping with traditional forms. The scale, form and bulk should not detract from the established street frontage. Examples are:

- a) Rendered and pointed brickwork, blockwork, sandstone, painted timber or post and rail;
 - b) Decorated gateposts with the property name carved or painted onto the gatepost or painted onto a wide timber top rail; and
 - c) Decorated iron, steel or timber gates.
- 5) Gates and entrances should relate to the materials and colours of the building to which they belong.

10.1.6 Signage

A. Objectives

In addition to the general objectives for Orchard Hills, the objective of this section is to ensure that signage is in harmony with the existing landscape and character of the Orchard Hills Precinct.

B. Controls

Any signage must be rural in character and must:

- 1) relate to the style, character and function of the building or activity it advertises;
- 2) only refer to the development on the land to which the sign is located;
- 3) not be illuminated;
- 4) not exceed 1.5m² in area, or a maximum height of 2m above ground level, or intrude in the sky line; and
- 5) not be freestanding, but related to walls, fences or buildings.

10.2 Other relevant information

The following documents may assist applicants in addressing the controls for the Orchard Hills Precinct:

- Penrith Heritage Study
- Penrith Rural Lands Study and Strategy.

Table of Contents

PART A PENRITH CITY CENTRE	2
11.1 PRELIMINARY	2
11.1.1 AREA INCLUDED WITHIN THE PENRITH CITY CENTRE	2
11.1.2 AIMS AND OBJECTIVES OF THIS SECTION	3
11.1.3 PENRITH CITY CENTRE PRECINCTS AND CHARACTER AREAS	3
11.2 BUILDING FORM	7
11.2.1 INTRODUCTION	7
11.2.2 BUILDING TO STREET ALIGNMENT AND STREET SETBACKS	8
11.2.3 STREET FRONTAGE HEIGHTS	11
11.2.4. BUILDING DEPTH AND BULK	16
11.2.5 BOUNDARY SETBACKS AND BUILDING SEPARATION	18
11.2.6 MIXED USE BUILDINGS	22
11.2.7 SITE COVER AND DEEP SOIL ZONES	23
11.2.8 LANDSCAPE DESIGN	24
11.2.9 PLANTING ON STRUCTURES	26
11.3 PEDESTRIAN AMENITY	27
11.3.1 PERMEABILITY	28
11.3.2 ACTIVE STREET FRONTAGES AND ADDRESS	31
11.3.3 AWNINGS	32
11.3.4 VEHICLE FOOTPATH CROSSINGS	34
11.3.5 PEDESTRIAN OVERPASSES AND UNDERPASSES	37
11.3.6 BUILDING EXTERIORS	37
11.4 ACCESS, PARKING AND SERVICING	39
11.4.1 PEDESTRIAN ACCESS AND MOBILITY	39
11.4.2 ON-SITE PARKING OPTIONS	40
11.4.3 SITE FACILITIES AND SERVICES	42
11.5 SUSTAINABLE DEVELOPMENT	44
11.5.1 REFLECTIVITY	44
11.5.2 MAXIMISING LIVEABILITY AND LONGEVITY	44
11.5.3 REDUCE RESOURCE CONSUMPTION	45
11.6 CONTROLS FOR RESIDENTIAL DEVELOPMENT	45
11.6.1 HOUSING CHOICE AND MIX	46
11.7 CONTROLS FOR SPECIAL AREAS	47
11.7.1 PRECINCT CONTROLS	47

Part A Penrith City Centre


11.1 Preliminary

11.1.1 Area included within the Penrith City Centre

This Section applies to development on land covered by the Penrith City Centre as shown in Figure E11.1. This part of the Section provides specific controls for the Penrith City Centre in addition to the general controls elsewhere in this DCP.

Figure E11.1 Penrith City Centre



 Area covered by Penrith City Centre

11.1.2 Aims and Objectives of this Section

The aim of this Section is to provide more detailed provisions for development in the Penrith Centre that will:

- a) contribute to the growth and character of Penrith
- b) deliver a balanced social, economic and environmental outcome; and
- c) protect and enhance the public domain.

The general objectives of this Section are:

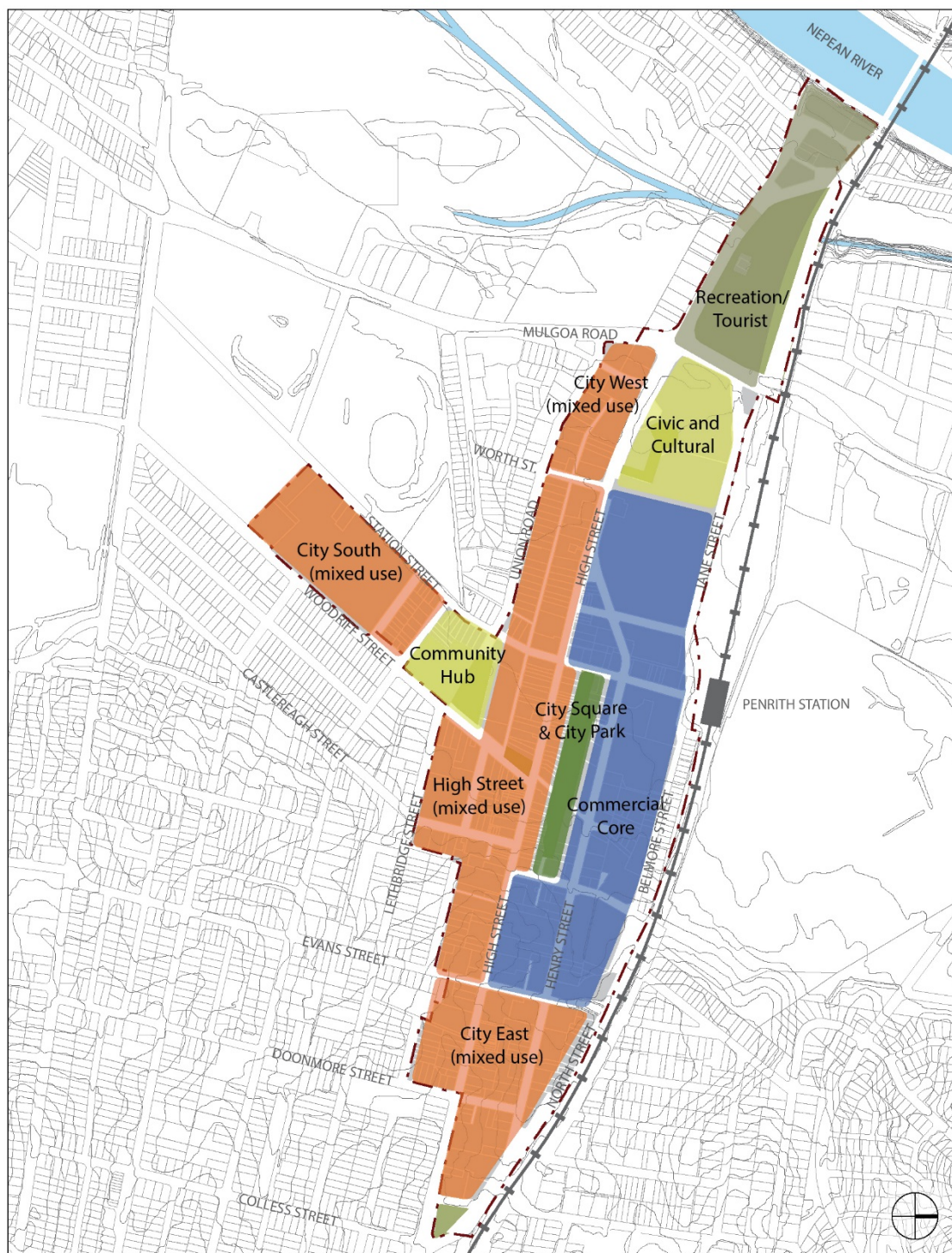
- a) To facilitate the revitalisation of Penrith City Centre by promoting redevelopment and urban sustainability;
- b) To promote high quality urban design and environmental sustainability in the planning, development and management of the City Centre;
- c) To provide for mixed use, commercial and residential development within the Town Centre which provides high levels of amenity for occupants;
- d) To provide high levels of accessibility within the City Centre, connecting significant activity nodes, public open space and surrounding residential areas;
- e) To encourage development within Penrith City Centre that gives primacy to the public domain and creates an attractive and vibrant centre;
- f) To encourage integration of the residential and non-residential land uses and improved access to transport facilities;
- g) To achieve an attractive and sustainable Penrith City Centre; and
- h) To ensure that development in the Penrith City Centre is consistent with the desired future character of each precinct as described in the following section.

11.1.3 Penrith City Centre Precincts and Character areas

The Penrith City Centre developed along a section of The Great Western Highway that was also the transport stop on The Great Western Rail Line. Its reliance on transport links for its development is evident in its elongated, east-west pattern. The City Centre has a distinctive heart in High Street.

There are eight precincts in the Penrith City Centre, all comprising their own distinct characteristics and is illustrated in Figure E11.2. The intended character of these precincts is identified below and will be used to inform and guide future development.

Figure E11.2 Penrith City Centre Character Areas



1. High Street Mixed Use

High Street is the historic heart of Penrith and is the focus of the City Centre activities with its central spine of 2.5km that is segmented into sub-precincts. The street has many low-rise, small scale retail shops, and a concentration of civic and cultural functions.

High Street is a focus of pedestrian activities with its wider, covered footpath areas which already encourage alfresco dining. The street will continue to be the hub for pedestrian street life in the City Centre, accompanied by central city 'greening'. Mixed use developments will encourage a diversity of uses locating in the centre to further activate the street, whilst the residential development aligning the southern edge of the street will engage pedestrian activities into the city centre.

Views of the Blue Mountains escarpment are available along sections of High Street, particularly the eastern half of High Street up to mid-block past Station Street, and should be retained at street level.

This precinct offers the new City Park and City Square, which will be located in what is currently the Allen Place parking area. These public space areas are intended to be a series of linked areas, each expressing its own character to entice residents and workers to visit and enjoy these spaces. The City Park and City Square will be connected to High Street and surrounding streets via laneways and arcades.

The buildings surrounding City Park and City Square will need to have active street frontages and uses fronting these public spaces. Memory Park, located at the corner of High Street and Woodriff Street, is a significant public space in the City Centre that needs to be preserved. It is at this space where ANZAC Day remembrance ceremonies are celebrated.

The concentration of public spaces in this precinct means that development will need to address any potential impacts on these spaces as buildings get higher.

Tree-lined streets provide shade to pedestrians. Other public domain improvements are proposed in the precinct such as continuing the awnings along the street frontage, high quality paving, street furniture and pedestrian lighting.

2. Commercial Core

This area is the 'gateway' to Penrith on arrival by rail, and given this status, needs to be a focus for the highest quality developments.

The Commercial Core precinct is dominated by the Westfield Penrith (Penrith Plaza) shopping centre. The interface of the shopping centre with the city and the 'street life' activity along High and Station Streets needs to be strengthened.

The eastern side of Station Street contains a mixture of commercial uses with some fringe retail and car parking. Council has significant land assets in this area. The TAFE College brings student life and activity into the area, and its presence should be strengthened. The government office development consolidates State Government activities in one building, opposite the station. This area, close to the station, has the potential to significantly intensify as a location for high quality commercial development, supported by some ground level retail.

This precinct will form the northern boundary of the new City Square and City Park. Both public spaces will be located in what is currently the Allen Place parking area, and are intended to be a haven for workers and residents in the City Centre. It is envisaged that the City Square and City Park will become the focus of City activities.

3. City East / Mixed Use

This is the eastern gateway into the city centre area and should be enhanced.

The area east of Evans Street currently contains a mix of fringe retail and residential development. It can develop in the future as a mixed use precinct with a village character of its own, including mixed use buildings containing retail, commercial and residential uses and a small retail hub with emphasis on access and walkability. It is envisaged for this area to develop a live-work character.

High rise commercial development should be restricted in this area to minimise leakage from the Commercial Core area. Links through this area to Nepean Hospital need to be protected and strengthened.

4. City South / Mixed Use

This area comprises the single storey Nepean Village shopping centre, surrounded by a large surface car park. It enjoys street frontages aligning its eastern and western boundaries that provide very distinct characteristics either side. Immediately adjoining the southern boundary is a former industrial property that will be redeveloped into a high density residential precinct.

It is envisaged this area will redevelop into a mixed use precinct with its own identity with clear connections to and synergies with the adjoining high density residential precinct and act as the shopping and service hub for the surrounding and intensifying residential area. There needs to be further emphasis on the land uses and activities located at, as well as the design and utility of urban spaces at the common boundary with that precinct. Future development should reduce the impact of surface car parks on local streets.

Its redevelopment opportunities will need to consider the interface with different environments aligning its boundaries, being residential (to its east) and sporting facilities (in the west).

The precinct can be redeveloped as a mixed use precinct with its own identity through better connectivity to the city centre at the northern end.

5. City West (Mixed Use)

The precinct comprises the southern side of High Street, between Worth Street and the intersection to Mulgoa Road. This area is presently underdeveloped, with a number of apartment buildings having been approved or under construction immediately behind High Street.

This area should be redeveloped, primarily as a high density residential precinct that will complement and bring additional activity to the adjoining civic and cultural precinct. It is envisaged that this area develop a live-work environment, which is promoted through the design and layout of residential buildings, and the location of compatible commercial and retail uses at the street level of such buildings.

This precinct currently enjoys unobstructed views of the Blue Mountains escarpment. It is acknowledged that redevelopment will result in loss of such views however, where view corridors can be reasonably maintained from High Street, then the views should be retained.

There is an opportunity to locate an urban space in this precinct that affords an “eat street” environment with connection to the adjoining civic and cultural precinct.

6. Civic and Cultural Precinct

Penrith's Civic Centre, comprising the council's offices and library, as well as the Joan Sutherland Performing Arts Centre comprise the civic and cultural precinct. It is located at the north-eastern corner of the High Street and Mulgoa Road intersection, enjoying unobstructed views of the Blue Mountains escarpment.

The precinct contains green public spaces which can be redeveloped to enliven this precinct, making it attractive and vibrant after hours.

7. Community Hub

A number of community facilities are already sited in the city centre and there is an opportunity to amalgamate these facilities in a central precinct at the heart of the city centre, between Station Street and Woodriff Street. There is opportunity to enhance the existing public space with landscaped and shaded spaces for community groups to meet and gather.

Its central location is ideal in ensuring that the precinct is easily accessible from adjoining residential areas, and greatly enhances the precinct's focus for community functions.

8. Recreation / Tourist

The precinct between the Nepean River and the Commercial Core is critical to creating Penrith as a true river city. The sports facilities at Woodriff Gardens and the rowing club along the river provide recreation opportunities for the local residents and workers. The area has low scale development, with some tourist facilities already located along the river (such as a hotel and function centre).

Creating a recreational link between the city centre and the river is a priority in this area. The landscape extension of High Street to the riverfront will be the priority to reconnect the city with the river and to create attractive and legible pedestrian links.

There is a potential to improve pedestrian and cycle connections across the river in this area. Opportunities for outdoor restaurants and cafes along the river should be examined, with the riverfront being landscaped as links to the Great River Walk are established, and improved pedestrian/ cycle paths provide 'bridge to bridge' recreational opportunities.

11.2 Building Form

11.2.1 Introduction

Building form and character refers to the individual elements of building design that collectively contribute to the character and appearance of the built environment.

The development provisions in this Section of the DCP are intended to encourage high quality design for buildings in the Penrith City Centre, balancing the character of Penrith with innovation and creativity. The resulting built form and character of development should contribute to an attractive public domain in central Penrith and produce a desirable setting for its intended uses.

The controls in this section aim to:

- a) Establish the scale, dimensions, form and separation of buildings appropriate for the setting in the city centre.
- b) Achieve an attractive and sustainable Penrith city form within the City Centre context.
- c) Provide a strong definition of the public domain. Achieve active street frontages with good physical and visual connections between buildings and the street.
- d) Ensure there is consistency in the main street frontages of buildings having a common alignment to improve accessibility.
- e) Provide for pedestrian comfort and protection from weather conditions.

- f) Define the public street to provide spaces that are clear in terms of public accessibility and safety, and are easy to maintain. Ensure building depth and bulk is appropriate to the environmental setting and landform by providing for view sharing and good internal building amenity.
- g) Ensure building separation is adequate to protect amenity, daylight penetration and privacy between adjoining developments.
- h) Encourage mixed use development with residential components that achieve active street fronts and maintain good residential amenity.
- i) Achieve an articulation and finish of building exteriors that contribute to a high quality of design excellence.
- j) Provide for high quality landscape to contribute to the amenity of the City Centre and a sustainable urban environment.
- k) Maintain and enhance important views from the City Centre to surrounding natural landscape features.
- l) Contribute to the legibility of the City.
- m) Ensure that buildings are responsive to the character and heritage values of the Penrith City Centre.

11.2.2 Building to Street Alignment and Street Setbacks

A. Background

Street setbacks and building alignments establish the front building line. They help to create the proportions of the street and can contribute to the public domain by enhancing streetscape character and continuity of street facades.

Street setbacks can also be used to enhance the setting and address for the building. They provide for landscape areas, entries to ground floor apartments and deep soil zones.

Buildings should be built up to the street alignment to reinforce the urban character and improve pedestrian accessibility, amenity and activity at street level. Above street frontage height, buildings are to be set back to provide sunlight access to streets, pedestrian areas and lower levels of other buildings. These setbacks offer comfortable wind conditions, view corridors, an appropriate building scale for pedestrians, and good growing conditions for street trees.

Towards the edges of the city centre, buildings are setback to provide amenity in predominantly residential areas, including entries to ground floor apartments, landscaping and deep soil zones.

B. Objectives

- a) To establish consistent building alignments to the street.
- b) To provide street setbacks appropriate to building function and character.
- c) To establish the desired spatial proportions of the street and define the street edge.
- d) To create a transition between public and private space.
- e) To locate active uses, such as shopfronts, closer to pedestrian activity areas.

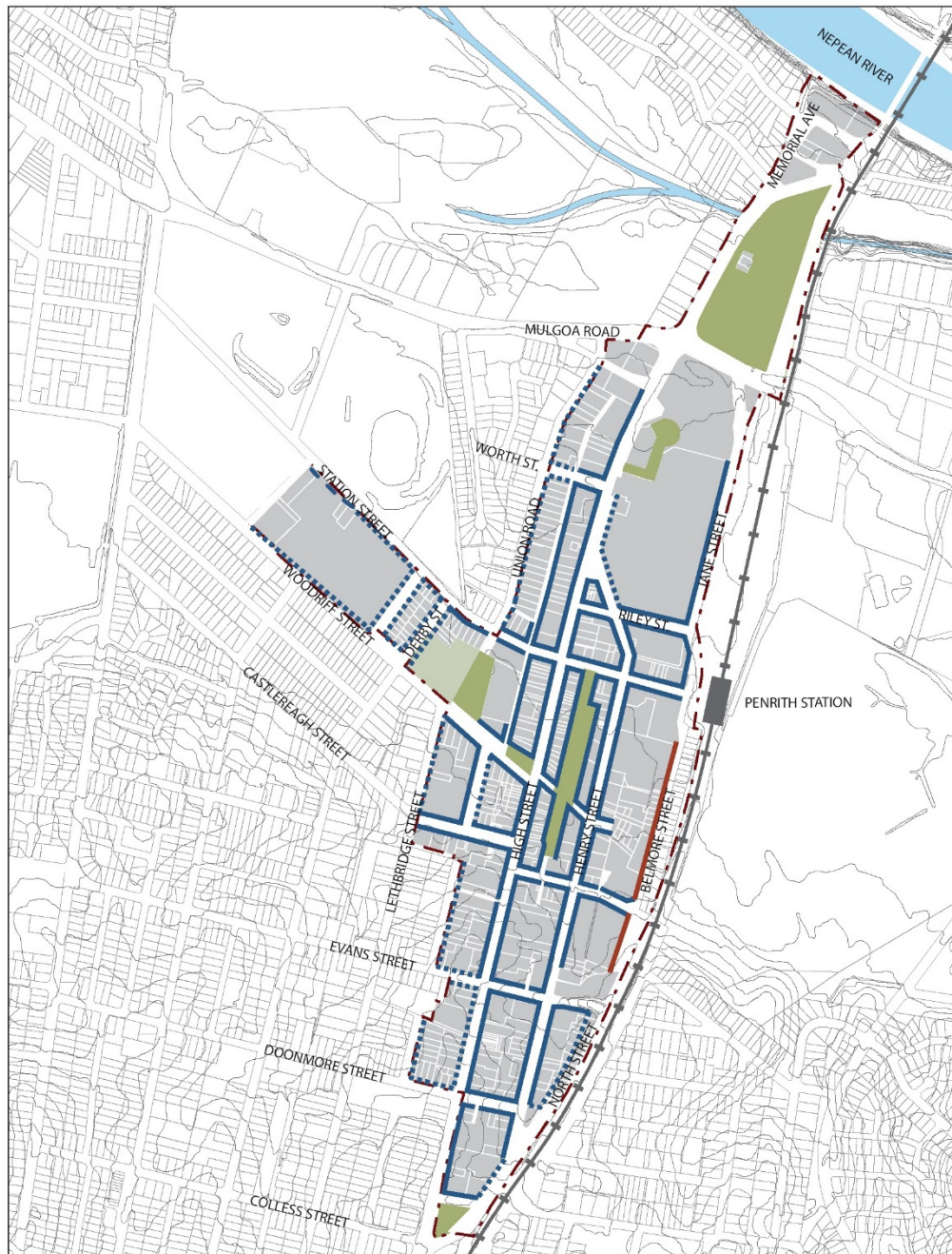
- f) To allow for street landscape character, where appropriate.
- g) To maintain sun access to the public domain.
- h) To protect important views to the Blue Mountains escarpment.

C. Controls

The controls for building form are as follows:

- 1) Street building alignment and street setbacks are specified in Figure E11.3.
- 2) Balconies may project up to 600mm into front building setbacks, provided the cumulative width of all balconies at that particular level totals no more than 50% of the horizontal width of the building façade, measured at that level.
- 3) Minor projections into front building lines and setbacks for sun shading devices, entry awnings and cornices are permissible.
- 4) Notwithstanding the setback controls, where development must be built to the street alignment (as identified in Figure E11.3) it must also be built to the side boundaries (0m setback) where fronting the street. The minimum height of development built to the side boundary must comply with the minimum street frontage height requirement.
- 5) Buildings along High Street must demonstrate that views to the Blue Mountains escarpment are maintained through the provision of perspectives.

Figure E11.3 Front Setbacks



- Built to street alignment
- 2.0 - 3.0 m average front setback
- 5.0 m minimum front setback
- 12.0 m minimum setback

11.2.3 Street Frontage Heights

A. Background

Well framed streets are an important characteristic of a City Centre. It is important that buildings within Penrith City Centre contribute to a strong definition of the street and public domain and reflect the City's status as a Regional City, and the function and character of different parts of the City.

The desired street frontage heights are specified in this section to ensure a sense of street enclosure that is appropriate to Penrith's natural setting and status as a regional city.

Street frontage heights refer to the height of the building at the street alignment and directly address the public street. Street sections specify required street frontage height and setbacks for development above street frontage height.

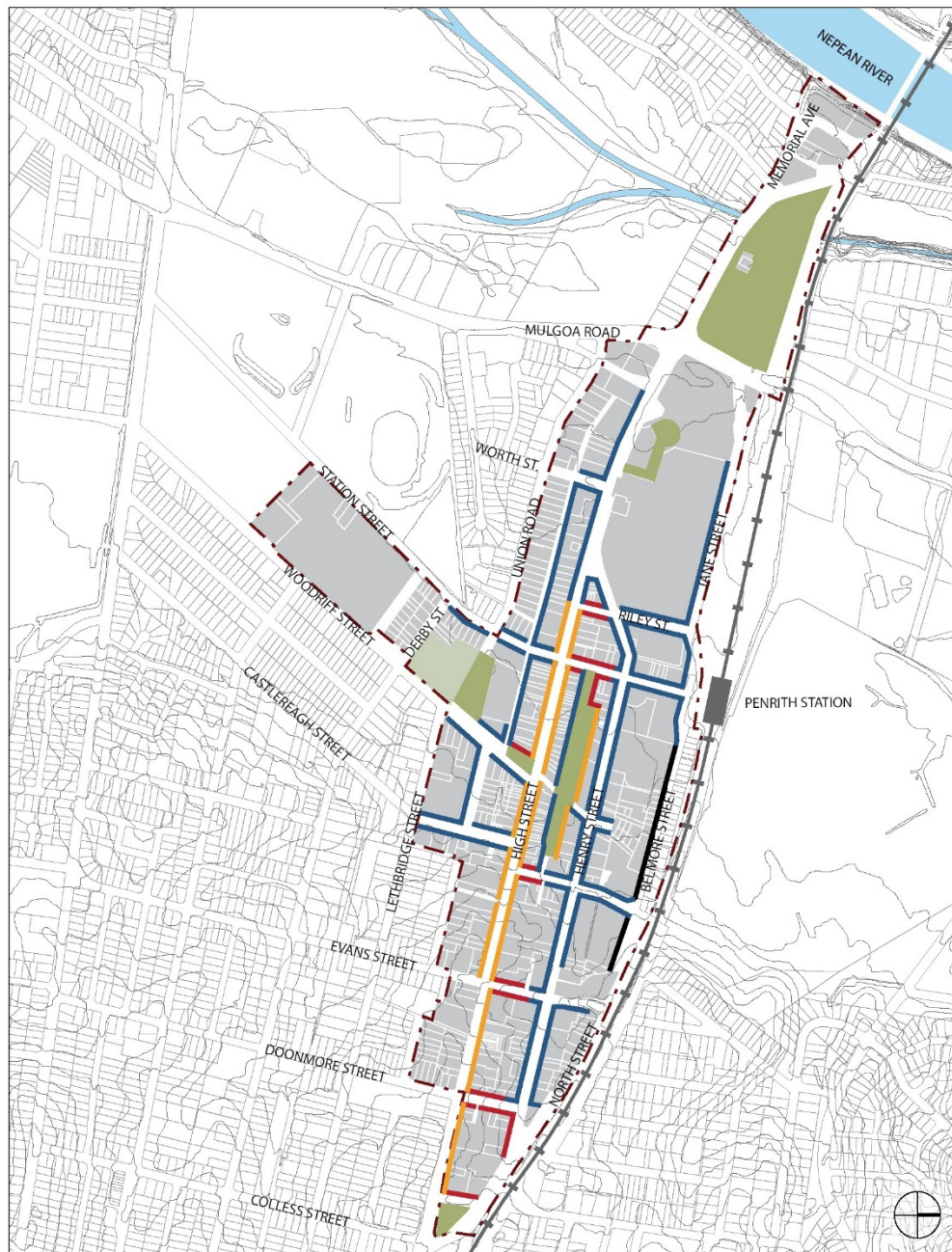
B. Objectives

- a) To provide consistent streetscapes through control of the built form visible from the public domain.
- b) To achieve comfortable street environments for pedestrians in terms of daylight, scale, sense of enclosure and wind mitigation as well as healthy environments for street trees.
- c) To allow sunlight access to new and existing significant public spaces in the city centre.
- d) To provide for an appropriate transition in building heights from key public spaces.
- e) To provide well sealed enclosure to the significant public spaces.
- f) To protect important views to the Blue Mountains escarpment.

C. Controls

- 1) Buildings must comply with the relevant street frontage heights as shown in Figure E11.4 and illustrated in Figures E11.5 to E11.10.
- 2) Development of land in the vicinity of Allen Place, Memory Park and Judges Park the development must demonstrate that it does not adversely overshadow the adjoining public places.

Figure E11.4 Street Frontage Heights









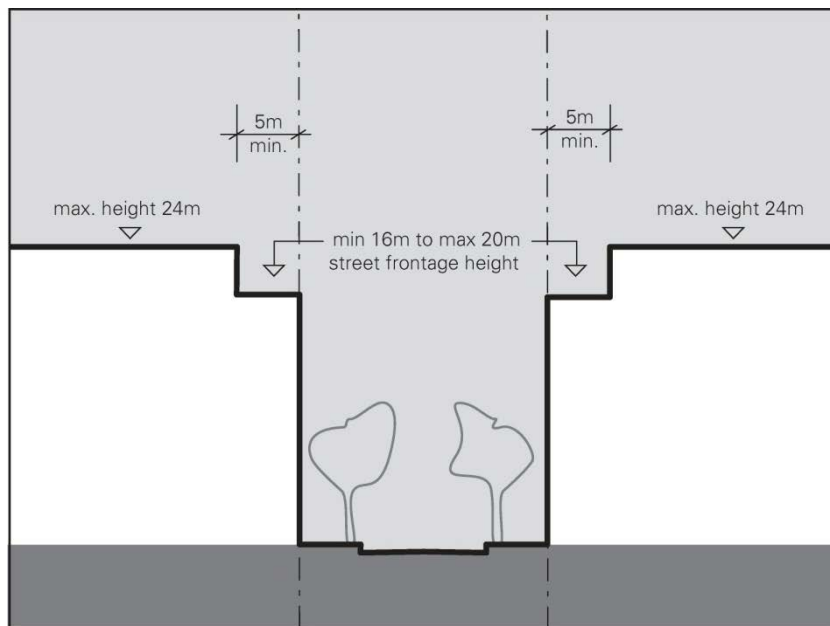
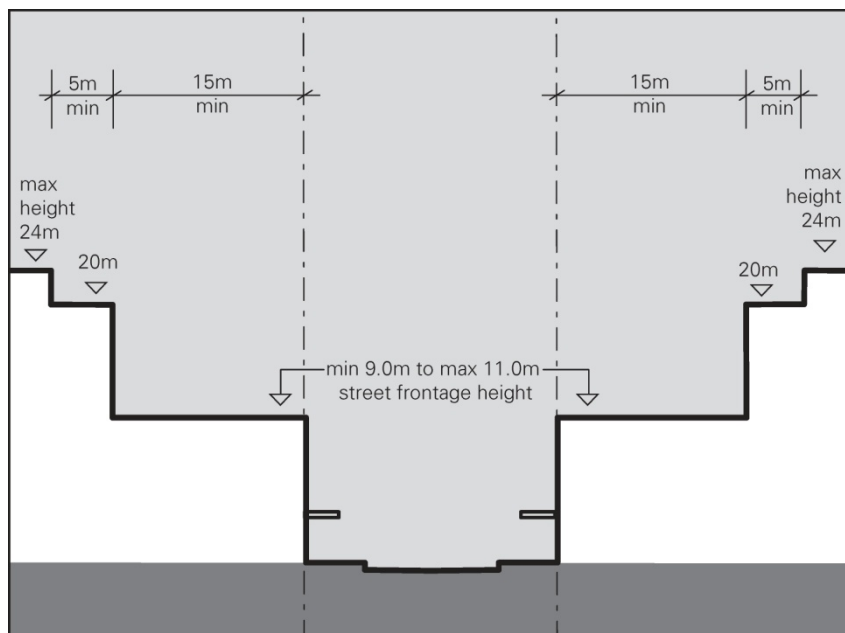
-  Street frontage height A applies - refer to figure E11.5
-  Street frontage height B applies - refer to figure E11.6
-  Street frontage height C applies - refer to figure E11.7
-  Street section D applies - refer to figure E11.8
-  Special section through Allen Place - refer to figure E11.9
-  Front setback applies as specific in figure E11.3

Figure E11.5: Street Frontage Height Type A



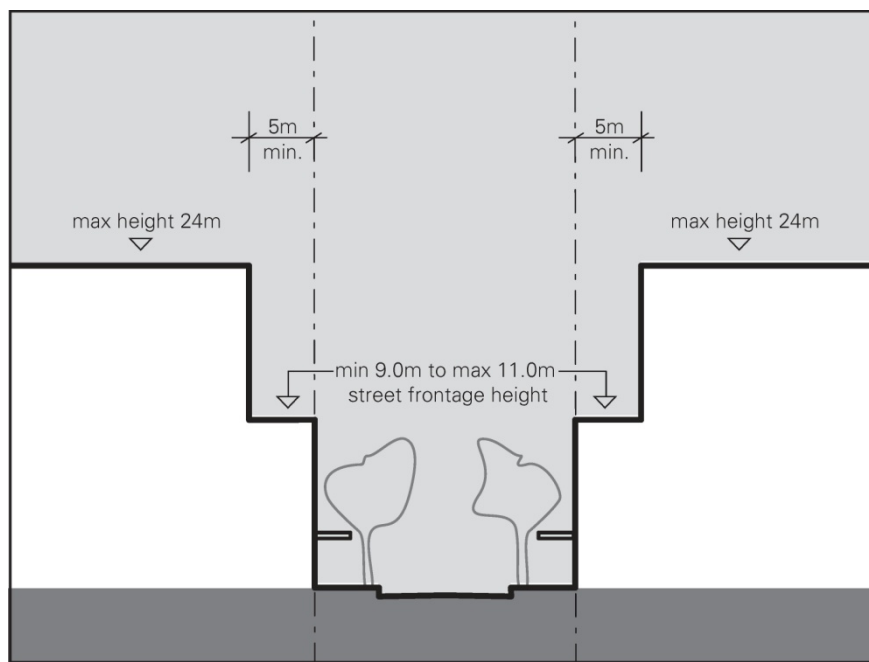
STREET FRONTAGE HEIGHT TYPE A

Figure E11.6: Street Frontage Height Type B



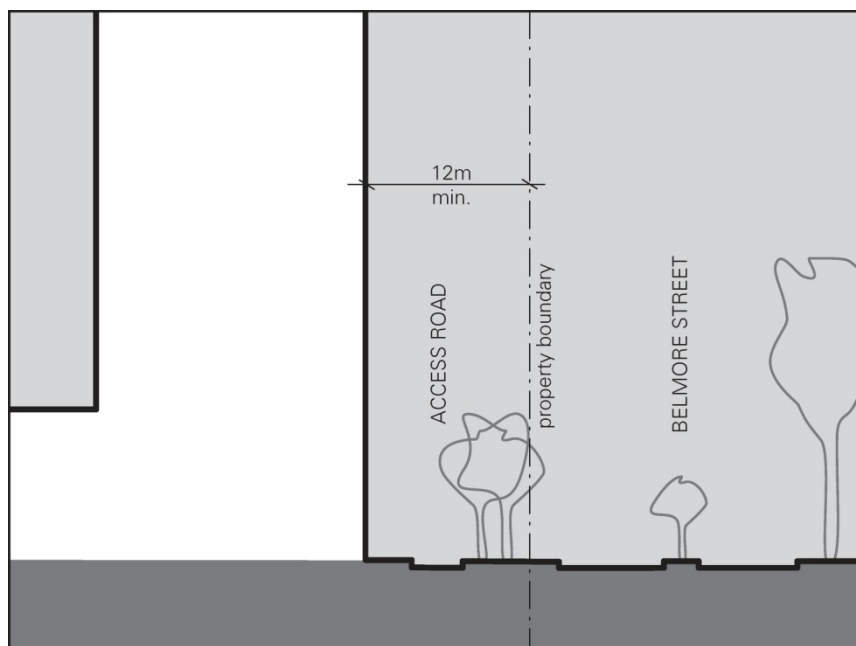
STREET FRONTAGE HEIGHT TYPE B

Figure E11.7: Street Frontage Height Type C



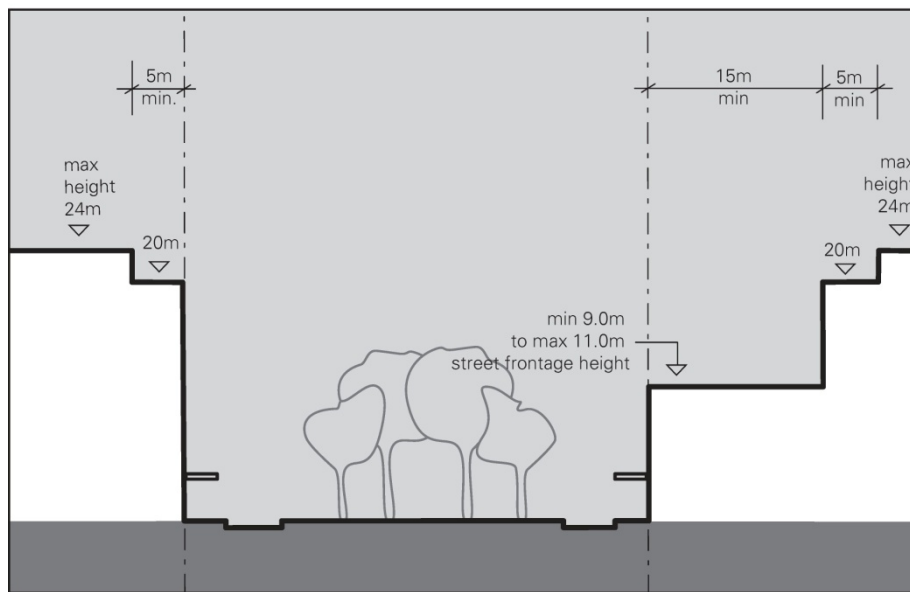
STREET FRONTAGE HEIGHT TYPE C

Figure E11.8: Street Frontage Height Type D



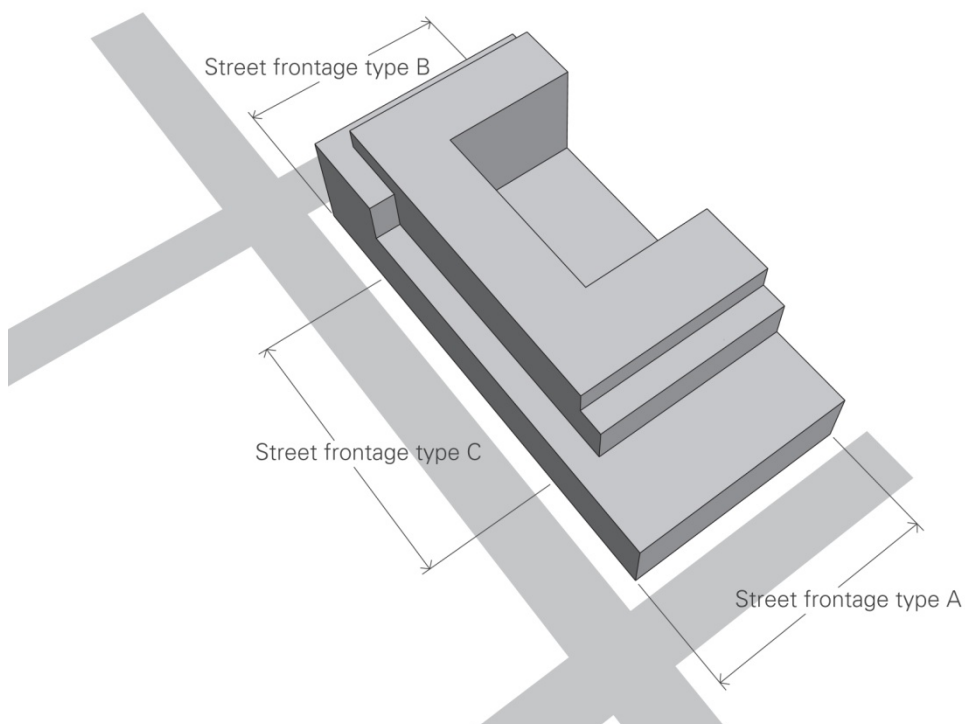
STREET SECTION TYPE D

Figure E11.9: Section through Allen Place (looking west)



SECTION THROUGH ALLEN PLACE
(looking west)

Figure E11.10: Example of possible transition between lower street frontage (Type A) to higher street frontage height (Type B) with the use of street frontage Type C



11.2.4. Building Depth and Bulk

A. Background

Controlling the size of upper level floor plates of taller buildings allows for good internal amenity, access to natural light and ventilation and reduces potential adverse effects that tall and bulky buildings may have on the public domain.

Building depth is related to building use. Typically, mixed use buildings have larger commercial floor plates combined with smaller residential floors.

B. Objectives

- a) To promote the design and development of sustainable buildings.
- b) To achieve the development of living and working environments with good internal amenity and minimise the need for artificial heating, cooling and lighting.
- c) To provide viable and useable commercial floor space.
- d) To achieve usable and pleasant streets and public domain at ground level. To achieve a city skyline sympathetic to the topography and context.
- e) To allow for view sharing and view corridors.
- f) To reduce the apparent bulk and scale of buildings by breaking up expanses of building wall with modulation of form.

C. Controls

- 1) The maximum floorplate sizes and depth of buildings are specified in the table below (also refer to Figure E11.11).
- 2) Notwithstanding the above, no building above 24m in height is to have a building length in excess of 50m.
- 3) All points of an office floor should be no more than 10m from a source of daylight (e.g. window, atria, or light wells) in buildings less than 24m in height, and no more than 12.5m from a window in buildings over 24m in height.
- 4) Use atria, light wells and courtyards to improve internal building amenity and achieve cross ventilation and/or stack effect ventilation. (Refer to figures E11.12 and E11.13)

The controls for building depth and height are outlined in Table E11.1.

Table E11.1: Controls for building depth and height

Land Use	Building Use	Condition	Maximum Floorplate	Maximum Building Depth (excludes balconies)
Commercial Core	All	Above 24m height	1,200m ²	25m
Mixed Use	Non Residential	Above 20m height	900m ²	20m

Land Use	Building Use	Condition	Maximum Floorplate	Maximum Building Depth (excludes balconies)
	Residential	Above 20m height	750m ²	18m
All other zones	All	Above 12m height	750m ²	18m

Figure E11.11: In the Commercial Core, the floor plates of commercial buildings above 24m are limited to 1,200m²

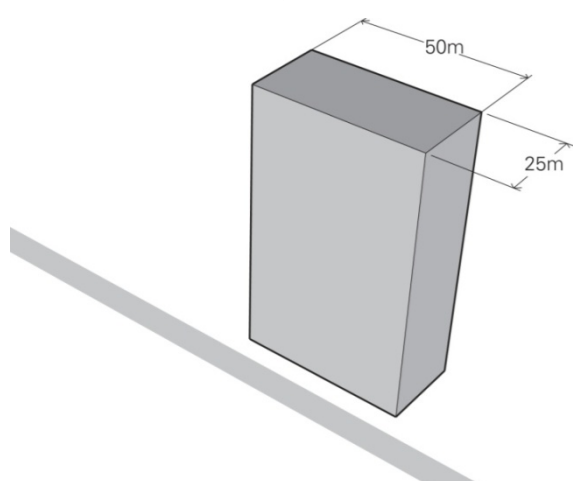


Figure E11.12: Atria type buildings allow good light penetration and ventilation, and can provide large flexible building floor plates

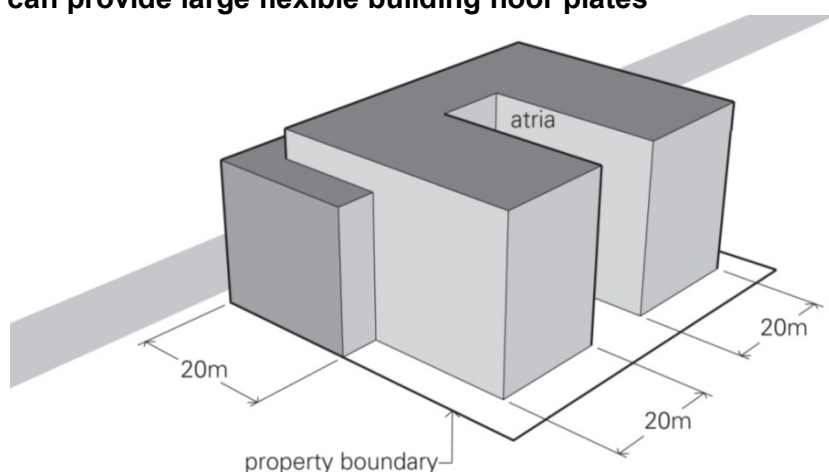
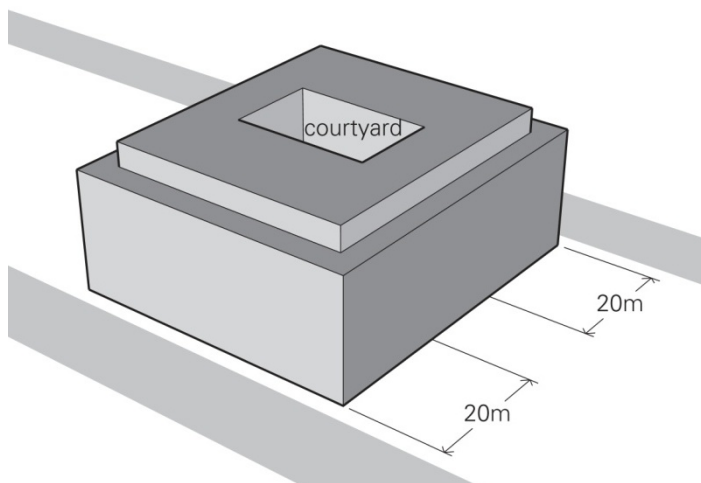


Figure E11.13: Courtyard type buildings allow good light penetration and well suited to sites with two street frontages



11.2.5 Boundary Setbacks and Building Separation

A. Background

Setbacks allow ventilation, daylight access and view sharing and increase privacy. In residential buildings and serviced apartments, separation between windows on side and rear facades and other buildings is particularly important for privacy, acoustic amenity and view sharing.

For commercial buildings, separation distances are smaller due to reduced requirement for visual and acoustic privacy.

Separation for mixed use buildings containing residential and commercial uses is to be in accordance with specified distances for each component use.

B. Objectives

- a) To ensure an appropriate level of amenity for building occupants in terms of daylight access, outlook, view sharing, ventilation, wind mitigation, and privacy.
- b) To achieve usable and pleasant streets and public domain areas in terms of wind mitigation and daylight access.

C. Controls

- 1) The minimum building setbacks from the side and rear property boundaries are specified in Table E11.2 and illustrated in figures E11.14 to E11.16.
- 2) Notwithstanding the setback controls, where development must be built to the street alignment (as identified in figure E11.3) it must also be built to the side boundaries (0m setback) in the vicinity of the street.
- 3) Where 0m side and rear boundary setbacks are permissible, and where it can be demonstrated that 0m setbacks cannot be achieved, Council may consider buildings that are setback from the boundary providing they are setback at least 5m to provide amenity in terms of day light access, useable outdoor space and landscaping. (Refer to figures E11.14 or E11.15)

- 4) If the specified setback distances cannot be achieved when an existing building is being refurbished or converted to another use, appropriate visual privacy levels are to be achieved through other means.

Table E11.2: Minimum side and rear setback distance from property boundary

Zone	Building Height and Use	Minimum Setback
Commercial Core	Up to a height of 20m	0m
	Above 20m	5m
	Above 24m	12m
Mixed Use	Non-Residential Uses	
	– Up to 20m	0m
	– Above 20m	5m
	– Above 24m	9m
	Residential uses up to 12m height:	
	– Non-habitable rooms	3m
	– Habitable rooms	6m
	Residential uses up to 24m height:	
	– Non-habitable rooms	4.5m
	– Habitable rooms	9m
	Residential uses above 24m height:	
	– Non-habitable rooms	6m
	– Habitable rooms	12m
All other zones	Non-residential uses:	
	– Up to 12m	3m
	– Above 12m	6m
	Residential uses up to 12m height:	
	– Non-habitable rooms	3m
	– Habitable rooms	6m

Zone	Building Height and Use	Minimum Setback
	Residential uses above 24m height:	
	– Non-habitable rooms	6m
	– Habitable rooms	12m

Figure E11.14: Minimum side and rear setbacks in the Commercial Core. Generally prefer lower levels to be built to the boundary or set back at least 5m.

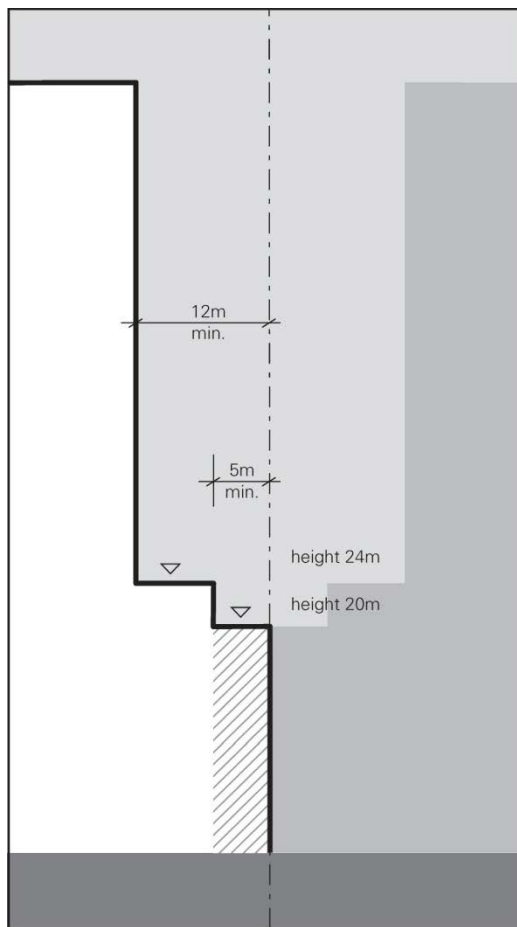


Figure E11.15: Minimum side and rear setbacks for non-residential development in the Mixed Use zone. Generally prefer lower levels to be built to be built to the boundary or set back at least 5m.

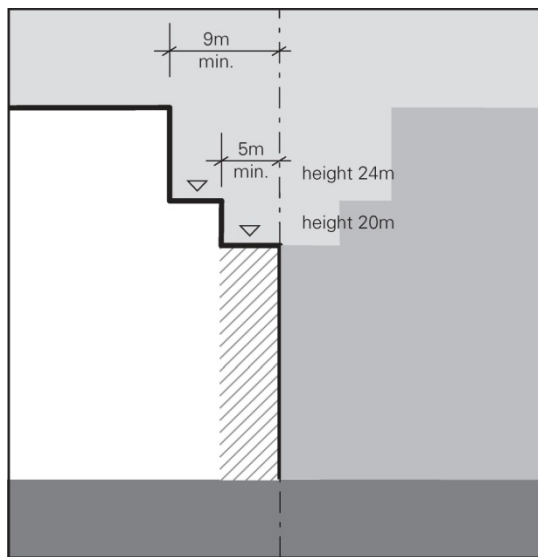
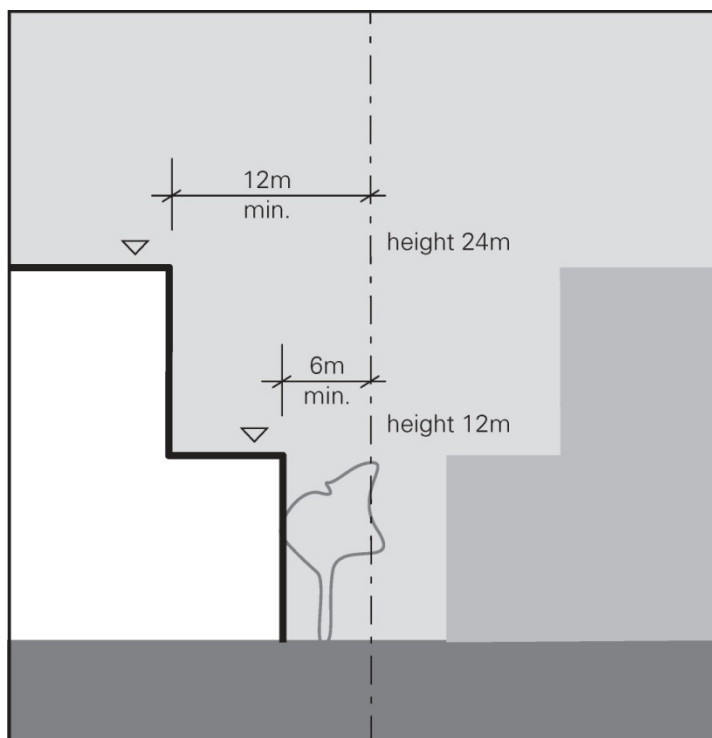


Figure E11.16: Minimum side and rear setbacks for habitable rooms of residential development in the Mixed Use zone.



11.2.6 Mixed Use Buildings

A. Background

Typically, different land uses and activities that are permitted in the same zone may be located in the same building and known as “mixed use developments”.

Mixed-use developments provide a variety of uses and activities within city centres, encouraging use of the City outside the working day, adding vibrancy and life to the city streets. Different uses within the same building are best located to a pattern and layout suitable to the mix of uses, with retail and business activity at ground level to assist street activation, and residential uses, requiring privacy and noise mitigation, located above street level.

Mixed use development within the City Centre is supported in sustainable locations, close to transport nodes, city parks and recreational areas and along central pedestrian locations.

B. Objectives

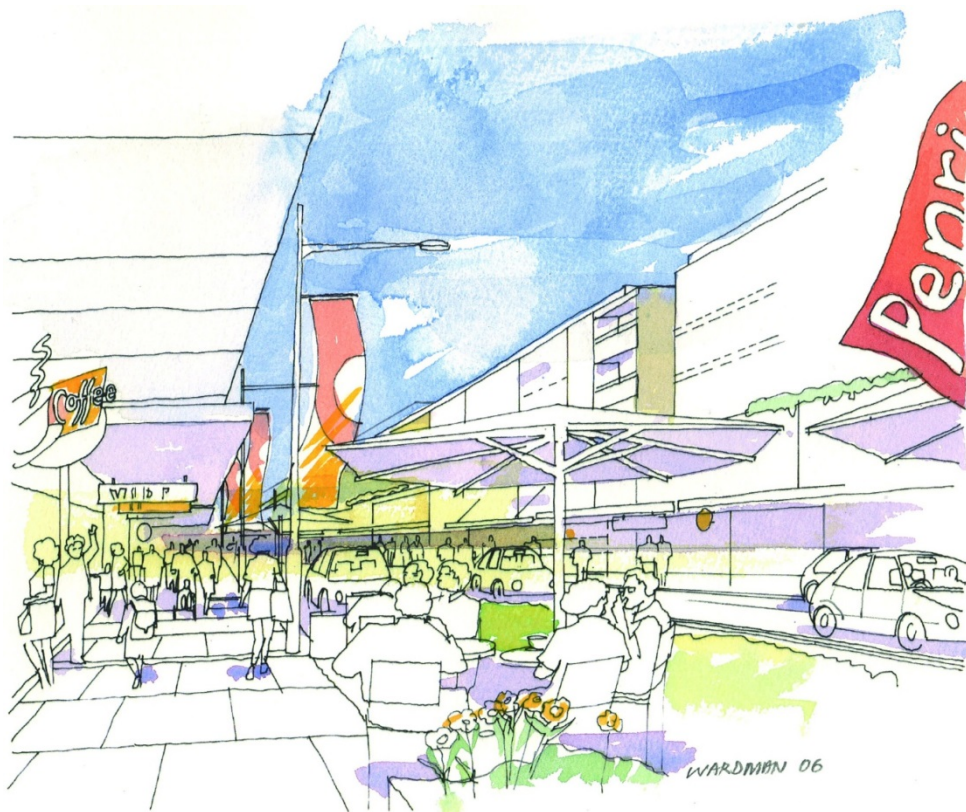
- a) To encourage a variety of mixed-use developments in the City Centre.
- b) To create lively streets and public spaces in the City Centre.
- c) To increase the diversity and range of shopping and recreational activities for workers, residents and visitors.
- d) To enhance public safety by increasing activity in the public domain on week nights and on weekends.
- e) To minimise potential conflicts and achieve compatibility between different uses.
- f) To minimise conflicts between permitted land use and heritage buildings.
- g) To ensure that the design of mixed-use buildings addresses residential amenity.
- h) To create legible and safe access and circulation in mixed use buildings.
- i) To ensure that mixed use buildings address the public domain and the street.

C. Controls

- 1) Provide flexible building layouts which allow greater adaptability of the floor area of, or tenancies on, the first floor of a building above the ground floor.
- 2) Ground floor of all mixed-use buildings is to have a minimum floor to ceiling height of 3.6m in order to provide for flexibility of future use. Above ground level, minimum floor to ceiling heights are 3.3m for commercial office, 3.6m for active public uses, such as retail and restaurants, and 2.7m for residential.
- 3) The commercial and residential activities of the building are to have separate service provision, such as loading docks, from residential access, servicing needs and primary outlook.
- 4) Locate clearly demarcated residential entries directly from the public street. Clearly separate and distinguish commercial and residential entries and vertical circulation.
- 5) Provide security access controls to all entrances into private areas, including car parks and internal courtyards.

- 6) Provide safe pedestrian routes through the site.
- 7) Front buildings onto major streets with active uses.
- 8) Avoid the use of blank building walls at the ground level.

Mixed Use Buildings in High Street



11.2.7 Site Cover and Deep Soil Zones

A. Background

Limiting site cover provides separation between buildings. This space may be public (accessible and useable by the general public), communal (shared by all occupants of a development) or private (for the exclusive use of a single dwelling or tenancy). Limiting site cover improves amenity by providing daylight access, visual privacy and opportunities for recreation and social activities. Site coverage is greater closer to the city core where wall-to-wall development is allowable.

Deep soil zones are areas of natural ground retained within a development, uninhibited by artificial structures and with relatively natural soil profiles. Deep soil zones have important environmental benefits, including:

- promoting healthy growth of large trees with large canopies,
- protecting existing mature trees, and

- allowing infiltration of rainwater to the water table and reduction of stormwater runoff.

B. Objectives

- To provide an area on sites that enables soft landscaping and deep soil planting, permitting the retention and/or planting of trees that will grow to a large or medium size.
- To limit building bulk on a site and improve the amenity of developments, allowing for good daylight access, ventilation, and improved visual privacy.
- To provide passive and active recreational opportunities.

C. Controls

- The maximum site cover and minimum deep soil area for development is specified in Table E11.3 below:

Table E11.3: Maximum site cover & minimum deep soil for development

Zone/Area	Maximum Site Cover	Minimum Deep Soil Area
Commercial Core	100%	0%
Mixed Use (Other)	100%	0%
Mixed Use (City East)	70%	10%
All Other Zones	70%	10%

- Deep soil area is provided in one continuous block. In multiple deep soil areas are provided they must have a minimum dimension (in any direction) of 6m.
- Where non-residential developments result in full site coverage and there is no capacity for water infiltration, the deep soil component must be provided on structure, in accordance with the provisions of Section 11.2.9 Planting on Structures. In such cases, compensatory stormwater management measures must be integrated within the development to minimise stormwater runoff.
- Where deep soil zones are provided, they must accommodate existing mature trees as well as allowing for the planting of trees/ shrubs that will grow to be mature trees.
- No structures, works or excavations that may restrict vegetation growth are permitted in this zone (including but not limited to car parking, hard paving, patios, decks and drying areas).

11.2.8 Landscape Design

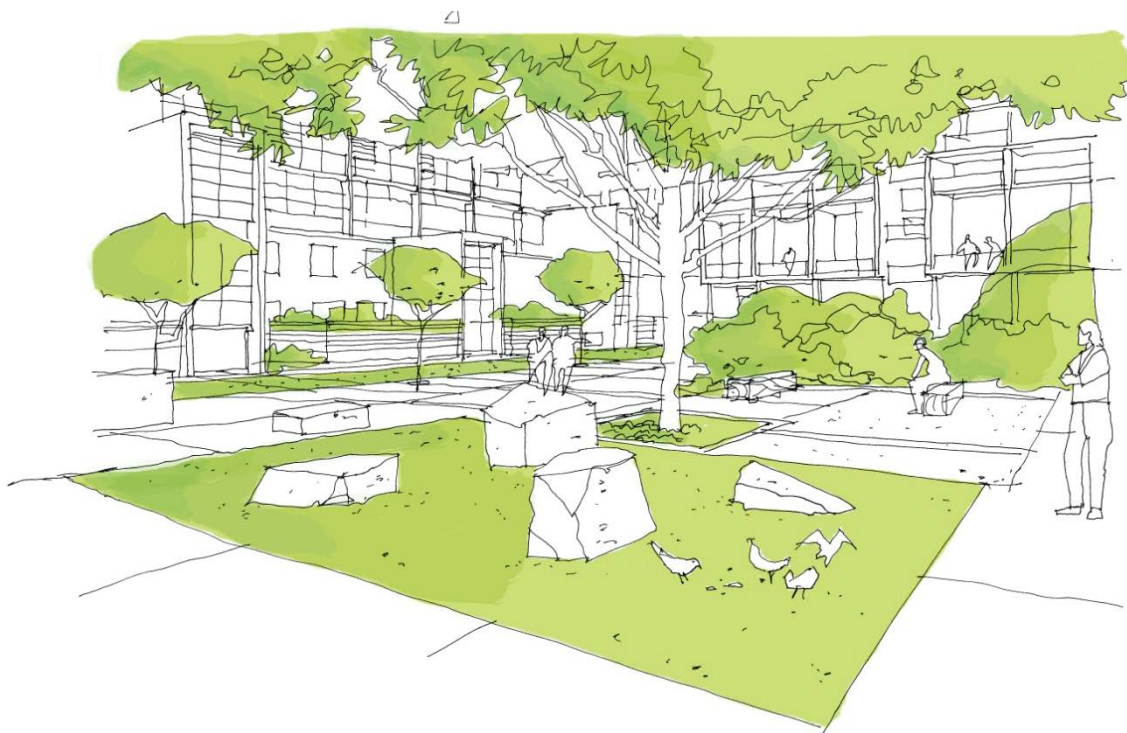
A. Background

Landscape design includes the planning, design, construction and maintenance of all utility, open space and garden areas. Good landscaping provides breathing space, passive and active recreational opportunities and enhances air quality in city centres. It is fundamental to the amenity and quality of outside space for residential flats and multi-dwelling housing.

B. Objectives

- a) To ensure that the use of potable water for landscaping irrigation is minimised.
- b) To ensure landscaping is integrated into the design of development.
- c) To add value and quality of life for residents and occupants within a development in terms of privacy, outlook, views and recreational opportunities.
- d) To improve stormwater quality and control run-off.
- e) To improve the microclimate and solar performance within the development.
- f) To improve urban air quality and contribute to biodiversity.

Communal public space with deep soil zone allows for tree planting and high quality landscape



C. Controls

- 1) Recycled water should be used to irrigate landscaped areas.
- 2) Commercial and retail developments are to incorporate planting into accessible outdoor spaces.
- 3) Remnant vegetation must be maintained throughout the site wherever practicable.
- 4) A long-term landscape concept plan must be provided for all landscaped areas including the deep soil landscape zone, in accordance with the Landscape Design Section of this DCP. The plan must outline how landscaped areas are to be maintained for the life of the development.

11.2.9 Planting on Structures

A. Background

The following controls apply in the Commercial Core and Mixed Use zones for planting on roof tops or over car park structures, particular for communal open space required as a component of mixed use residential development, and in non-residential developments where the landscaping proposed is not on natural ground.

Constraints on the location of car parking structures due to water table conditions may mean that open spaces and courtyards might need to be provided over parking structures. The plants in these areas are grown in total containment with artificial soils, drainage and irrigation and are subject to a range of environmental stresses that affect their health, and ultimately their survival. Quality landscape design and open space amenity relies in part on the quality and health of plants.

B. Objectives

- a) To contribute to the quality and amenity of open space on roof tops and internal courtyards.
- b) To encourage the establishment and healthy growth of greening in urban areas.
- c) To minimise the use of potable water for irrigating planting on structures.

C. Controls

- 1) Recycled water should be used to irrigate in areas with planting on structures.
- 2) Design for optimum conditions for plant growth by:
 - a) providing soil depth, soil volume and soil area appropriate to the size of the plants to be established,
 - b) providing appropriate soil conditions and irrigation methods, and
 - c) providing appropriate drainage.
- 3) Design planters to support the appropriate soil depth and plant selection by:
 - a) ensuring planter proportions accommodate the largest volume of soil possible and soil depths to ensure tree growth, and
 - b) providing square or rectangular planting areas rather than narrow linear areas.
- 4) Increase minimum soil depths in accordance with:
 - a) the mix of plants in a planter for example where trees are planted in association with shrubs, groundcovers and grass,
 - b) the level of landscape management, particularly the frequency of irrigation,
 - c) anchorage requirements of large and medium trees, and
- 5) soil type and quality.
- 6) A long-term landscape concept plan is to be submitted with a development application. The plan is to be prepared in accordance with the requirements of the Landscape Design Section of this DCP. The plan must outline how the planting on structures are to be maintained for the life of the development.

Encourage high quality landscape on structures and internal communal courtyards



11.3 Pedestrian Amenity

A. Background

The pedestrian amenity provisions are intended to achieve a high quality of urban design and pedestrian comfort in the public spaces of the City Centre. The pedestrian environment is to be characterised by excellence of design, high quality materials and a standard of finish appropriate to a regional city centre. The City's lanes, arcades and through site links should form an integrated pedestrian network providing choice of routes at ground level for pedestrians.

In addition to the objectives and controls outlined in the introduction of this Section, the objectives of this section aim to increase the vitality, safety, security and amenity of the public domain by:

- a) encouraging future through site links at ground level.
- b) ensuring active street frontages and positive building address to the street.
- c) ensuring provision of awnings along the commercial core street frontages and other retail and tourist areas.

- d) mitigating adverse impacts on the street arising from driveway access crossings, advertising signage and selection of building finishes and materials.
- e) protecting significant views and vistas along streets.

11.3.1 Permeability

A. Background

Site links provide access connections between long sides of street blocks for pedestrian and vehicular access at street level. These links provide an important permeability function in the form of lanes, shared zones, arcades and pedestrian ways.

B. Objectives

- a) To improve access in the city centre by providing through site links as redevelopment occurs.
- b) To retain and enhance existing through site links as redevelopment occurs.
- c) To encourage active streets fronts along the length of through site links where possible.
- d) To provide for pedestrian amenity and safety.
- e) To encourage removal of vehicular entries from primary street frontages.
- f) To retain and develop lanes as useful and interesting pedestrian connections as well as for service access.
- g) To improve the permeability of large sites when they are redeveloped for more intensive uses.

C. Controls

- 1) Through site links are to be provided as shown in Figure E11.18.
- 2) Existing dead end lanes are to be extended through to the next street as redevelopment occurs.
- 3) New through site links should be connected with existing and proposed through block lanes, shared zones, arcades and pedestrian ways and opposite other through site links.
- 4) Existing publicly and privately owned links are to be retained.
- 5) The redevelopment of sites with an extra area of 5 hectares or more are to include new streets, lanes and/or site links to ensure permeability and encourage public access throughout the site.
- 6) Signage is to be located at street entries indicating public access through the site as well as the street to which the link connects.

Pedestrian links

- 7) Through site links for pedestrians are to be provided as shown in Figure E11.18 with accessible paths of travel that are:
 - a) a minimum width of 4m for its full length and clear of all obstructions including columns, stairs, etc.;
 - b) direct and publicly accessible thoroughfares for pedestrians; and

c) Open-air for its full length and have active frontages or a street address.

8) Arcades are to:

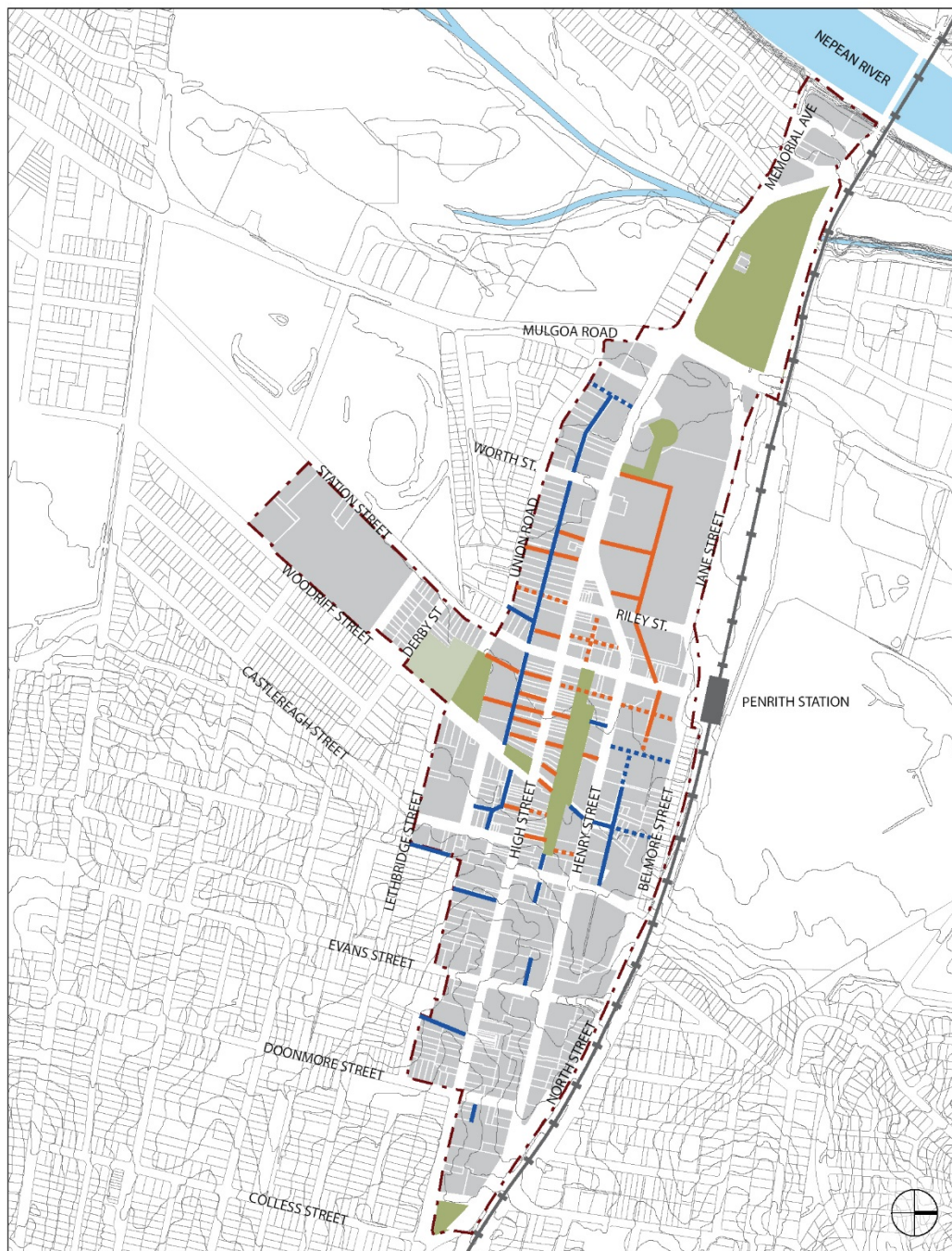
- a) have a minimum width of 4m for its full length and clear of all obstructions including columns, stairs, etc.;
- b) direct and publicly accessible for pedestrians during business trading hours;
- c) be designed as an accessible path of travel for persons with a disability and incorporate the 'safer by design' principles;
- d) have active frontages on either side for its full length;
- e) where practical, have access to natural light for at least 30% of its length; and
- f) where enclosed, have clear glazed entry doors to at least 50% of the entrance.

Lanes

9) Lanes are to be designated pedestrian routes that are:

- a) accessible paths of travel, with a minimum width of 6m for its full length clear of all obstructions;
- b) designed, paved and lit in accordance with the lighting provisions of this Plan and any technical documents applying to the city centre. The *Penrith City Centre Public Domain Masterplan* should be referred to for further design details.
- c) appropriately signposted indicating the street(s) to which the lane connects.

Figure E11.18 Existing and Desired Links



- Existing lanes to be retained
- - - Desired new lanes
- Existing pedestrian links to be retained
- - - Desired new pedestrian links

11.3.2 Active Street Frontages and Address

A. Background

Active street frontages promote an interesting and safe pedestrian environment. Busy pedestrian areas and non-residential uses such as shops, studios, offices, cafes, recreation and promenade opportunities promote the most active street fronts. Residential buildings contribute positively to the street by providing a clear street address, direct access from the street and direct outlook over the street.

B. Objectives

- a) To promote pedestrian activity and safety in the public domain.
- b) To maximise active street fronts in Penrith City Centre.
- c) To define areas where active streets are required or are desirable.
- d) To encourage an address to the street outside of areas where active street frontages are required.

C. Controls

Active Street Frontages

- 1) Active frontage uses are defined as one or a combination of the following at street level:
 - a) entrance to retail;
 - b) shop front;
 - c) glazed entries to commercial and residential lobbies occupying less than 50% of the street frontage, to a maximum of 12m frontage;
 - d) café or restaurant if accompanied by an entry from the street;
 - e) active office uses, such as reception, if visible from the street;
 - f) public building if accompanied by an entry.
- 2) Active street fronts are to be located at the ground level of all buildings located in those areas as shown in the Active Street Frontages map of Penrith LEP 2010.
- 3) Ground floor active street frontage uses are to be at the same level as the adjoining footpath and must be directly accessible from the street.
- 4) Restaurants, cafes and the like are to consider providing openable shop fronts.
- 5) Only open grill or transparent security shutters are permitted to retail frontages.

Street Address

- 1) Street address is defined as entries, lobbies, and habitable rooms with clear glazing to the street not more than 1.2m above street level, and does not include car parking areas.
- 2) Street address is required on the ground level of buildings specifically located in areas shown in the Active Street Frontages Map of Penrith LEP 2010.

- 3) Residential developments are to provide a clear street address and direct pedestrian access off the primary street front, and allow for residents to overlook all surrounding streets.
- 4) Provide multiple entrances for large developments including an entrance on each street frontage.
- 5) Provide direct 'front door' access from ground floor residential units.
- 6) Residential buildings are to provide not less than 65% of the lot width as street address.

11.3.3 Awnings

A. Background

Awnings increase the useability and amenity of public footpaths by protecting pedestrians from sun and rain. They encourage pedestrian activity along streets and, in conjunction with active edges such as retail frontages, support and enhance the vitality of the local area. Awnings, like building entries, provide a public presence and interface within the public domain and contribute to the identity of a development.

A separate approval to erect an awning over the road reserve including a footpath will be required under the *Roads Act 1993* and the *Local Government Act 1993*.

B. Objectives

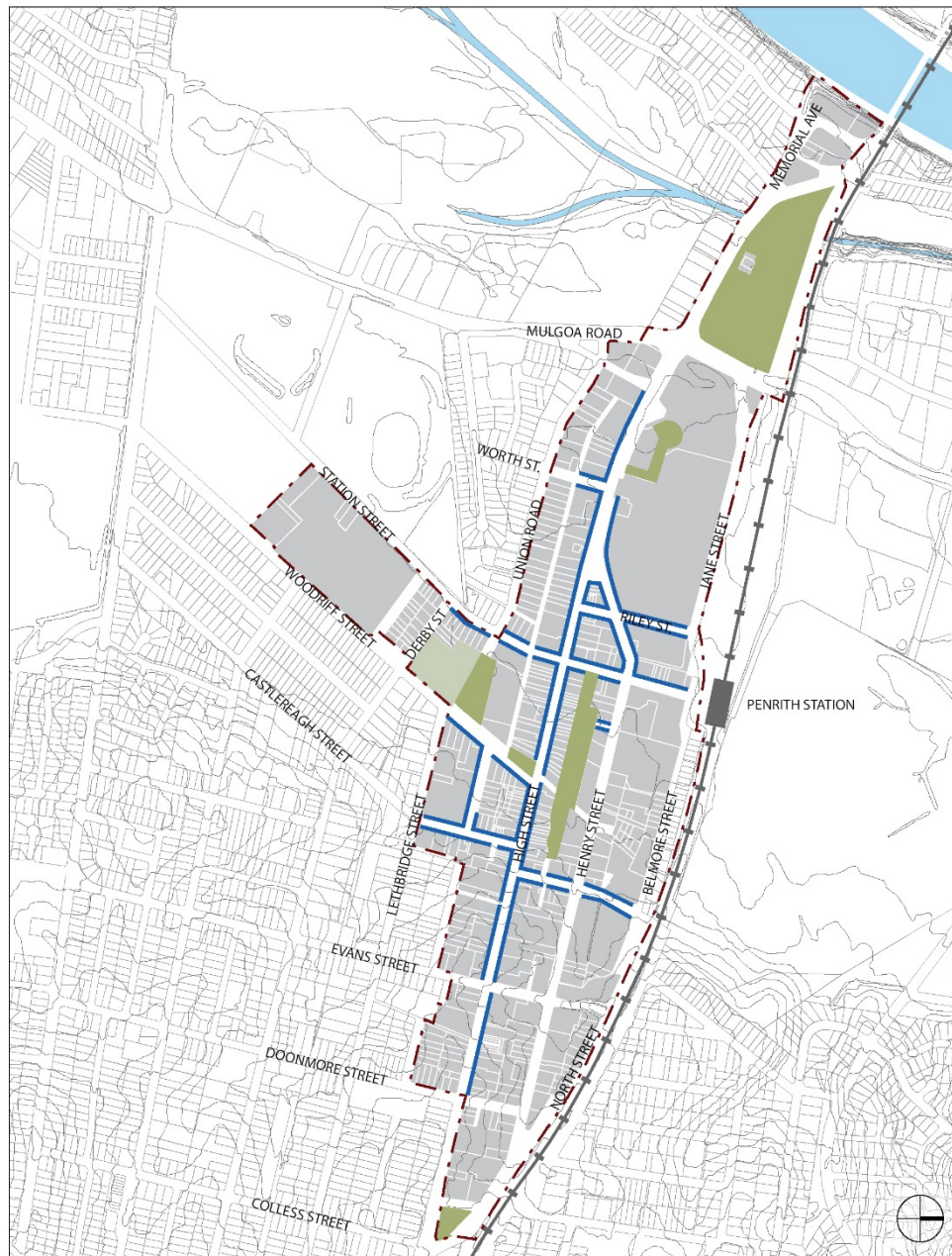
- a) To provide shelter from wind and rain for public streets where most pedestrian activity occurs.
- b) To address the streetscape by providing a consistent street frontage in the city centre.


C. Controls

- 1) Continuous street frontage awnings are to be provided for all new developments as indicated in Figure E11.19.
- 2) Awnings dimensions should generally be:
 - a) minimum 2.8m deep where street trees are not required, otherwise minimum 2.4m deep;
 - b) minimum soffit height of 3.2m and maximum of 4m;
 - c) steps for design articulation or to accommodate sloping streets are to be integral with the building design and should not exceed 700mm;
 - d) low profile, with slim vertical fascias or eaves (generally not to exceed 300mm height); and
 - e) set back from kerb to allow for clearance of street furniture
- 3) Awning design must match building facades and be complementary to those of adjoining buildings.
- 4) Wrap awnings around corners for a minimum 6m from where a building is sited on a street corner.
- 5) Vertical canvas drop blinds may be used along the outer edge of awnings along north-south streets. These blinds must not carry advertising or signage.

- 6) Provide under awning lighting recessed into the soffit of the awning or wall mounted onto the building to facilitate night use and to improve public safety.
- 7) One under-awning sign may be attached to the awning, at intervals of 6m of the awning frontage.

Figure E11.19 Awnings



 Continuous awnings required

11.3.4 Vehicle Footpath Crossings

A. Background

Vehicle crossings over footpaths disrupt pedestrian movement and threaten safety. The design of vehicle access to buildings also influences the quality of the public domain. Overly wide and high vehicle access points detract from the streetscape and the active use of street frontages.

The design and location of vehicle access to developments should minimise both conflicts between pedestrians and vehicles on footpaths, particularly along pedestrian priority places, and visual intrusion and disruption of streetscape continuity.

Design of driveways and vehicle access is to be in accordance with the provisions of the Transport, Access and Parking Section of this DCP.

B. Objectives

- a) To make vehicle access to buildings more compatible with pedestrian movements.
- b) To reduce the impact of vehicular access on the public domain.
- c) To ensure vehicle entry points are integrated into building design and contribute to the building design.

C. Controls

Location of Vehicle Access

- 1) No additional vehicle entry points will be permitted into the parking or service areas of development along those streets identified as significant pedestrian circulation routes in Figure E11.21.
- 2) In all other areas, one vehicle access point only (including the access for service vehicles and parking for non-residential uses within mixed use developments) will be generally permitted.
- 3) Where practicable, vehicle access is to be from lanes and minor streets rather than primary street fronts or streets with major pedestrian activity.
- 4) Where practicable, adjoining buildings are to share or amalgamate vehicle access points. Internal on-site signal equipment is to be used to allow shared access. Where appropriate, new buildings should provide vehicle access points so that they are capable of shared access at a later date.
- 5) Vehicle access may not be required or may be denied to some heritage buildings.

Design of Vehicle Access

- 1) Wherever practicable, vehicle access is to be a single lane crossing with a maximum width of 2.7m over the footpath, and perpendicular to the kerb alignment. In exceptional circumstances, a double lane crossing with a maximum width of 5.4m may be permitted for safety reasons (refer to Figure E11.20). The *Penrith City Centre Public Domain Masterplan* should be referred to for further design details.
- 2) Vehicle access ramps parallel to the street frontage will not be permitted.
- 3) To ensure vehicle entry points are integrated into building design.

- 4) Doors to vehicle access points are to be roller shutters or tilting doors fitted behind the building facade.
- 5) Vehicle entries are to have high quality finishes to walls and ceilings as well as high standard detailing. No service ducts or pipes are to be visible from the street.

Porte Cocheres

- 1) Porte cocheres disrupt pedestrian movement and do not contribute to active street frontage. They may only be permitted for hotels and major tourist venues subject to urban design, streetscape, heritage and pedestrian amenity considerations.
- 2) If justified, porte cocheres are to be internal to the building with one combined vehicle entry and exit point, or one entry and one exit point on two different street fronts of the development.
- 3) In exceptional circumstances for buildings with one street frontage only, an indented porte cochere with separate entry and exit points across the footpath may be permitted, as long as it is constructed entirely at the footpath level and provides an active frontage at its perimeter and provides for safe and clear pedestrian movement along the street.

Figure E11.20: Vehicle Footpath Crossing

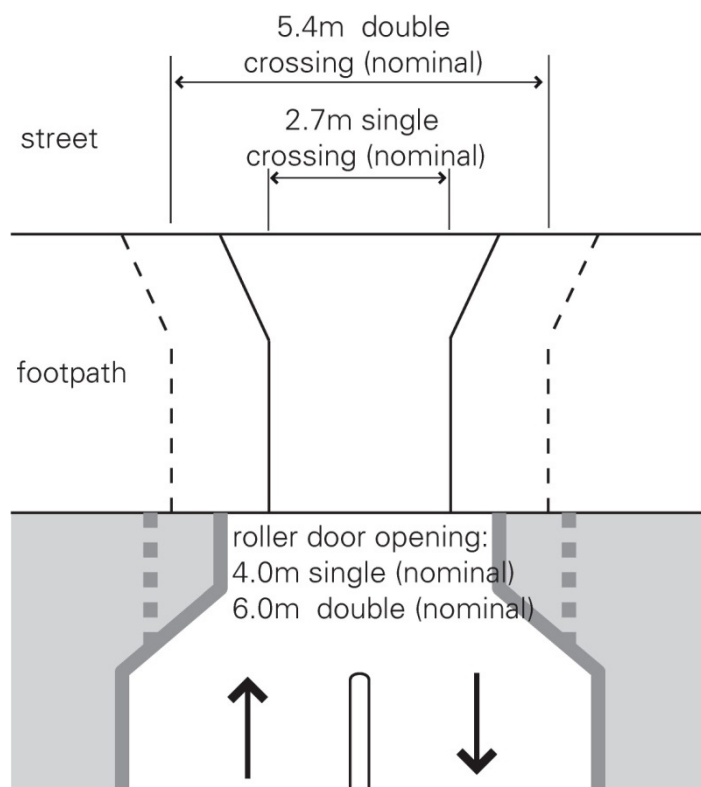
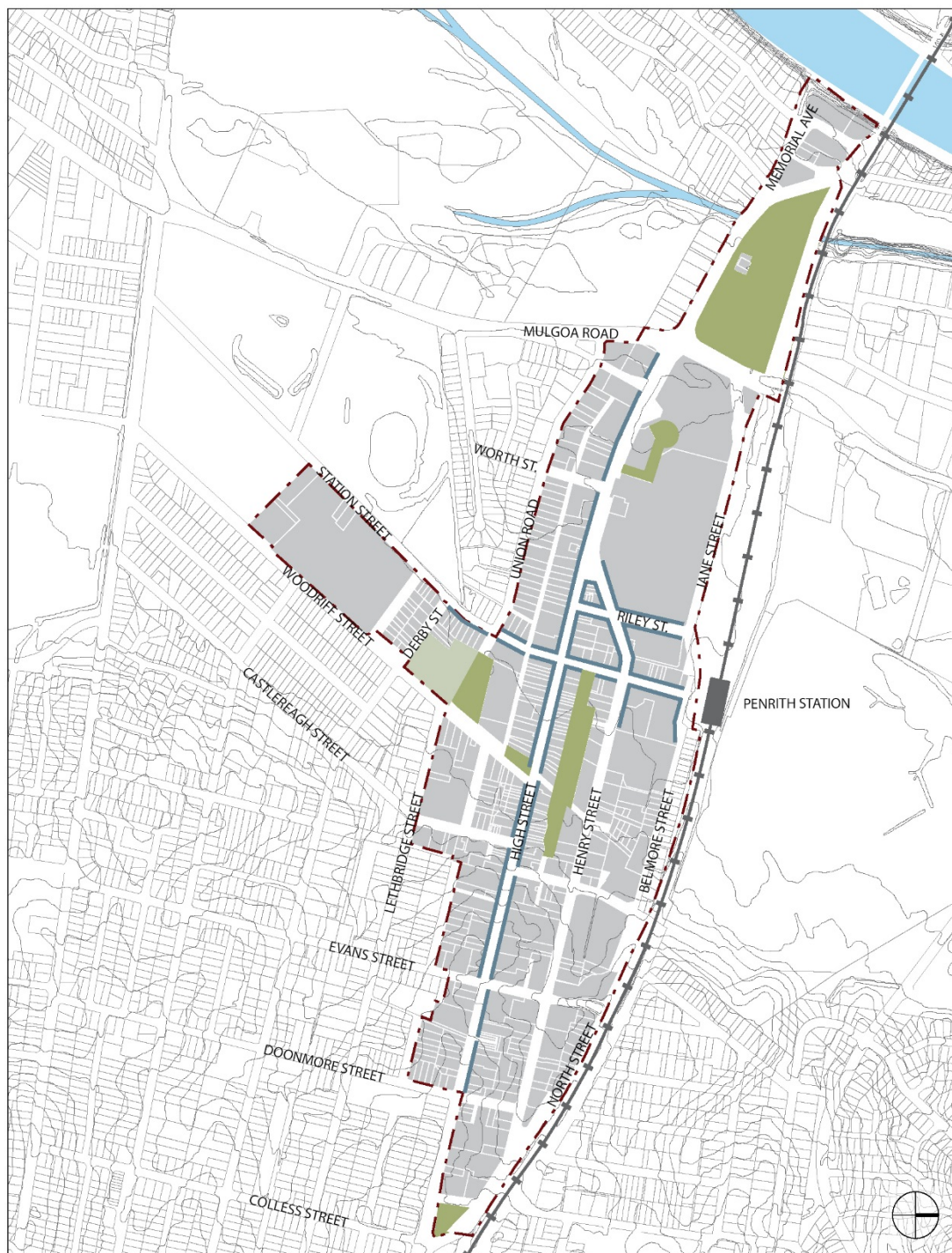



Figure E11.21 Restrictions on Vehicular Entries



 Additional vehicular entries not permitted

11.3.5 Pedestrian Overpasses and Underpasses

A. Background

Streets represent important components of the public domain and provide the best potential amenity and safety when activated by pedestrians. Streets offer sky exposure, sunlight and air, a sense of orientation and direct access to the main frontages of buildings. Generally, pedestrians should be encouraged to use the street level to enhance and contribute to street life, to promote activity and interest, and to maximise safety and security of the public domain. Penrith's climate does not warrant pedestrian isolation from the street, and any conflicts between pedestrians and vehicles are to be resolved at the street level.

Pedestrian overpasses are discouraged as they have a negative impact on the streetscape quality and on views and vistas along streets. New pedestrian underpasses will only be considered where they would directly connect to major transport nodes such as the railway station and substantially improve pedestrian safety and access.

B. Objectives

- a) To promote pedestrian activation of streets and public places.
- b) To promote 'safer by design' and crime prevention principles.
- c) To encourage pedestrian circulation at street level.
- d) To protect views and vistas along streets.

C. Controls

- 1) New overpasses over streets are discouraged. In exceptional circumstances, new overpasses may be considered subject to assessment of impacts on safety and crime prevention, streetscape amenity and activation of the public domain. In such circumstances, overpasses are to be fully glazed, not greater than 6m wide or more than one level high.
- 2) New pedestrian underpasses are strongly discouraged as they reduce pedestrian accessibility, safety and passive surveillance opportunities. In exceptional circumstances, new underpasses may be considered where it can be demonstrated they would substantially improve pedestrian safety and accessibility, will incorporate active uses for the entire length and have a minimum width of 4.5m clear of all fixed obstructions and a minimum ceiling height of 4m.

11.3.6 Building Exteriors

A. Background

Penrith's cityscape and public domain is defined by its buildings, streets and public places. The maintenance and improvement of the public domain is dependent on a consistent approach to the design of new development including the articulation and finish of building exteriors.

B. Objectives

To ensure that buildings in Penrith:

- a) contribute positively to the streetscape and public domain by means of high quality architecture and robust selection of materials and finishes;

- b) provide richness of detail and architectural interest especially at visually prominent parts of buildings such as lower levels and roof tops;
- c) present appropriate design responses to nearby development that complement the streetscape;
- d) clearly define the adjoining streets, street corners and public spaces and avoid ambiguous external spaces with poor pedestrian amenity and security; and
- e) maintain a pedestrian scale in the articulation and detailing of the lower levels of the building; and
- f) contribute to a visually interesting skyline.

C. Controls

- 1) Adjoining buildings (particularly heritage buildings) are to be considered when designing new buildings and extensions to existing buildings in terms of:
 - a) appropriate alignment and street frontage heights;
 - b) setbacks above street frontage heights;
 - c) appropriate materials and finishes selection;
 - d) facade proportions including horizontal or vertical emphasis; and
 - e) the provision of enclosed corners at street intersections.
- 2) Balconies and terraces should be provided, particularly where buildings overlook parks and on low rise parts of buildings. Gardens on the top of setback areas of buildings and on roofs are encouraged.
- 3) Articulate façades so that they address the street and add visual interest.
- 4) External walls should be constructed of high quality and durable materials and finishes with 'self-cleaning' attributes, such as face brickwork, rendered brickwork, stone, concrete and glass.
- 5) To assist articulation and visual interest, avoid expanses of any single material.
- 6) Maximise glazing for retail uses, but break glazing into sections to avoid large expanses of glass.
- 7) Highly reflective finishes and curtain wall glazing are not permitted above ground floor level
- 8) A materials sample board and schedule is required to be submitted with applications for development over \$1 million or for that part of any development built to the street edge.
- 9) The design of roof plant rooms and lift overruns is to be integrated into the overall architecture of the building, and in residential buildings may be screened by roof pergolas.

11.4 Access, Parking and Servicing

A. Background

In addition to controls contained in the Transport, Access and Parking Section of this DCP, this section contains more detailed objectives and controls on pedestrian access, on-site parking and site facilities, and site facilities and services for the City Centre.

B. General Objectives

- a) To facilitate the development of building design excellence appropriate to a regional city.
- b) To improve non-vehicular access to the city centre, including but not limited to bicycle, pedestrian and mass transit options.
- c) To require parking and servicing provisions to be contained within development sites to an amount and rate adequate for the economic and sustainable growth of the city centre.
- d) To provide for safe and secure access.
- e) To minimise impacts on city amenity, the public domain and streetscape.
- f) To ensure that access is provided for persons with a disability.

11.4.1 Pedestrian Access and Mobility

A. Background

Any new developments must be designed to ensure that safe and equitable access is provided to all, including people with a disability.

B. Objectives

- a) To provide safe and easy access to buildings to enable better use and enjoyment by people regardless of age and physical condition, whilst also contributing to the vitality and vibrancy of the public domain.
- b) To ensure buildings and places are accessible to people with a disability.
- c) To provide a safe and accessible public domain.

C. Controls

- 1) Main building entry points should be clearly visible from primary street frontages and enhanced as appropriate with awnings, building signage or high quality architectural features that improve clarity of building address and contribute to visitor and occupant amenity.
- 2) The design and provision of facilities for persons with a disability including car parking must comply with Australian Standard 1428 Parts 1 and 2 (or as amended) and the *Commonwealth Disability Discrimination Act 1992* (as amended). The *Penrith City Centre Public Domain Masterplan* should be referred to for further design details for access through and from public places.
- 3) Barrier free access is to be provided to not less than 20% of dwellings in each development and associated common areas.

- 4) The development must provide at least one main pedestrian entrance with convenient barrier free access to the ground floor, and have direct link to an identified accessible path of travel in the adjoining public domain.
- 5) The development must provide accessible internal access, linking to public streets and building entry points.
- 6) Pedestrian access ways, entry paths and lobbies must use durable materials commensurate with the standard of the adjoining public domain (street) with appropriate slip resistant materials, tactile surfaces and contrasting colours.
- 7) A report from an accredited access consultant is to be submitted with development application, indicating the proposal's compliance with AS1428. If approved, Council may impose a condition on the development consent requiring the submission of a compliance certificate (or other such document) from an accredited access consultant attesting to the development's compliance with AS1428, and that a person with a disability can access the development.

11.4.2 On-Site Parking Options

A. Background

On-site parking includes underground (basement), surface (at-grade) and above ground parking, including parking stations.

There are particular constraints in certain areas of Penrith city centre on the provision of car parking in underground structures. Due to the high water table, excavation on certain sites may become difficult beyond one level of basement parking. This may necessitate site design which locates the parking above ground. In these cases, minimising the impacts of above ground parking on the public domain is important.

B. Objectives

- a) To encourage economic growth in the City Centre.
- b) To enable the conversion of above ground parking to other future uses.
- c) To support the complementary use and benefit of public transport and non-motorised modes of transport such as bicycles and walking.

C. Controls

- 1) In addition to the parking requirements outlined in the Transport, Access and Parking Section of this DCP, Figures E11.22 and E11.23 contains additional options for car parking at Penrith City Centre.
- 2) On-site parking is to be accommodated in basement parking except in the blocks between Belmore and Henry Streets where above ground car parking may be permissible in the form illustrated in Figure 11.24 below.

Figure E11.22: Aboveground parking must be screened by an active edge to the public domain

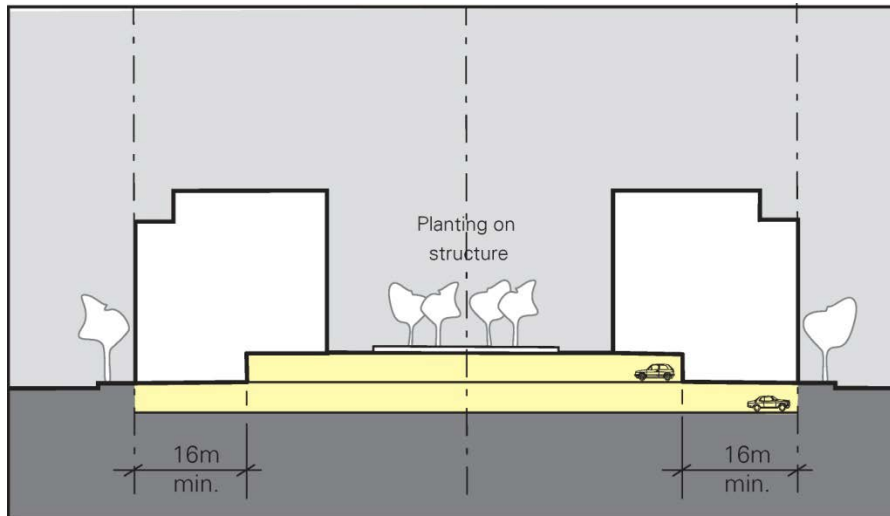


Figure E11.23: Above ground parking may be located adjacent to a lane, as illustrated above, with appropriate screening to reduce the impact on the public domain.

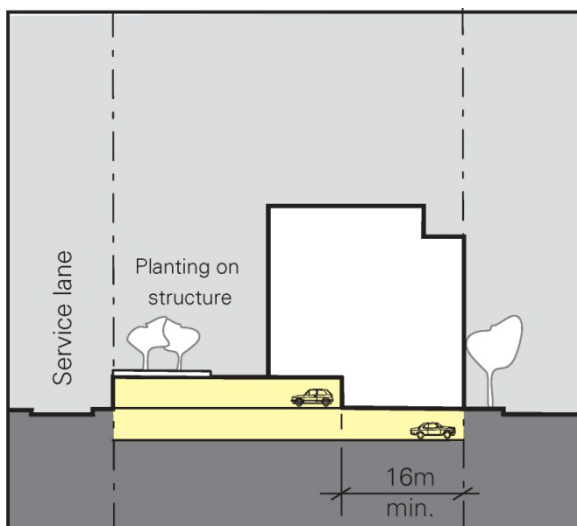
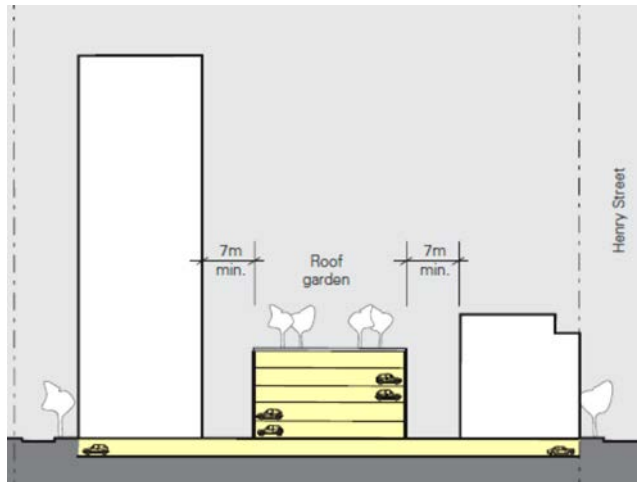


Figure E11.24: In the blocks between Belmore and Henry Streets, above-ground car parking may be permissible in the middle of the block where buildings ensure that it is not visible from surrounding streets or public spaces.



11.4.3 Site Facilities and Services

A. Objectives

- a) To ensure that the design and location of site facilities (such as clothes drying areas, mail boxes, recycling and garbage disposal units/ areas, screens, lighting, storage areas, air conditioning units, rainwater tanks/ hot water systems, solar panels and other such devices and communication systems) are integrated within the development and are unobtrusive.
- b) To ensure that site services and facilities are adequate for the nature and quantum of development.
- c) To establish appropriate access and location requirements for servicing.
- d) To ensure service requirements do not have adverse amenity impacts.

B. Controls

Mailboxes

- 1) Letterboxes should be integrated into a wall immediately adjacent the building entrance(s). Where there are a number of entrances into the building, the letterboxes located at each entrance should service the tenancies that will utilise that building entrance.
- 2) Letterboxes shall be secure and large enough to accommodate articles such as newspapers.

Communication facilities/networks

- 3) Telecommunication infrastructure should be built into the development and predominantly below ground, incorporating the following services fundamental in the effective operation of businesses, home businesses and dwellings:
 - a) Multiple telecom services including high speed internet (including broadband), voice and data systems,

- b) Cabling from all telephone lines, cable TV, internet is built into the building from the outset,
 - c) Consider centralised (C.A.T.V.) system is provided.
- 4) Where a master antenna is provided, the antennae must be sited in a location that does not intrude into, or is less visible from, surrounding public spaces/ open areas.

Service Infrastructure

- 5) Infrastructure attributed to the servicing of the development, including associated cabling, should be located below ground.

Air conditioning units, service vents and other associated structures

- 6) Such structures should be:
- a) located away from street frontages and lanes;
 - b) located in a position where the likely impact is minimised; and
 - c) adequately setback from the perimeter wall or roof edge of buildings.
- 7) Where it is to be located on the roof, it should be integrated into the roofscape design and in a position where such facilities do not become a feature in the skyline at the top of building(s).
- 8) Refer to the Water Management Section of this DCP for locational and connection requirements.

Loading/Unloading Areas

- 9) Loading/ unloading areas are to be:
- a) integrated into the design of developments;
 - b) separated from car parking and waste storage and collection areas;
 - c) located away from the circulation path of other vehicles; and
 - d) designed for commercial vehicle circulation and access complying with AS2890.2.
- 10) For mixed use developments, separate loading/unloading areas should be provided for commercial/retail and residential uses.
- 11) Vehicular access to the loading/unloading area(s) is preferred off rear lanes, side streets and right of ways. Where appropriate, consider a single vehicular access point for the loading/unloading area(s) and waste collection area(s).

Fire service and emergency vehicles

- 12) Generally, provision must be made for all emergency vehicles to enter and leave the site in a forward direction, particularly the NSW Fire Brigade vehicles where:
- a) NSW Fire Brigade cannot park their vehicles within the road reserve due to the distance of hydrants from the building or restricted vehicular access to hydrants; or
 - b) otherwise required by the NSW Fire Brigade's Code of Practice – Building Construction – NSWFB Vehicle Requirements.
- 13) For developments where NSW Fire Brigade vehicle(s) is required to enter the site, the circulation path and access/egress provision is to comply with NSW Fire Brigade's Code of Practice – Building Construction – NSWFB Vehicle Requirements.

11.5 Sustainable Development

11.5.1 Reflectivity

A. Background

Reflective materials used on the exterior of building can result in undesirable glare for pedestrians and potentially hazardous glare for motorists. Reflective materials can also impose additional heat load on other buildings. The excessive use of highly reflective glass should be discouraged. Buildings with a glazed roof, façade or awning should be designed to minimise hazardous or uncomfortable glare arising from reflected sunlight.

B. Objectives

- a) To restrict the reflection of sunlight from buildings to surrounding areas and buildings.

C. Controls

- 1) New buildings and facades should not result in glare that causes discomfort or threatens safety of pedestrians or drivers.
- 2) Visible light reflectivity from building materials used on the facades of new buildings should not exceed 20%.
- 3) Subject to the extent and nature of glazing and reflective materials used, a Reflectivity Report that analyses potential solar glare from the proposed development on pedestrians and motorists may be required.

11.5.2 Maximising Liveability and Longevity

A. Background

Developments should be designed and constructed beyond its initial/first use to ensure that building stock is durable and capable for adaptability in the future. This 'whole of building' approach should also consider how the building design, finishes and materials used in the construction phase affect the amenity and safety of future occupants of the building(s).

B. Objectives

- a) To encourage the design of developments based on a 'whole of building' approach.
- b) To reduce the occurrence of 'sick building' syndrome on occupants.
- c) To ensure that community safety and crime prevention measures are incorporated in the design of the development, including the public domain.

C. Controls

- 1) Demonstrate how the passive and active environmental design features of the building design and proposed construction achieves ESD criteria and the 'whole of building' approach. Elements include, but not limited to:
 - a) Adaptability of buildings and floor levels within buildings to accommodate a range of uses over time;
 - b) Occupant comfort and amenity;
 - c) Fulfilling the Ecospecifier's Assessment criteria; and

- d) Incorporation of safety and crime prevention measures in the design of buildings and public domain as well as the siting of activities in the building.

A report, prepared by a suitably qualified environmental design expert, may be required with the development application and application for Construction Certificate.

- 2) Development proposals may require referral to the NSW Police for crime prevention and safety considerations, in accordance with the community safety protocol.

11.5.3 Reduce Resource Consumption

A. Background

All materials have environmental and health consequences in extraction, manufacture, transport, storage and eventually, use in a development. Some materials have significant impacts for maintenance and disposal, and should be carefully considered as part of the material selection at the design and specification stages of a development.

B. Objectives

- a) To encourage the selection and use of construction materials with low environmental impact over the lifecycle of the building.
- b) To reduce the health problems associated with the solvent content of finishes and fittings.
- c) To reduce the health problems associated with the high formaldehyde emission from composite wood products.

C. Controls

- 1) Materials with low embodied energy properties and/or materials that have been salvaged/ recycled are to be selected for the construction and fit out of the development.
- 2) Avoid using high environmental/high impact materials, such as volatile organic compounds (VOC's) and hydrofluoro-carbons (HCFC's) as these materials can become volatile at room temperature contributing to poor indoor air quality and affecting the health of occupants.

11.6 Controls for Residential Development

A. Background

In addition to the controls in the Residential Development Section of this DCP, the State Environmental Planning Policy No.65 – Design Quality of Residential Flat Development (SEPP 65) and the accompanying Residential Flat Design Code also apply to residential development in the Penrith City Centre. This includes residential flat buildings, any residential flat component of a mixed use development, and serviced apartments that are strata titled. The Residential Flat Design Code includes provisions for:

- a) Site Analysis;
- b) Site configuration;
- c) Site amenity;
- d) Site access;
- e) Building configuration;

- f) Building amenity;
- g) Building form; and
- h) Building performance.

11.6.1 Housing Choice and Mix

A. Background

A choice of apartment types and mix of sizes in the City Centre caters for a variety of socio-economic groups. All residential development in the Penrith City Centre should also comply with the provisions outlined below.

B. Objectives:

- a) To ensure that residential development provides a mix of dwelling types and sizes to cater for a range of household types.
- b) To ensure that dwelling layout is sufficiently flexible for residents' changing needs over time.
- c) To ensure a sufficient proportion of dwellings include accessible layouts and features to accommodate the changing requirements of residents.
- d) To ensure the provision of housing that will, in its adaptable features, meet the access and mobility needs of any occupant.

C. Controls

- 1) Where residential units are proposed at ground level, a report must be provided with the development application demonstrating how future non-residential uses can be accommodated within the ground level design. The report must address:
 - a) access requirements including access for persons with a disability;
 - b) any upgrading works necessary for compliance with the Building Code of Australia; and
 - c) appropriate floor to ceiling heights.
- 2) For smaller developments comprising up to six dwellings demonstrate how the proposal achieves a mix appropriate to the locality.
- 3) For developments containing more than six dwellings, a mix of living styles, sizes and layouts is to be achieved by providing:
 - a) a mix of bed-sitter/studio, one bedroom, two bedroom and three bedroom apartments;
 - b) bed-sitter apartments and one bedroom apartments must not be greater than 25% and not less than 10% of the total mix of apartments within each development; and
 - c) two bedroom apartments are not to be more than 65% of the total mix of apartments within each development.
- 4) 10% of all dwellings or a minimum one dwelling, whichever is the greater, must be designed to be capable of adaptation for disabled or elderly residents. Dwellings must be

designed in accordance with the Australian Adaptable Housing Standard (AS 4299-1995), which includes “pre-adaptation” design details to ensure visitability is achieved.

- 5) Where possible, adaptable dwellings shall be located on the ground floor, for ease of access. Dwellings located above the ground level of a building may only be provided as adaptable dwellings where lift access is available within the building. The lift access must provide access from the basement to allow access for people with disabilities.
- 6) The development application must be accompanied by certification from an accredited Access Consultant confirming that the adaptable dwellings are capable of being modified, when required by the occupant, to comply with the Australian Adaptable Housing Standard (AS 4299-1995).
- 7) Car parking and garages allocated to adaptable dwellings must comply with the requirements of the relevant Australian Standard as accessible car spaces.

Residential Development in Woodriff Street



11.7 Controls for Special Areas

A. Background

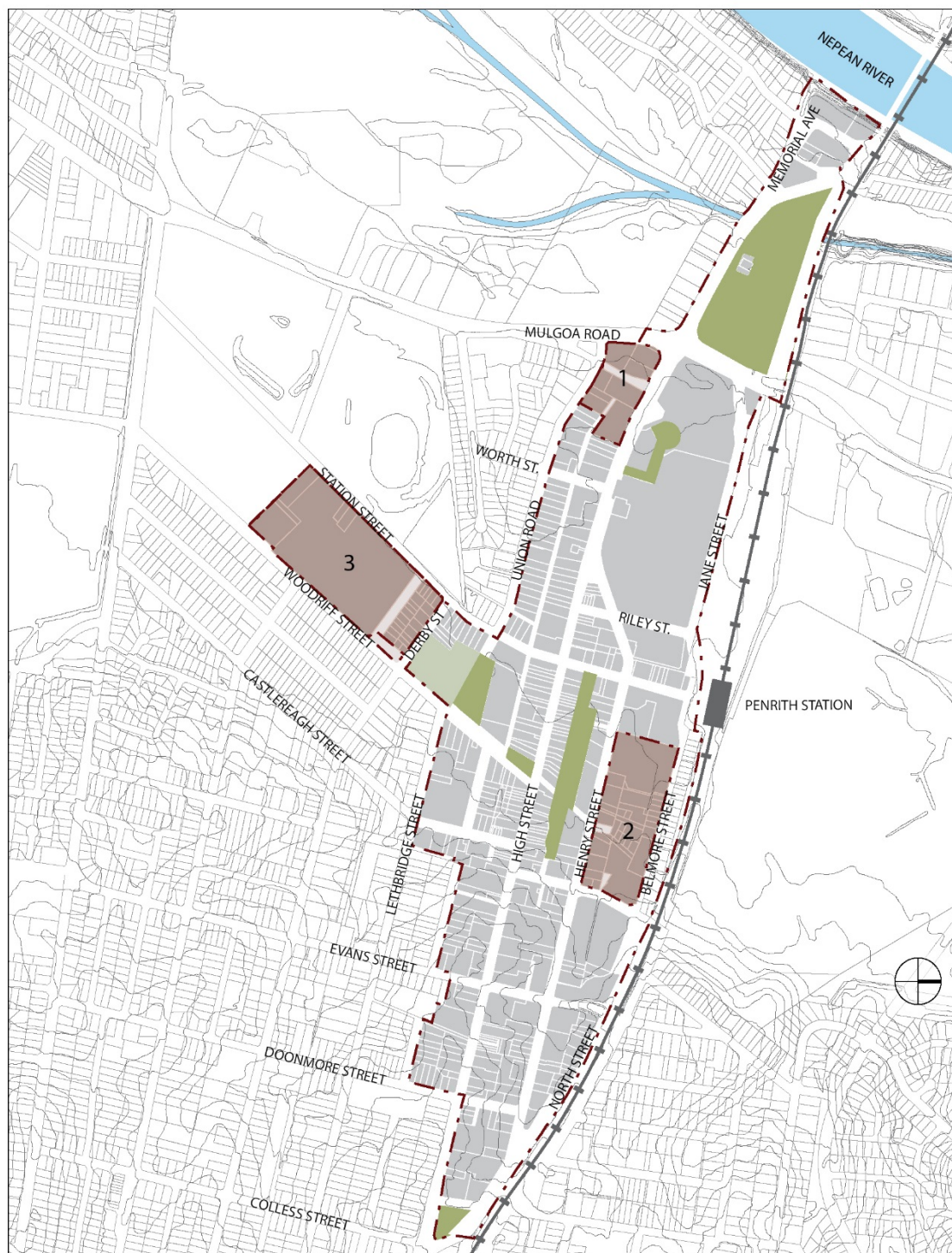
The following controls are additional to the general controls elsewhere in this DCP. Controls for special areas relate to specific sites or precincts in the City Centre.

11.7.1 Precinct Controls

A. Background

Due to their size and/or strategic importance in the City Centre, specific design principles and development outcomes have been identified for the sites identified in Figure E11.25. Redevelopment of these sites should implement design principles and outcomes expressed in the clauses and diagrams that follow.

Figure E11.25: Areas where Precinct controls apply



11.7.1.1 Precinct 1

Precinct 1 is the area generally bounded by High Street, Mulgoa Road and Union Road, as shown in Figure E11.26.

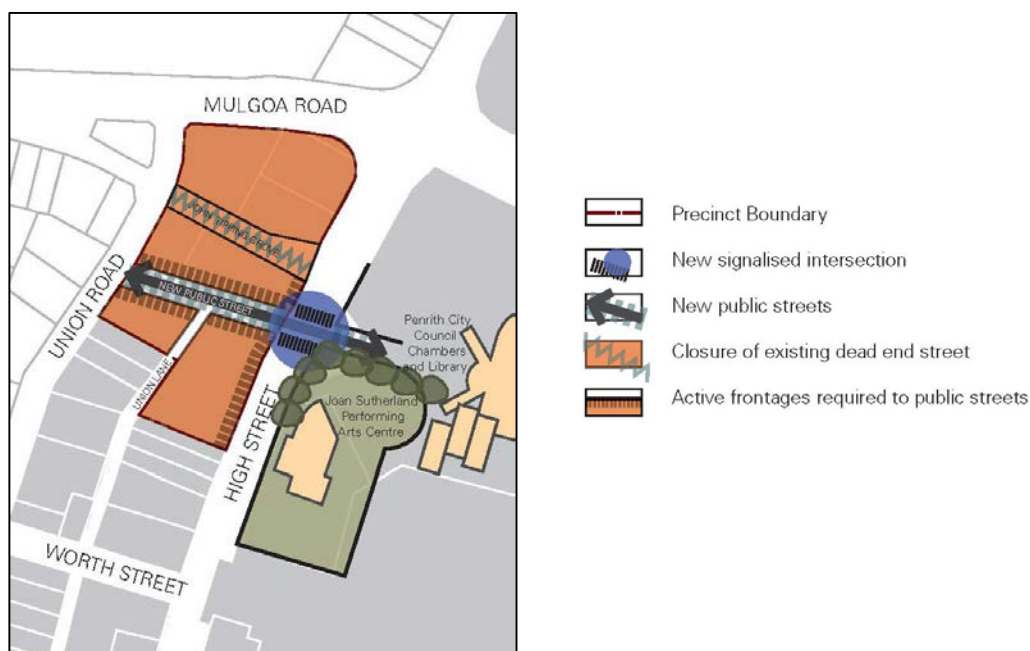
Development of the site must adhere to the following design principles:

- 1) Rationalise the existing pattern of land ownership.
- 2) Relocate redundant public street to provide north-south connectivity and active 'eat street' adjoining the Civic and Cultural Precinct.
- 3) Provide high quality and activity public domain interface with new and existing public streets.

Development of the site should provide the following outcomes:

- 1) Streets and pedestrian connections:
 - a) Closure John Tipping Grove between High Street and Union Road.
 - b) A new public street providing direct connections between High Street and Union Road.
 - c) Replace existing roundabout on High Street with a signalised intersection at junction of High Street and the new street.
 - d) Potential extension of Union Lane to the west to provide access and additional street frontage.
- 2) Land ownership:
 - a) Consolidation of existing land ownership patterns to allow orderly development of land.
- 3) Public domain interface:
 - a) Active frontage/land uses along the new street and High Street.
- 4) Built form:
 - a) Building built to the street alignment of the new street.

Figure E11.26: Precinct 1 Design Principles



11.7.1.2 Precinct 2

Precinct 2 is the area bounded by Henry Street, Lawson Street and Belmore Street, as shown in Figure E11.27.

Development of the site must adhere to the following design principles:

- 1) Provide good east-west and north-south connectivity with new streets, new lanes and pedestrian connections.
- 2) Provide off-street parking that is screened from existing streets.
- 3) Provide high quality and active public domain interface with all other existing public streets.

Development of the site should provide the following outcomes:

1) Streets and pedestrian connections:

- a) Provide at least two new public streets with direct connections between Belmore Street and Henry Street.
- b) Provide a new lane with east-west connectivity through the site and access to the rear of properties on Henry Street.

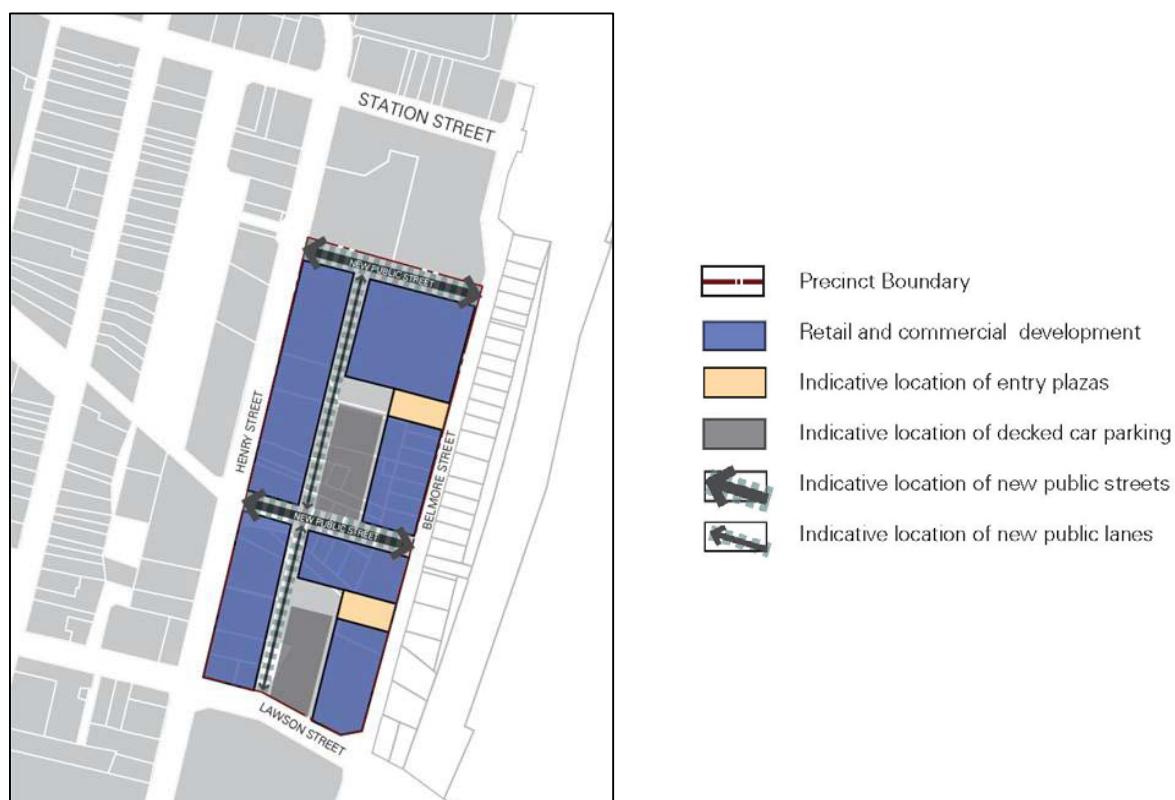
2) Open space:

- a) Design entry plazas as small public spaces to be adjacent to larger commercial buildings on Belmore Street.

3) Public domain interface:

- a) Active frontages to Henry Street, Lawson Street, Belmore Street and the new north-south streets.

Figure E11.27: Precinct 2 Design Principles



11.7.1.3 Precinct 3

Precinct 3 is the area bounded by Station Street, Jamison Road, Derby Street and the “Panasonic”, as shown in Figure E11.28.

Development of the site must adhere to the following design principles:

- 1) Provide good east-west and north-south connectivity with new streets and pedestrian connections.
- 2) Provide opportunities for residential uses towards Station Street and immediately adjoining the “Panasonic” site, where there is greater potential for appropriate amenity and street address.
- 3) Consolidate retail uses on remainder of the site.
- 4) Investigate opportunities for expansion of the shopping centre to the north.
- 5) Consolidate loading and service access to retail development on Woodriff Street.
- 6) Provide high quality and active public domain interface with all other existing public streets.
- 7) Provide sensitive interface with heritage items in the precinct.

Development of the site should provide the following outcomes:

- 1) Streets and pedestrian connections:
 - a) Provide a new public street with direct connections between Station and Woodriff Streets and a buffer between retail and residential development.
 - b) Provide a new pedestrian connection, parallel Station Street, linking with the pedestrian connection proposed on "Panasonic" site as illustrated.
 - c) Additional public streets, lanes and thoroughfare may be required to provide for residential address.
 - d) The closure of Reserve Street may be considered, subject to more detailed traffic analysis, the provision of adequate new public streets between Station and Woodriff Streets, and to provision of retail development with a direct and active frontage to Derby Street.
- 2) Land uses:
 - a) Locate retail, tourist accommodation and residential land uses in Area A.
 - b) Locate retail and commercial land uses only in Area B (as indicated).
- 3) Public domain interface:
 - a) Active frontage to Station Street, Reserve Street and Derby Street.
 - b) Front building setbacks as indicated.
 - c) Distinctive corners treatments at the locations indicated.
 - d) A landscaped corridor of mature trees on the northern side of Woodriff Street.
- 4) Heritage:
 - a) Integrate heritage listed buildings into the design of the new retail and residential development.

Figure E11.28: Precinct 3 Design Principles

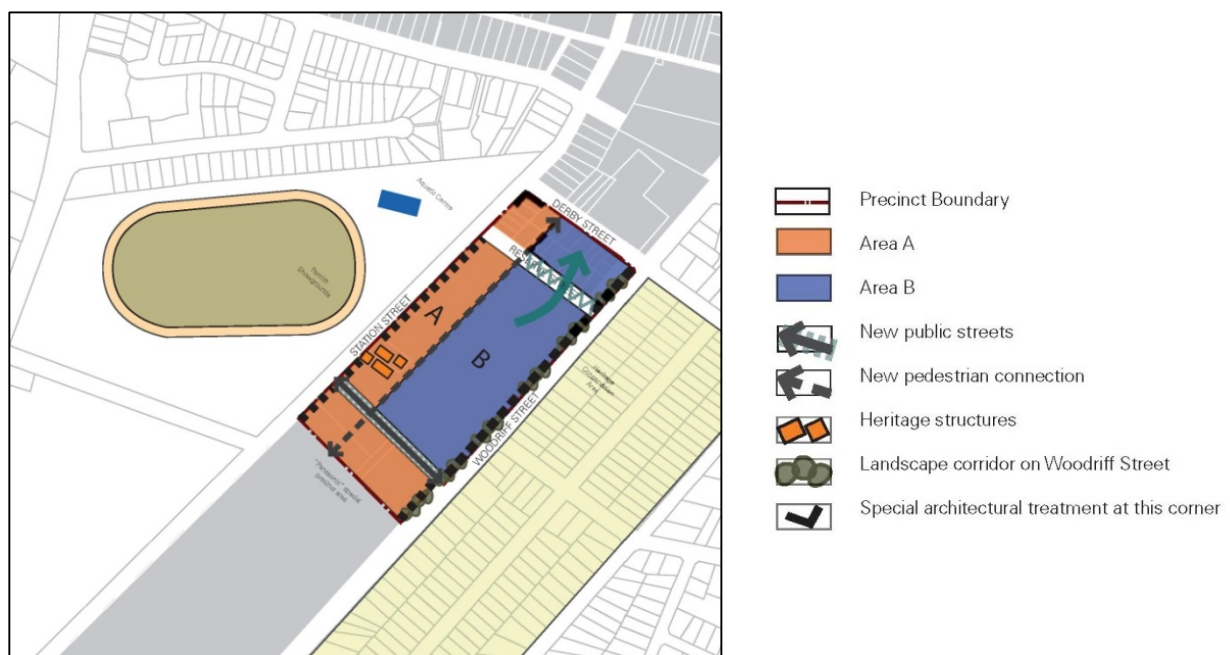


Table of Contents

PART B – NORTH PENRITH	57
11.8.1 PRELIMINARY	57
11.8.1.1 PURPOSE OF THIS SECTION	57
11.8.1.2 LAND TO WHICH THIS SECTION APPLIES	57
11.8.1.3 RELATIONSHIP WITH OTHER PLANNING DOCUMENTS	57
11.8.2 CONCEPT PLAN	58
11.8.2.1 VISION	58
11.8.2.2 OUTCOMES	60
11.8.3 RESIDENTIAL DEVELOPMENT	62
11.8.3.1 HOUSING DENSITY AND DIVERSITY	62
11.8.3.2 SUBDIVISION	63
11.8.3.3 BUILDING ENVELOPES	65
11.8.3.4 BUILDING DESIGN AND ARTICULATION	70
11.8.3.5 PRIVATE OPEN SPACE AND LANDSCAPING	71
11.8.3.6 FENCING	73
11.8.3.7 GARAGES, SITE ACCESS AND PARKING	73
11.8.3.8 VISUAL AND ACOUSTIC AMENITY	77
11.8.3.9 SPECIFIC PROVISIONS - KEY SITES	77
11.8.3.10 SPECIFIC PROVISIONS - RESIDENTIAL FLAT BUILDINGS	80
11.8.3.11 SPECIFIC PROVISIONS - ANCILLARY DWELLINGS	83
11.8.4 THE VILLAGE CENTRE	85
11.8.4.1 BUILT FORM CONTROLS	85
11.8.4.2 ACCESS, PARKING AND SERVICING	92
11.8.5 THORNTON HALL	94
11.8.5.1 BUILT FORM CONTROLS	94
11.8.6 INDUSTRIAL DEVELOPMENT	97
11.8.6.1 BUILT FORM CONTROLS	97
APPENDIX A – EXAMPLE OF BUILDING ENVELOPE PLAN	98
APPENDIX B – RESIDENTIAL DESIGN PALETTE	99

Part B – North Penrith

11.8.1 Preliminary

This Section was adapted from the North Penrith Design Guidelines which were published by Landcom in 2013, and supplements the North Penrith Concept Plan approval issued by the Minister for Planning and Infrastructure on 9 November 2011.

11.8.1.1 Purpose of this Section

The purpose of this Section is to facilitate the development of retail, commercial, business, residential and light industrial land uses within the North Penrith Precinct in accordance with the North Penrith Concept Plan approval.

11.8.1.2 Land to Which this Section Applies

This Section applies to the North Penrith Precinct, as shown at Figure E11.30. North Penrith comprises approximately 40.6 ha of land that has been identified for a mixed use, transit oriented development.

Figure E11.30 - Land to which this Section Applies



11.8.1.3 Relationship with other Planning Documents

This Section must be read in conjunction with any environmental planning instrument which applies to the land, as well as any Planning Agreement for the North Penrith Precinct.

This Section provides specific controls for the North Penrith Precinct in addition to the general controls elsewhere in this DCP. In the event of an inconsistency between this Section and the rest of the DCP, the requirements of this Section prevail.

11.8.2 Concept Plan

11.8.2.1 Vision

The development of North Penrith is to:

- a) create well-designed spaces that engage and activate its community for living and working;
- b) provide well-connected linkages, nodes and destinations that integrates with a significant water body;
- c) create diverse, yet cohesive, housing products that allow capability to ever changing household needs and formations;
- d) provide a business/employment centre that is complementary and an extension to the Penrith CBD.

Figure E11.31 - Illustrative Concept Plan



Figure E11.32: Artist Impression of the Canal



Figure E11.33: Artist Impression of the Oval



Figure E11.34: Artist Impression of the Village Square



11.8.2.2 Outcomes

The expected outcomes of the North Penrith Precinct are:

1) Transport and Accessibility

- a) A residential density, urban structure and parking provision that supports the establishment of a model transit oriented development.
- b) An integrated and legible network of open space and pathways to encourage pedestrian and cyclist activity, particularly to and from the train station.

2) Urban Design

- a) A dense and interconnected mixture of land uses which include residential, recreational, employment, retail, office and business services.
- b) Create a transit oriented, cohesive development incorporating retail, commercial, business, civic, community, recreation, residential and employment uses.
- c) Create a safe and convenient pedestrian network formed by a closely spaced grid of streets interconnected with public open spaces.

3) Housing and Community

- a) A vibrant urban community of around 900 to 1,000 dwellings.
- b) Meet the growing and ageing population of Penrith through the provision of a diverse range of housing types and sizes.

- c) Around 7ha of open space/canals including a new oval with outdoor recreational facilities, canal edge boardwalk and local parks.

4) Economic

- a) Generate up to 770 direct jobs on the site and over 1,100 flow-on jobs.
- b) Deliver a high level of self-containment in terms of employment generation and retail expenditure, reducing the trip generation of residents, workers and commuters visiting North Penrith.
- c) Cater for the daily needs and services of the North Penrith community and commuters using Penrith Railway Station.
- d) Provide opportunities for employment generating development within a close proximity to public transport services.

5) Environmental

- a) Retention of identified key stands of existing trees.
- b) Mitigation and management of existing flooding issues on the site.

6) Heritage

- a) Enhance the heritage characteristics of Thornton Hall.
- b) Respect the Coombewood curtilage.
- c) Protection of environmental heritage by incorporation of the heritage features and vistas into the road and open space network.

11.8.3 Residential Development

11.8.3.1 Housing Density and Diversity

A. Objectives

- 1) To ensure that a minimum residential density is achieved in the precinct in recognition of its proximity to public transport and the Penrith City Centre.
- 2) To provide a diverse range of housing forms and densities.
- 3) To promote a range of dwellings types to meet the needs of a diverse range of age groups and family types.

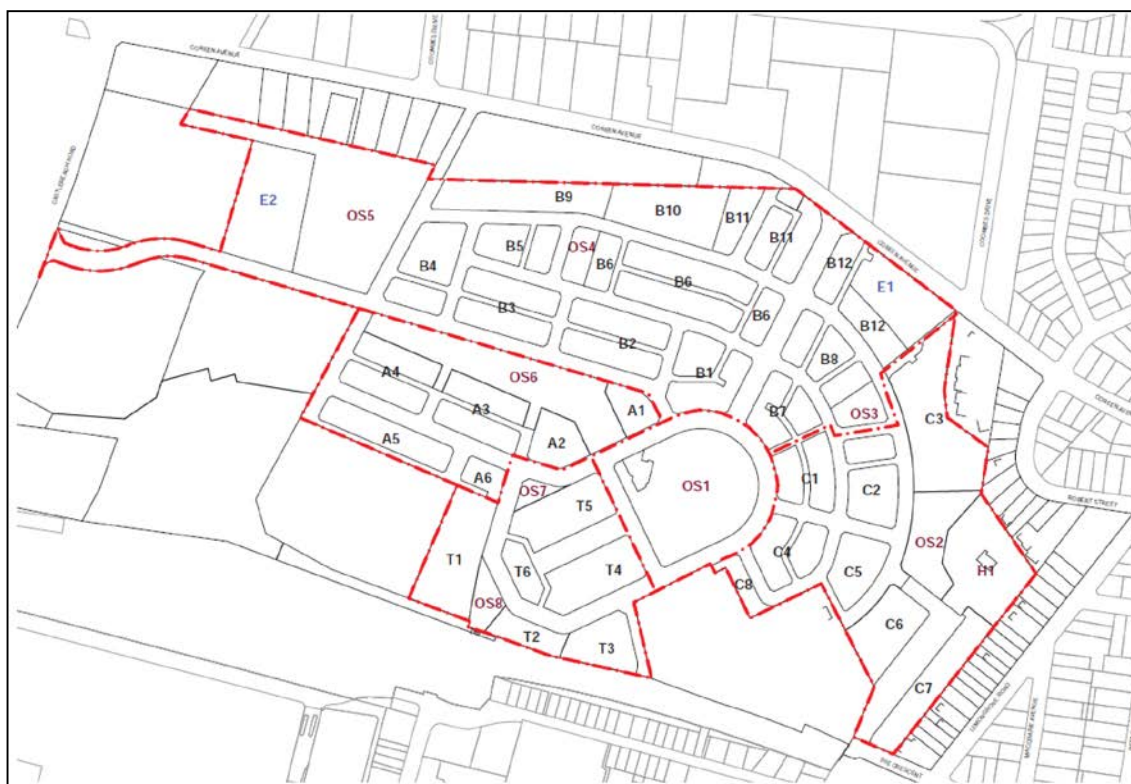
B. Controls

- 1) Between 900 and 1,000 dwellings are envisaged across the whole precinct. To ensure that a minimum of 900 dwellings is achieved as part of a subdivision application that creates more than 20 lots, the applicant is required to demonstrate that the sub-precinct dwelling target ranges shown in Figure E11.35 and Table E11.4 can be achieved.
- 2) Subject to agreement of Council and consultation with relevant landowners, dwelling yields may be 'traded' between sub-precincts as long as it meets overall targets and objectives of this DCP.

Table E11.4: Dwelling Target Ranges

Stage	Dwelling Target
Sub – Precinct A1 – A4	128 – 142
Sub – Precinct B1 – B10	181 – 313
Sub – Precinct C1 – C7	153 – 169

Figure E11.35: Minimum dwelling target plan



11.8.3.2 Subdivision

A. Objectives

- a) To provide a range of densities, lot sizes and dwelling types to foster a diverse community and interesting streetscapes.
- b) To ensure that all residential lots achieve a high level of amenity.
- c) To ensure that development on smaller lots is undertaken in a coordinated manner.

B. Controls

- 1) All applications for Torrens title subdivision proposing residential allotments:
 - a) on land identified at Figure E11.36, or
 - b) with a site area of less than 235m² and with a lot width of less than 8m (as measured at the front facade line)

are to be accompanied by plans for the proposed dwellings on those lots (i.e. an Integrated Housing Development Application). The minimum number of allotments within an 'integrated housing development' is generally to be 3, except where indicated on Figure E11.36.

Note: For the purposes of determining the width of an allotment, the front facade line is defined as being 3m from the front, street boundary alignment.
- 2) For residential allotments with a width greater than or equal to 8m (measured at the front facade line), the subdivision application must include a Building Envelope Plan (see example illustrating guiding principles at Appendix A). The Building Envelope Plan is to:

- a) demonstrate that an appropriate built form and residential amenity can be delivered on the allotment in compliance with the relevant provisions of this DCP,
- b) nominate elements such as front and side building setbacks, the location of zero lot lines, the preferred locations of private open space and garages and specific fencing requirements,
- c) nominate the minimum yield required of any 'super-lot' and / or for residual Integrated Housing Development Application sites.

These restrictions will be approved as part of the subdivision application and are to be complied with by any future application proposing a dwelling on that lot.

- 3) The location of the zero lot line is to be determined with regard to allotment orientation and the ability to achieve with solar access provisions within this DCP. Where a zero lot line is nominated on allotment on the Building Envelope Plan, the adjoining allotment is to include a 900mm easement for maintenance of the boundary wall (and any services along the side of the dwelling/garage) on the adjoining property. No overhanging eaves or the like will be permitted within the easement. The s88B instrument supporting the easement is to be worded so that Council is removed from any dispute resolution process between adjoining allotments.
- 4) For residential development within the R1 General Residential zone (except for residential flat buildings):
 - a) the lot depth is generally to be between 25m and 30m, and
 - b) the minimum lot width is 4.5m (for attached dwellings/semi-detached dwellings) and 8m for dwelling houses).

Note: Variations to (4) are permitted where it is part of an 'Integrated Housing Development Application' and the applicant can demonstrate that a good level of residential amenity can be achieved to both the proposed dwellings and adjacent properties.

- 5) Residential allotments should be rectangular and be oriented to facilitate siting of dwellings and private open space to take advantage of winter solar access and summer sun deflection. The use of battle-axe lots is to be avoided where possible.

Figure E11.36 - Sites that are to be undertaken as Integrated Housing Development Applications



11.8.3.3 Building Envelopes

A. Objectives

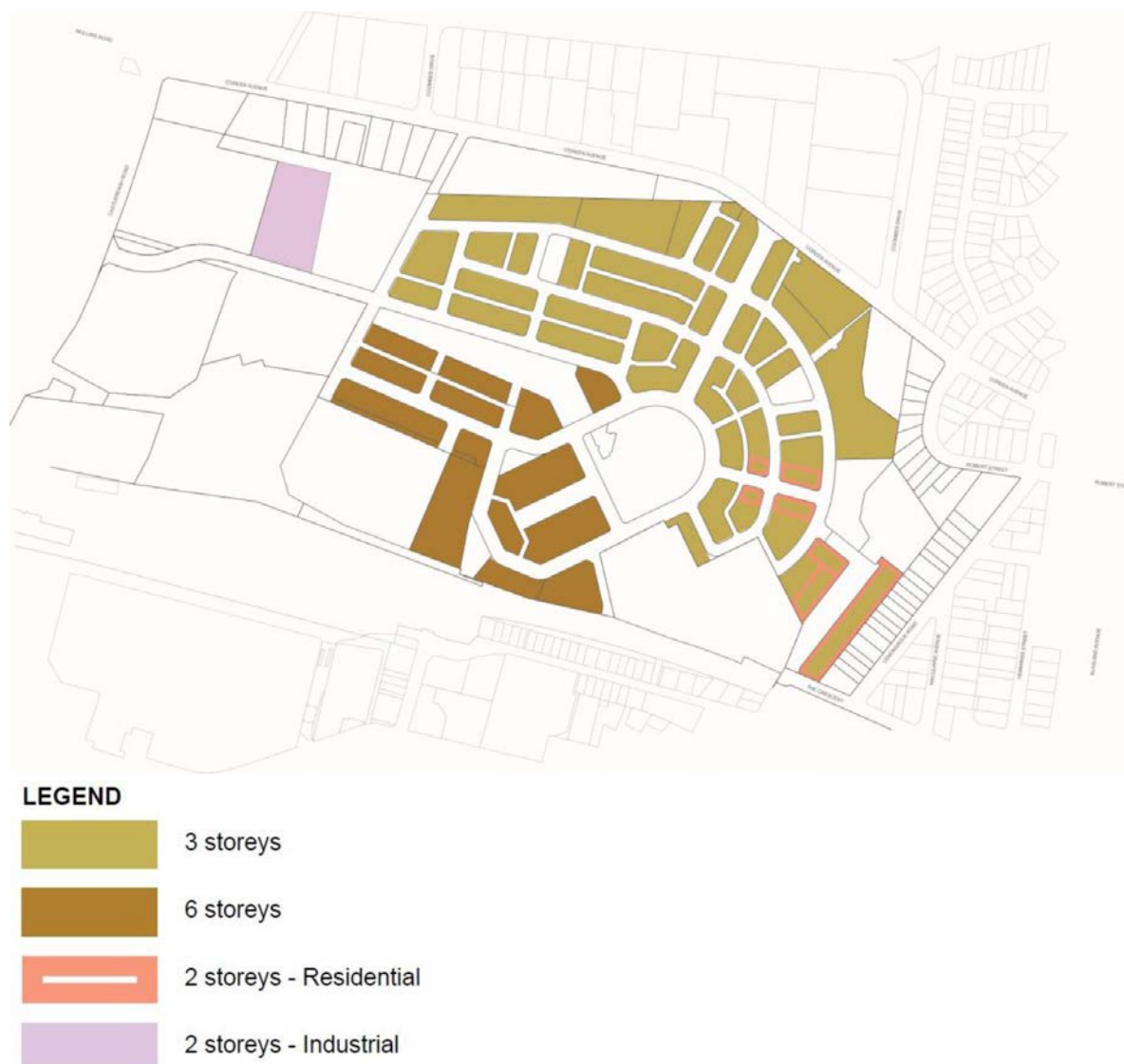
- a) To encourage the efficient use of land and a compact urban environment.
- b) To create attractive and cohesive streetscapes.
- c) To respect the curtilage of and view corridors associated with Thornton Hall.
- d) To manage impacts of development on neighbouring properties in regard to privacy, and overshadowing.
- e) To ensure building heights achieve built form outcomes that reinforce quality urban and building design.

B. Controls

- 1) The maximum number of storeys for residential development is shown at Figure E11.37.
- 2) For all residential development (excluding residential flat buildings), the floor area of the third storey is to be no more than 60% of the second storey.
- 3) The location and siting of the third storey is to ensure adequate solar access and privacy for the lot and adjacent residential lots.
- 4) Development adjacent to a laneway (i.e. ancillary dwelling) is to be no more than 2 storeys.

- 5) A minimum floor to ceiling height of 2.7m is to be provided for all ground floor living spaces.

Figure 11.37 – Maximum building height plan (storeys)



- 6) The maximum depth of a dwelling (exclusive of roofs and privacy screens etc) is:
- 15m for the second storey (identified as L2 on Figures E11.38 and E11.39),
 - 12m for any third storey component of a dwelling (identified as L3 on Figures E11.38 and E11.39).
- 7) The maximum depth of an ancillary dwelling (exclusive of roofs and privacy screens etc.) from the rear boundary is 8m.
- 8) Front setbacks for residential development within the R1 General Residential Zone (except for residential flat buildings) are (see Figures E11.38 and E11.39):
- between 3m and 4.5m (to the front facade line), except on the western side of H1 (Thornton Hall heritage carriageway) where the front setback from the boundary line is to accommodate tree retention and access driveway,

- b) a minimum 5.5m (and a minimum 1m behind the front facade line) for the garage, and
 - c) 0m to the secondary street (for a corner allotment) except for the first 7m of allotment which to be setback at 2m to accommodate the articulation zone requirements at Section 11.8.3.4 Building Design and Articulation (see Figures E11.38 and E11.39).
- 9) The rear setback for the ground floor level of a dwelling is 0.9m. This does not apply to garages and ancillary dwellings adjacent to a rear lane which may be built to the rear boundary. A rear setback of 3m is required for all allotments that back onto the existing residential allotments fronting Lemongrove Road and for Block C3.
- 10) The minimum side and rear setback requirements for residential development within the R1 General Residential Zone (except for residential flat buildings) are to be consistent with Table E11.5 below. Projections permitted into side and rear setback areas include sun hoods, gutters, down pipes flues, light fittings and electricity or gas meters, rainwater tanks and hot water units and the like.

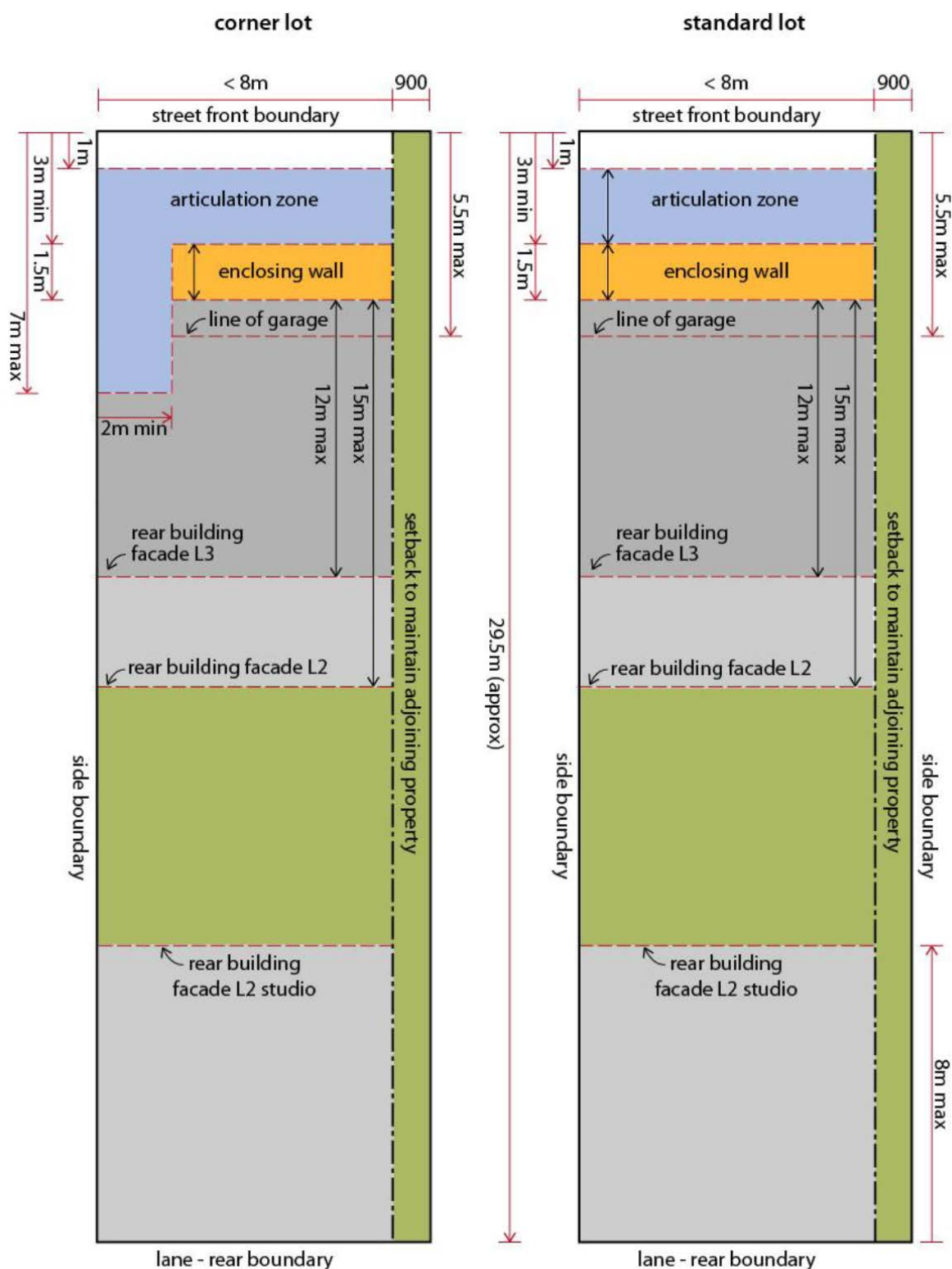
Table E11.5: Minimum side and rear setbacks

Dwelling Type	Minimum Side and Rear Setbacks
Ancillary Dwellings	0m on both sides 0m to rear lane
Multi-unit housing, attached dwellings	0m on both sides
Semi-detached dwellings	0m to one side 0.9m to one side
Dwelling houses (lots <8m wide)	0m on both sides
Dwelling houses (lots 8m wide and greater)	0m to one side 0.9m to one side – except for where permitted by (11) below

- 11) Despite the requirements of Table E11.5, dwelling houses on allotments that back onto existing residential allotments fronting Lemongrove Road, shall achieve:
- a) a minimum 4m setback at the ground level; and
 - b) a minimum 6m setback at the upper level.
- 12) Despite the requirements of Table E11.5, zero setbacks on both side boundaries for ancillary dwellings and dwelling houses are permitted where the following conditions apply:
- a) the dwellings are designed in a coordinated manner so as to ensure compliance with the relevant controls within this DCP, in particular, the private open space, privacy and solar access provisions;
 - b) construction of adjoining dwellings is undertaken either concurrently or sequentially,
 - c) reciprocal maintenance easements are included on adjoining allotment title (as per control 11.8.3.2(3)), and

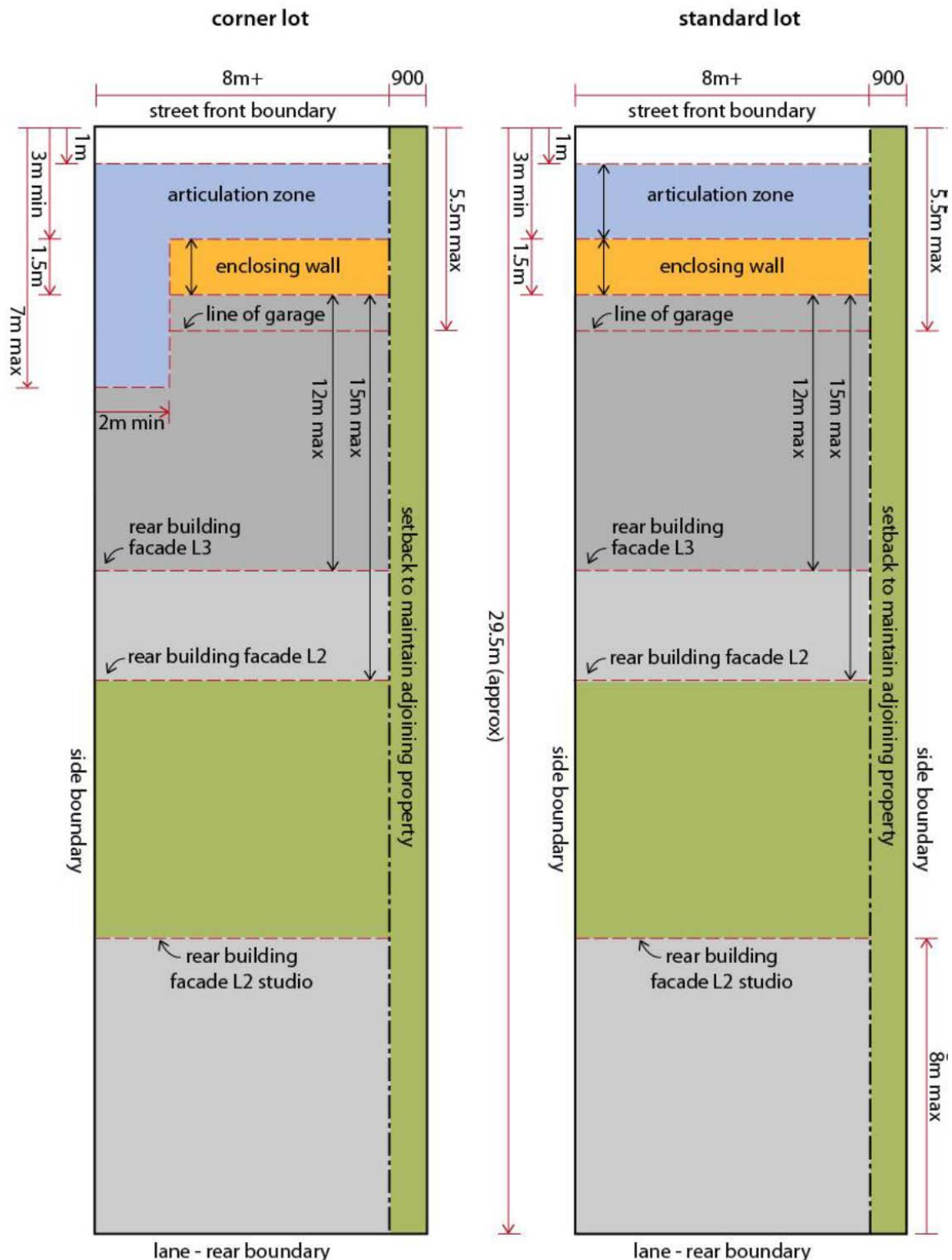
- d) compliance with the relevant aspects of the Building Code of Australia.
- 13) Where a studio loft above a garage straddles a property boundary, the central maintenance setback is not required. Appropriate arrangements for maintenance are to be included within the stratum lot title for the studio loft.

Figure 11.38 - Front and rear setback requirements, standard and corner lots (left), less than 8m wide



- 14) Variations to the building envelope controls contained within Section 11.8.3.3 are permitted where it is part of an 'Integrated Housing Development Application' and the applicant can demonstrate that a good level of residential amenity can be achieved to both the proposed dwellings and adjacent properties.

Figure E11.39 - Front and rear setback requirements, standard and corner lots (left), 8m+ wide



11.8.3.4 Building Design and Articulation

- 1) To ensure that buildings are designed to enhance the existing and future desired built form and character of the neighbourhood.
- 2) To create an attractive and cohesive streetscape through the provision of simple and articulated building and roof forms.

A. Controls

- 1) Particular attention is to be paid to the design quality of the front facade of a dwelling. An articulation zone is to be provided in front of the front facade line as illustrated at Figures E11.38 and E11.39. The articulation zone:
 - a) is to be setback at least 1m from the front boundary,
 - b) must extend at least 7m from the front boundary line along the secondary street frontage (for corner allotments), and
 - c) may extend over 2 storeys (for 2 and 3 storey development).
- 2) The front articulation zone should include at least 1 primary element or 2 secondary elements from the list below. The minimum depth for a secondary element is 500mm.

Table E11.6: List of elements in the front articulation zone

Primary Elements	Secondary Elements
Verandah/Porch	Entry feature or porticos
Balcony (including upper level balcony over garage door)	Awnings or other features over windows
Pergola	Eaves and sun shading
	Window box treatment
	Recessed or projecting architectural elements
	Bay windows

- 3) For corner allotments the articulation zone is to be a minimum depth of 2m from the primary and secondary frontages and may include either primary and/or secondary elements as listed above.
- 4) For allotments located on the southern, eastern and western side of a street, the articulation zone may be designed to incorporate private open space, including principal private open space.
- 5) Consideration should be given to expressing the third storey of a dwelling in a lighter weight manner than the structure below, through the use of material and colours and the like.
- 6) Eaves are to provide sun shading, to protect windows and doors and provide aesthetic interest. Subject to 11.8.3.2(3), eaves should have a minimum of 600mm overhang (measured to the fascia board). Council will consider alternative solutions to eaves so

long as they provide appropriate sun shading to windows and display a high level of architectural merit.

- 7) Building colours, materials and finishes are to be consistent the Residential Design Palette included at Appendix B.
- 8) Multi-coloured roof tiles are not permitted.

11.8.3.5 Private Open Space and Landscaping

A. Objectives

- 1) To provide a high level of residential amenity with opportunities for outdoor recreation and relaxation within the property.
- 2) To enhance the spatial quality, outlook, and usability of private open space.
- 3) To facilitate solar access to the living areas and private open spaces.

B. Controls

- 1) Each dwelling is required to be provided with an area of Private Open Space (POS) and Principal Private Open Space (PPOS) consistent with Table E11.7 below.

Table E11.7: Private Open Space Requirements

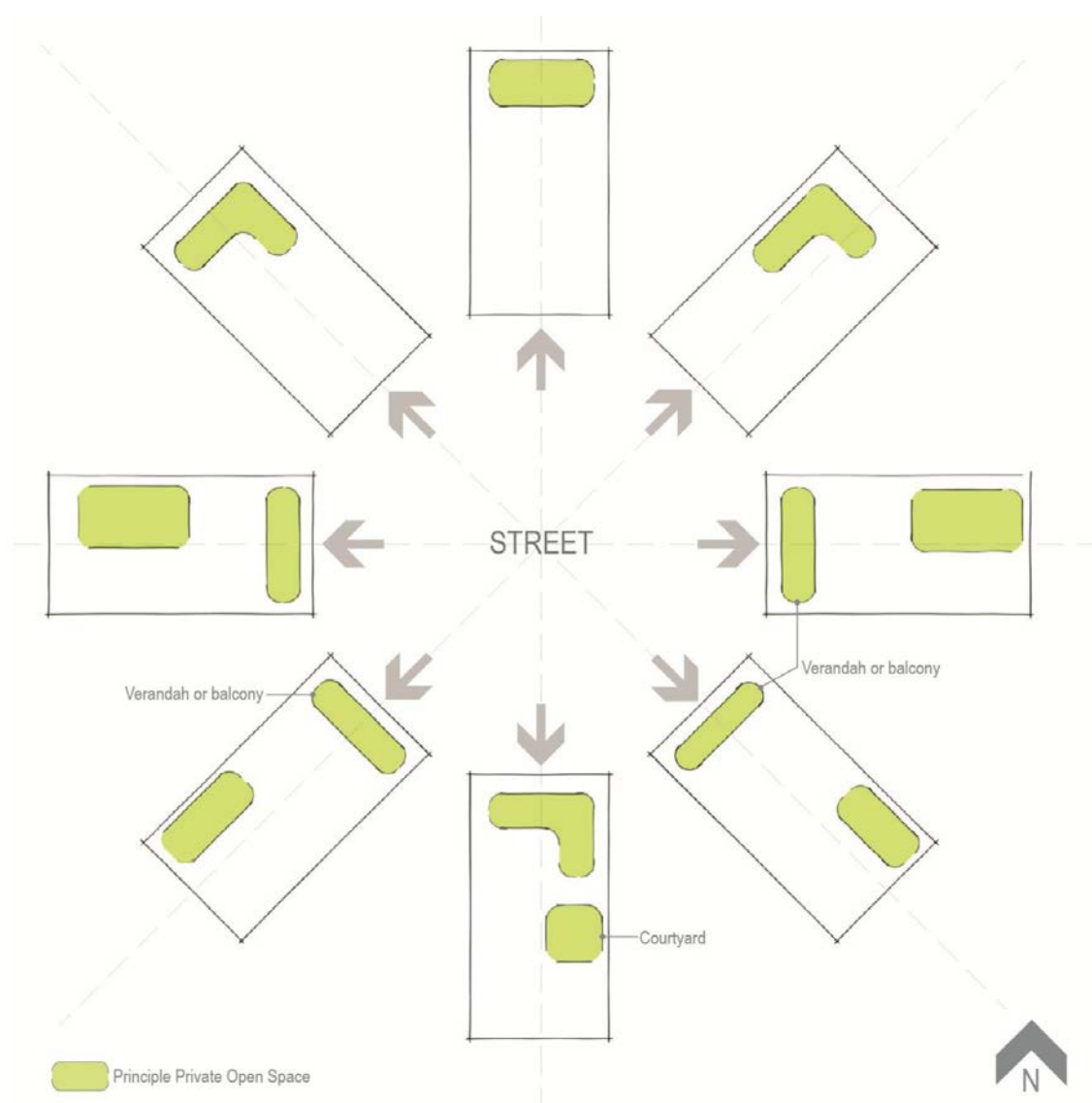
	Studio Loft	Multi-Unit Housing, attached and semi-attached dwellings and dwelling houses		
Lot Width*		<6m	6 – 10m	10m +
Private Open Space	Studio and 1 bedroom: 4m ² and minimum dimension 1m 2+ bedroom: 8m ² and minimum dimension 1m	Minimum 20% of the site area and minimum dimension of 2m	Minimum 20% of the site area and minimum dimension of 2m	Minimum 20% of the site area and minimum dimension of 2m
Principal Private Open Space	N/A	16m ² and minimum dimension of 3m	18m ² and minimum dimension of 3m	24m ² and minimum dimension of 4m

* measured at the Front Facade Line

- 2) The location of PPOS is to be determined having regard to allotment orientation, dwelling layout, adjoining dwellings, landscape features, and the preferred locations of PPOS illustrated at Figure E11.40. Where an allotment is located on the southern, eastern and western side of a street, the PPOS must not be provided exclusively within the front of the allotment between the dwelling and the primary street frontage, but may take the form of a garden court, verandah or balcony within the side and/or rear setback. PPOS located in the front of a dwelling must be useable and adjacent to a living space.

- 3) Where the PPOS is a balcony or roof top area, it must be provided with a fence or landscaped screen at least 1m in height, and be directly accessible from a habitable room.
- 4) The POS of the studio loft is to be located and designed so as to minimise visual and acoustic privacy impacts upon the principal dwelling and its associated POS.
- 5) The majority of dwellings within any given Development Block should receive at least 2 hours of sunlight between 9am and 3pm at the winter solstice (21 June) to 50% of the required PPOS of both the proposed development and the adjoining properties.
- 6) Despite 11.8.3.5 (5) above, where an integrated housing development application is proposed, a minimum 70% of the dwellings proposed by that application should receive at least 2 hours of sunlight between 9am and 3pm at the winter solstice (21 June).
- 7) The first 1m of a site, measured from the front boundary, (excluding driveways, footpaths etc.) is to be soft landscaped. Landscaping within the front yard is to comprise species from the Residential Design Palette included at Appendix B.

Figure E11.40- Private Open space location principles



11.8.3.6 Fencing

A. Objectives

- 1) To enhance the quality of the streetscape through consistent and co-ordinated front fencing.
- 2) To define the public and private domain and provide a sense of enclosure to the front yard.
- 3) To ensure boundary fencing is of a high quality and does not detract from the streetscape.

B. Controls

- 1) Front fencing is required for all residential allotments. Front fencing is to:
 - a) be between 700mm and 1.2m high (including feature elements),
 - b) be generally open in design and may comprise a solid component that is no higher than 700mm,
 - c) extend along the side boundaries to the front facade line (or at least 1m behind the front facade line for dwelling houses),
 - d) extend along the secondary street frontage to match the length of the articulation zone, and
 - e) are not to impede safe sight lines for pedestrians and / or traffic.
- 2) The design, materials and colour of front fencing is to be consistent with the Residential Design Palette included at Appendix B.
- 3) Where a dwelling is located adjacent to open space, boundary fencing is to be of a high quality material and finish. Articulated post and paling fences (with exposed posts) are preferred in these locations. The design of the fencing is to permit casual surveillance of the open space and provide the dwelling with outlook towards the open space.
- 4) Timber paling or lapped / capped fencing only can be used internally between allotments. No sheet metal fencing is permitted within the project.

11.8.3.7 Garages, Site Access and Parking

A. Objectives

- a) To provide a level of residential parking appropriate for the precinct's location, in close proximity to Penrith Railway Station.
- b) To reduce the visual impact of garages, carports and parking areas on the streetscape and improve dwelling presentation.
- c) To ensure the design of garages do not dominate the frontage of the dwelling.

B. Controls

- 1) The parking rates provided in this Section override the parking rates outlined in the Transport, Access and Parking Section of this DCP.
- 2) The maximum parking rates for multi-unit housing, attached and semi-detached dwellings and dwelling houses are:
 - a) 1-2 bedroom: 1 space per dwelling, and

- b) 3+ bedroom: 2 spaces per dwelling.
 - 3) All visitor parking is to be provided on-street.
 - 4) The garage arrangement is to be consistent with Figures E11.41 and E11.42 in that:
 - a) vehicle access for lots with rear lane access should only be via the rear lane,
 - b) for lots less than 8m wide, all garaging is to be accessed from the rear lane (if rear loaded). If there is no rear laneway, a single / tandem garage is permitted at the front,
 - c) for lots between 8m and 12m wide, garaging may comprise a single / tandem front loaded garage or a rear loaded, double / tandem garage, and
 - d) for lots greater than 12m wide, garaging may either comprise a double front loaded garage or a rear loaded, double / tandem garage.
- Note:** For the purposes of determining the width of an allotment, the front facade line is defined as being 3m from the front, street boundary alignment.
- 5) The maximum width of a garage door is 3.2m and 6m for single/tandem and double garages respectively. Where a studio loft is included, its own garage or carport requires access from the rear lane.
 - 6) Carports and garages are to be treated as an important element of the dwelling facade and interface with the public domain. They are to be integrated with and complementary, in terms of design and material, to the dwelling design. Garage doors are to be visually recessive through use of materials, colours, overhangs and the like.
 - 7) The location of driveways is to be determined with regard to dwelling design and orientation, street gully pits and tree bays and is to maximise the availability of on-street parking.
 - 8) All parking and driveway access is to comply with AS 2890.1 – 2004.

Figure E11.41 - Garage location principles (<8m and 8-12m wide lots)

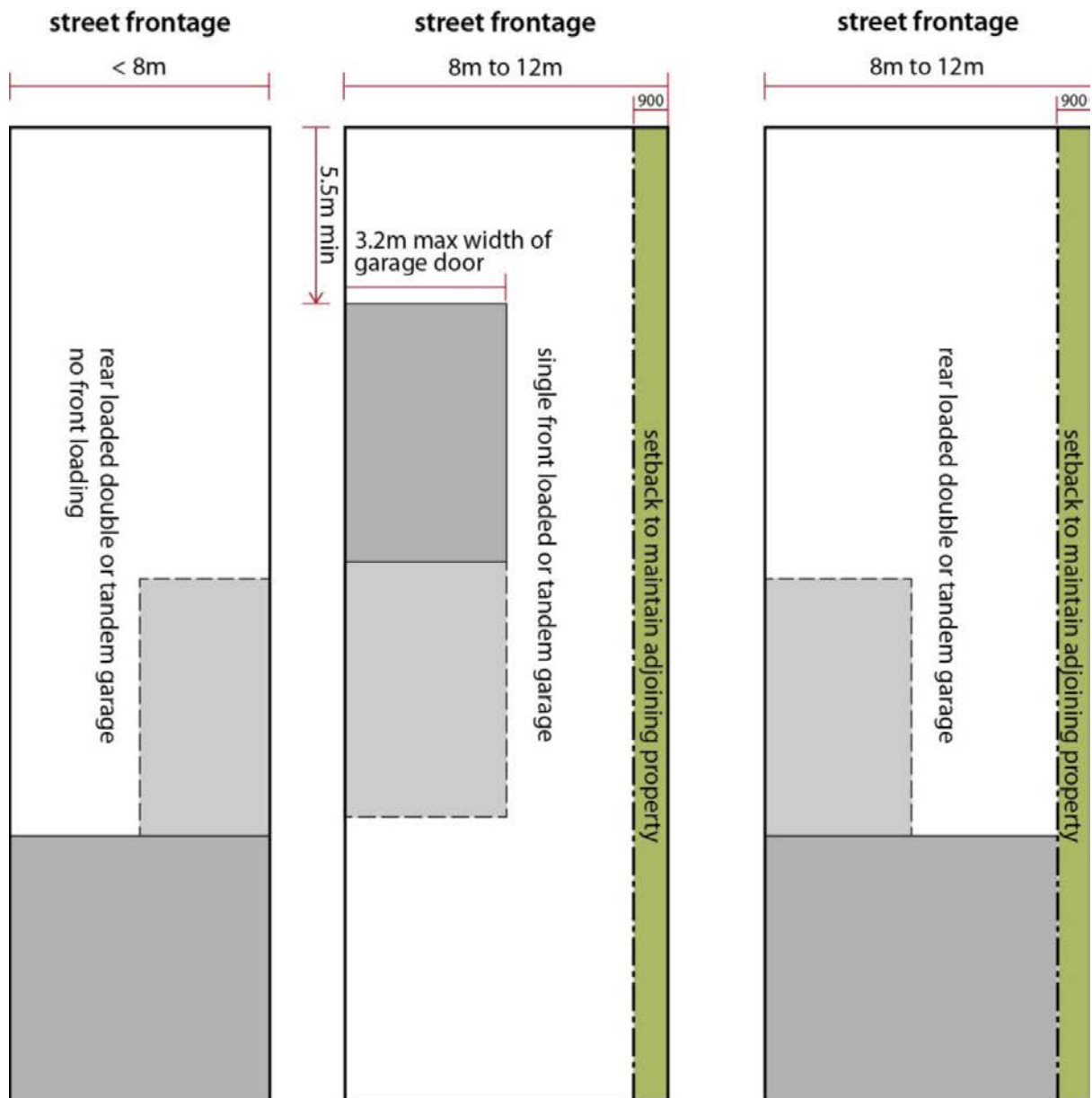
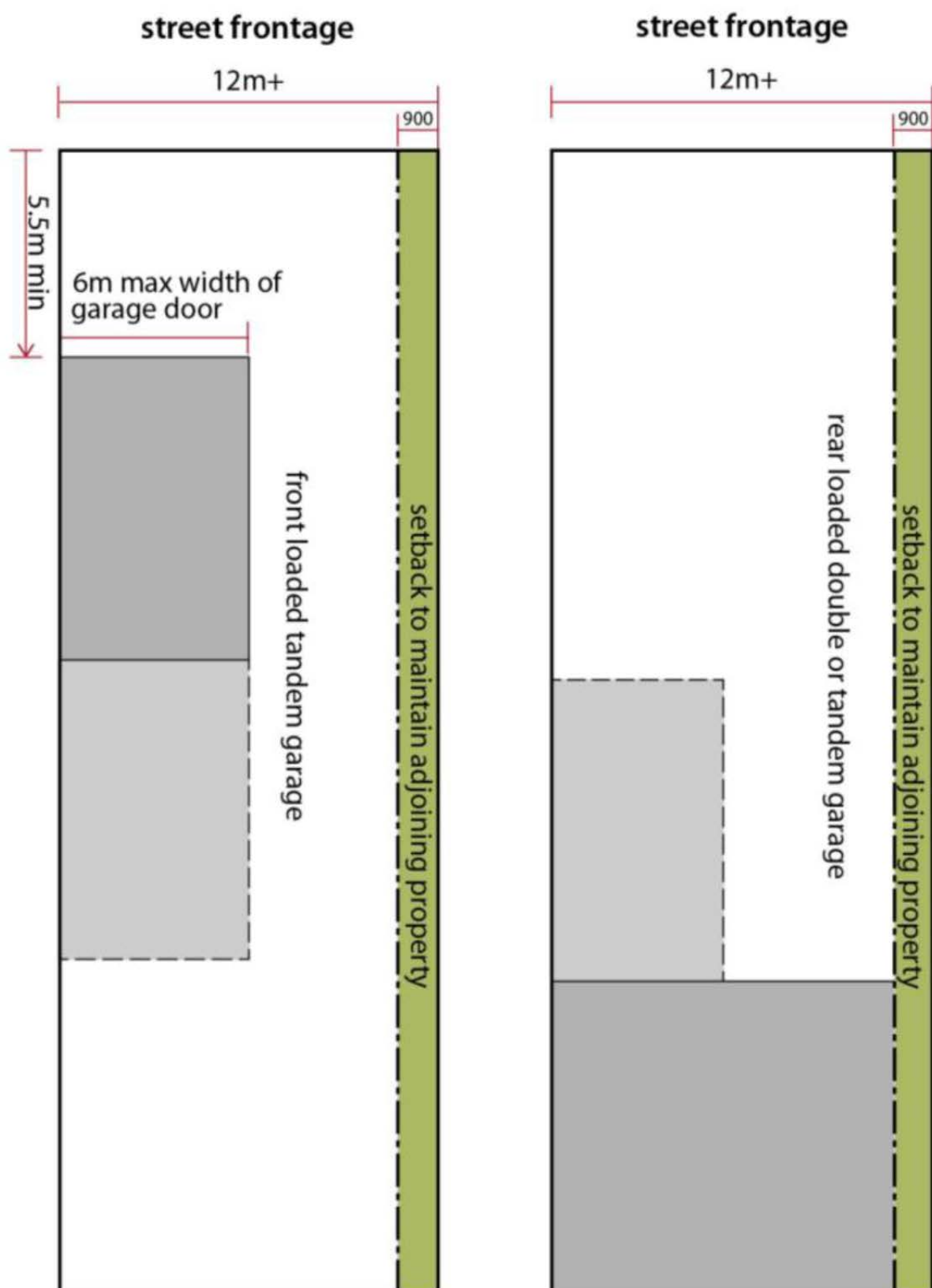


Figure E11.42 - Garage location principles (12m+ wide lots)



11.8.3.8 Visual and Acoustic Amenity

A. Objectives

- a) To ensure buildings are designed to achieve the highest possible levels of visual and acoustic privacy.
- b) To protect visual privacy by minimising direct overlooking of habitable rooms and private open space.
- c) To contain noise within dwellings and minimise the intrusion of noise from outdoor areas.

B. Controls

- 1) Direct overlooking of main habitable areas and private open spaces of adjacent dwellings should be minimised through building layout, window and balcony location and design, and the use of screening devices, including landscaping.
- 2) Habitable room windows with a direct sightline to the habitable room windows in an adjacent dwelling within 3m are to:
 - a) be obscured by fencing, screens or appropriate landscaping, or
 - b) be offset from the edge of one window to the edge of the other by a distance sufficient to limit views into the adjacent window, or
 - c) have sill height of 1.5m above floor level, or
 - d) have fixed opaque glazing in any part of the window below 1.5m above floor level.
- 3) A screening device is to have a maximum of 25% permeability to be considered effective.
- 4) The design of attached dwellings must minimise the opportunity for sound transmission through the building structure, with particular attention given to protecting bedrooms and living areas.
- 5) In attached dwellings, bedrooms of one dwelling are not to share walls with living spaces or garages of adjoining dwellings, unless it is demonstrated that the shared walls and floors meet the noise transmission and insulation requirements of the Building Code of Australia.
- 6) Residential development in close proximity to the railway corridor, Coreen Avenue, the east and west sides of the Boulevard, the upgraded commuter car park and those flanking the entry road from Coreen Avenue to the commuter car park, are to include design measures so as to achieve the following internal noise levels at these residences:
 - a) a target internal noise level of 35 dB(A) LAeq is to apply in the sleeping areas, and
 - b) a target internal noise level of 40 dB(A) LAeq in other living areas.

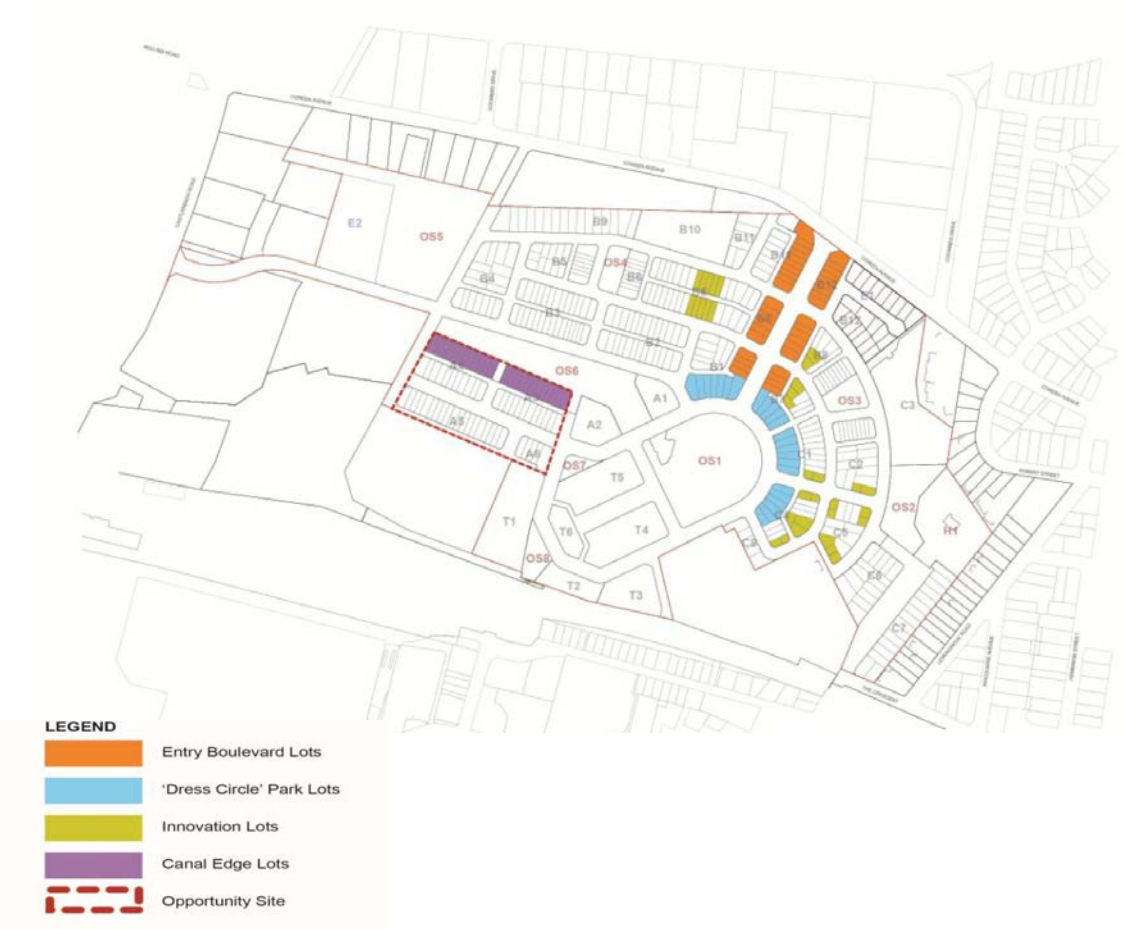
11.8.3.9 Specific Provisions - Key Sites

A. Objectives

- a) To provide additional guidance with respect to the urban design outcomes sought for key sites within the precinct.
- b) To promote development that results in a high quality public and private domain interface, in particular, the streetscape appearance of development.

- 1) Development on the key sites nominated at Figure E11.43 is to achieve the desired outcomes specified below.

Figure E11.43: Specific Provisions for key sites



Entry Boulevard Lots

- 1) A minimum building height of 2 storeys is required for all lots. A third storey is preferred on corner lots.
- 2) Dwelling facades are to display high quality materials and finishes consistent with the Residential Design Palette (Appendix B).
- 3) Despite Section 11.8.3.7 Garages, Site Access and Parking, all garaging is to be from the rear lane.
- 4) Front fencing is to generally consistent and assist in unifying the streetscape.

'Dress Circle' Park Lots

- 1) A building height of 3 storeys is encouraged for all dwellings (except for ancillary dwellings).
- 2) A high level of consistency of built form and massing is required across the dwelling frontages to achieve a harmonious streetscape and a strong urban edge to the oval.

- 3) Buildings are to take advantage of the location overlooking the oval with front balconies and terraces.
- 4) Dwellings are to display high quality materials and finishes consistent with the Residential Design Palette (Appendix B).
- 5) Identical facades are to be limited to no more than 4 dwellings in a row.
- 6) Despite Section 11.8.3.7 Garages, Site Access and Parking, all garaging is to be from the rear lane.

Innovation Lots

- 1) Housing is to demonstrate how compact, affordable dwellings can achieve a high level of internal amenity.
- 2) Dwellings are to be single or double storey and may include 0m side and rear setbacks.

Canal Edge Lots

- 1) A minimum building height of 3 storeys is encouraged for all residential dwellings (except for ancillary dwellings).
- 2) Building form and massing is to create a strong consistent edge to the canal.
- 3) Entrances stairs to dwellings off the canal walk are to be paired together.
- 4) The ground floor level and front yard / private open space of the dwellings is to be raised above the level of the pedestrian boardwalk to provide privacy for the dwellings.
- 5) Detailing of front fencing and landscaping (fronting the canal) is to balance privacy and surveillance issues. The front fencing treatment is to be of high quality and consistent along the full length of the canal frontage.
- 6) The dwelling facades are to display high quality materials and finishes consistent with the Residential Design Palette (Appendix B).
- 7) Buildings are to take advantage of the location overlooking the canal and include high levels of glazing and front balconies and terraces.
- 8) Despite Section 11.8.3.7 Garages, Site Access and Parking, all garaging is to be from the rear lane.

Opportunity Site

- 1) Buildings envelopes are to provide a legible and permeable development pattern.
- 2) The Opportunity Site may accommodate a variety of land uses, in addition to residential, such as commercial office, institution, education uses or the like, adjacent to the Village Centre, which is .
- 3) Non-residential uses fronting the canal should address the canal with semi-active uses.
- 4) The road and block pattern within the site may vary in response to alternative uses.
- 5) Building heights (of up to 6 storeys) are permitted for uses on the Opportunity Site.
- 6) A range of retail, business, and commercial premises should be provided at the ground level to activate the street frontages within the Opportunity Site.
- 7) Development within the Opportunity Site should promote pedestrian activity and cycling and provide facilities for pedestrians and cyclists.

11.8.3.10 Specific Provisions - Residential Flat Buildings

A. Objectives

- a) To establish high quality residential flat developments that have a good level of amenity.
- b) To provide additional guidance with respect to the urban design outcomes for residential flat buildings in the precinct.

B. Controls

- 1) Residential flat development is to be generally consistent with the guidelines set out within the NSW Residential Flat Design Code and the development controls in the table below. If there is any inconsistency, the development controls below prevail.
- 2) In addition, the parking rates provided in Table E11.8 override the parking rates outlined in the Transport, Access and Parking Section of this DCP.

Table E11.8: Development Controls for Residential Flat Buildings

Element	Control
Minimum Lot Size	650m ²
Maximum Building Height	Maximum 6 storeys, except for Block C3 which is 3 storeys
Maximum car parking rates	Studio: 0.5 spaces per dwelling 1 – 2 bedroom: 1 space per dwelling 3+ bedrooms: 2 spaces per dwelling Visitor parking on street

- 3) Development on the residential flat development sites nominated at Figure E11.44 is to achieve the desired outcomes specified below.

Note: Residential flat buildings may occur on sites other than those nominated at Figure E11.44.

Figure E11.44 – Sites nominated for key residential flat development



Blocks A1 – A6

- 1) Front buildings onto streets with active uses where possible.
- 2) A range of retail, business, and commercial premises should be provided at the ground level to activate the street frontages within the Opportunity Site particularly.
- 3) Development is to include or facilitate public pedestrian/cycle connections. Public access and connections to public access is to be provided at development application stage. A staging plan showing how the proposed development will connect to the public access should be provided with each development application.
- 4) The ground floor level and front yard / private open space of the dwellings is to be raised above the level of the canal / street to provide privacy for the dwellings.
- 5) Buildings are to take advantage of the location overlooking the canal and oval with front balconies and terraces.
- 6) Parking should be screened from the street and canal interfaces. Underground parking is preferred.
- 7) Block A2 should include a ground floor cafe/neighbourhood shop adjacent to the oval.
- 8) Streets and lanes are to:
 - a) be clear and direct throughways for pedestrians with paving finishes, lighting etc. that are appropriate for a pedestrian route.
 - b) provide public access at all times, and
 - c) have signage indicating public accessibility.

Blocks T3 – T5

- 1) Residential uses at ground floor should be designed as 'live/ work' spaces.
- 2) The residential component is to be consistent with relevant controls in Section 11.8.4 The Village Centre.

Block C3

- 1) Existing highlighted trees identified at Figure E11.45 are to be retained.
- 2) No excavation or disturbance of area around the trees identified in Figure E11.45.
- 3) The site is to be retained as whole and not re-subdivided (except for strata or community title). The trees are to be retained in common property.
- 4) Boundary fencing with Open Space (OS2) is to be transparent of high quality materials.

Figure E11.45: Block C3 tree retention



11.8.3.11 Specific Provisions - Ancillary Dwellings

A. Objectives

- a) To encourage a diversity of affordable housing product.
- b) To provide housing and accommodation options for a range of family types and age groups.
- c) To promote innovative housing solutions compatible with the surrounding residential environment.
- d) To provide passive surveillance of rear lanes and shared driveways.
- e) To encourage the use of studios over garages to provide surveillance, work from home or residential accommodation opportunities.

B. Controls

- 1) Subdivision applications that involve the creation of a laneway are to nominate the preferred location of an ancillary dwelling so as to comply with the generally controls with the indicative controls provided at Appendix A and achieve an acceptable degree of passive surveillance within the laneway. The preferred locations for ancillary dwellings are shown at Figure E11.46.
- 2) Ancillary dwelling development is to be consistent with the controls in the table below.
- 3) The parking rates provided in this Section override the parking rates outlined in the Transport, Access and Parking Section of this DCP.

Table E11.9: Controls for ancillary dwellings

Element	Control
Setbacks	0m to sides and laneway
Maximum building height	2 storeys (i.e. 1 floor above garage)
Private Open Space (required for studio lofts only)	Studio and 1 bedroom: 4m ² , minimum dimension 1m 2 or more bedroom: 8m ² , minimum dimension 1m
Maximum car parking	Secondary Dwellings: 0 spaces Studio lofts: 1 space

- 4) The design and layout of studio lofts is to minimise overlooking and overshadowing of the private space of the principal dwelling and any adjacent dwellings.
- 5) Strata title subdivision of a studio loft into a separate allotment will be permissible only where the following are provided:
 - a) appropriate private open space,
 - b) separate pedestrian access,
 - c) one on-site car parking space,
 - d) separate services for mail delivery and waste collection, and an on-site garbage storage area which is not visible from public street,
 - e) separate connections and metering for utilities, and
 - f) compliance with the Building Code of Australia.

Figure E11.46 - Preferred location of ancillary dwellings



11.8.4 The Village Centre

11.8.4.1 Built Form Controls

For the purposes of this Part, the Village Centre is all land that is zoned B4 Mixed Use.

A. Objectives

- a) To encourage a vibrant and active mixed use village centre and cater for the needs of the North Penrith residents.
- b) To create an urban village environment that is complementary to its location near the Penrith City Centre and the Penrith Railway Station.
- c) To provide the opportunity to accommodate a large format commercial and / or education use as part of the Village Centre.
- d) To provide consistent streetscapes through control of the built form visible from the public domain.
- e) To ensure developments are safe and secure for pedestrians and contribute to the safety of the public domain.
- f) To provide shelter from sun, wind and rain for public streets where most pedestrian activity occurs.
- g) To ensure buildings and places are accessible to people with a disability.
- h) To ensure that all signage and advertising achieves a very high level of design quality in terms of graphic design, its relationship to the architectural design of buildings and the character of streetscapes.
- i) To ensure buildings achieve a high level of environmental sustainability.

B. Controls

- 1) The location of preferred land uses within the Village Centre is to be generally consistent with the Figure E11.47. The nominated 'Opportunity Site' may be developed for commercial, educational uses and the like should the demand arise.
- 2) Building heights within the Village Centre are to be a minimum of 2 storeys, excluding the supermarket, and a maximum of 6 storeys.
- 3) The ground floor of all mixed-use buildings is to have a minimum floor to ceiling height of 3.6m in order to provide for flexibility of future use. Above ground level, minimum floor to ceiling heights are 3.3m for commercial office, 3.6m for active public uses, such as retail and restaurants, and 2.7m for residential.
- 4) Building setbacks / build-to lines within the Village Centre are to be consistent with Figure E11.48. Buildings are generally to be built to the street/square alignment. No upper level setbacks are required.

Figure E11.47 - Village Centre location of preferred land uses



LEGEND	
	High Density Residential
	Med Density Residential
	Low Density Residential (heritage)
	Open Space
	Retail
	Public Carpark
	Commercial
	Employment
	Opportunity Site

Figure E11.48 - Village Centre build to lines



5) Building frontage types within the Village Centre are to be generally consistent with Figures E11.49 and E11.50 and Table E11.10 below.

Table E11.10: Building frontage characteristics

Frontage Type	Characteristics
Village Square colonnade	<ul style="list-style-type: none"> Continuous and consistent frontage treatment around the Village Square required with linkage to railway station entrance. May be in the form of a colonnade, posted verandah or similar structure. Minimum height of 8m to the top of the colonnade. Must extend over 2 storeys with a minimum clear depth of 3m and height of 3.6m (at ground level).
Awnings	<ul style="list-style-type: none"> Continuous and intermittent awnings required as per Figure E11.50. To be solid element (not glazed), at an angle of 90° to the wall (i.e. not angled upwards) May be cantilevered or suspended

Frontage Type	Characteristics
	<ul style="list-style-type: none"> • Dimensions: <ul style="list-style-type: none"> ▪ Min. 3m deep (to allow street trees etc.); ▪ Min. soffit height of 3.2m and max of 4m; ▪ Low profile, with slim vertical fascias or eaves (generally not to exceed 300mm). • To be designed to match building facades and be complementary to those of adjoining buildings • Awnings to wrap around corners where a building is sited on a street corner • Vertical canvas drop blinds may be used along the outer edge of awnings. • Provide under awning or wall mounted lighting to facilitate night use and to improve public safety • One under-awning sign may be attached to the awning, at minimum intervals of 6m of the awning frontage • Temporary/pull down awnings permitted on intermittent awnings frontage.
Shelter to car park	<ul style="list-style-type: none"> • To provide continuous weather shelter between Village Square and the car park. • May be cantilevered or suspended with a min height of 3.2m. • Is to be well lit and publicly accessible at all times.

Figure E11.49 - Village Centre frontage types

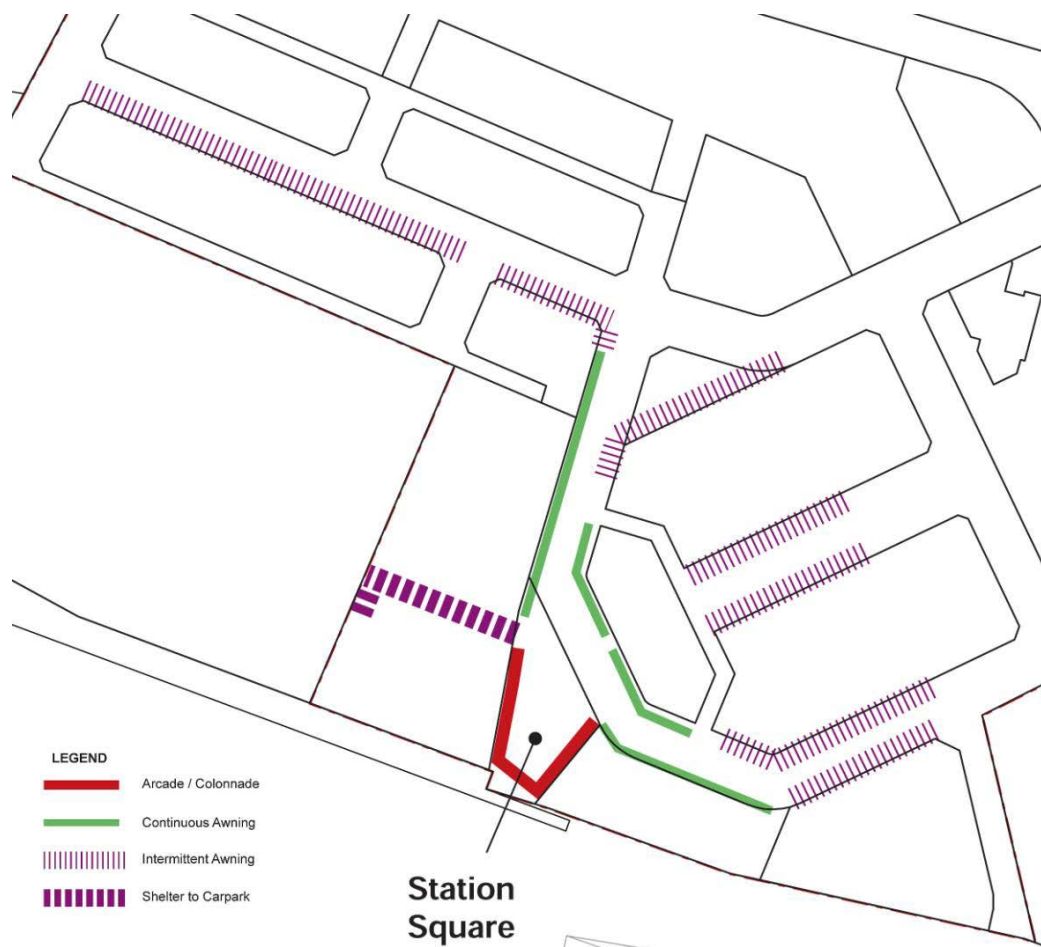


Figure E11.50: - Examples of different frontage types within the Village Centre

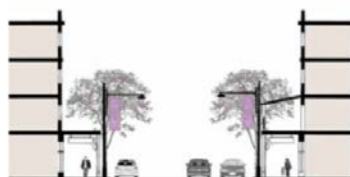


Colonnade: This frontage type is appropriate for retail shopfronts around the Station Square. It can also provide access to commercial offices on levels one and two.



Awnings: The building is built to the frontage line. An awning attached to the building facade just underneath the first floor "transition" line, overlaps the footpath by 3m.

This frontage type is appropriate for conventional retail shopfronts, as well as showrooms or offices.



Posted Verandah and Posted Awning: The building is built to the frontage line. A posted verandah or posted awning is attached to the buildings facade and overlaps the footpath by 3m.

This frontage type is appropriate for conventional retail shopfronts, commercial buildings and mixed use.



Garden Forecourt: The majority of the building is setback 3m from the frontage line creating a garden forecourt for residential apartments. A front fence defines the front property boundary and has a maximum height of 1.2m with hedge behind.

- 6) Street frontages are required at ground level of buildings as shown at Figure E11.51 and Table E11.11 below.

Table E11.11: Street Frontage Requirements

Street Frontage Type	Characteristics
Active	<ul style="list-style-type: none"> Retail shop fronts and entries. Cafe / restaurants with direct access to the street.
Semi-active	<ul style="list-style-type: none"> Active street frontage uses Glazed entries to commercial and residential lobbies occupying less than 50% of the street frontage, to a maximum of 12m frontage. Active office uses, such as reception, if visible from the street. Public building if accompanied by an entry.
Street address	<ul style="list-style-type: none"> Active and semi-active street frontage uses Residential entries, lobbies, and habitable rooms with clear glazing to the street not more than 1.2m above street level, and does not include car parking areas

Figure E11.51 - Village Centre active frontages plan



- 7) Main building entry points should be clearly visible from primary street frontages and enhanced as appropriate with awnings, building signage or high quality architectural features that improve clarity of building address and contribute to visitor and occupant amenity.
- 8) Mixed use buildings within the Village Centre are to:
 - a) provide direct 'front door' access from ground floor residential units,
 - b) provide clearly separate and distinguishable commercial and residential entries and vertical circulation, and
 - c) provide multiple entrances for large developments including an entrance on each street frontage.
- 9) To facilitate the future conversion of ground floor residential uses to non-residential uses, the s88B instrument is to include a provision stating that the body corporate is not to unreasonably restrict or limit the ability for such a conversion to occur.
- 10) The design and provision of facilities for persons with a disability including car parking must comply with Australian Standard AS 1428 Parts 1 and 2 (or as amended) and the *Commonwealth Disability Discrimination Act 1992* (as amended). A report from an accredited access consultant is to be submitted with a development application (where relevant), indicating the proposal's compliance.
- 11) The solid to void ratio is to be generally 60/40 for above ground levels. External materials and finishes:
 - a) should be constructed of high quality and durable materials and finishes with 'self-cleaning' attributes (e.g. face and rendered brickwork, stone, concrete and glass);
 - b) consider the views/appearance from the commuter car park and the railway line;
 - c) maximise glazing for retail uses at ground level;
 - d) avoid large expanses of blank walls; and
 - e) are not to include highly reflective finishes and curtain wall glazing above ground floor level.
- 12) The design of roof plant rooms and lift overruns is to be integrated into the overall architecture of the building, and in residential buildings may be screened by roof pergolas.
- 13) As part of the first major retail/commercial development within the Village Centre, a signage strategy is to be prepared and submitted for approval and is to:
 - a) identify the preferred locations and quantum of all building identification and advertising signage,
 - b) include a palette of preferred materials, signage types and graphic style,
 - c) outline proposed illumination requirements so as to consider its impact on future, nearby residential uses,
 - d) promote a high quality, co-ordinated approach to signage within the Village Centre and minimise visual clutter, and
 - e) include details of any way finding signage.

Proposed signage within future development is to be consistent with the approved signage strategy.

- 14) Non-residential developments including mixed-use developments with a construction cost of \$1 million or more are to demonstrate a commitment to achieving no less than 4

stars under Green Star and 5 stars under the Australian Building Greenhouse Rating system.

- 15) All dwellings, including those dwellings in a mixed-use building and serviced apartments which are intended to be or are capable of being strata titled, are to demonstrate compliance with the State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004.
- 16) For commercial buildings that will be accommodating 'general office areas', the target internal noise level is to be 40 dB(A) LAeq.

11.8.4.2 Access, Parking and Servicing

A. Objectives

- a) To provide an appropriate level of on-site parking consistent with the principles of transit oriented development.
- b) To support the complementary use and benefit of public transport and non-motorised modes of transport such as bicycles and walking.
- c) To provide adequate space for parking and manoeuvring of vehicles (including service vehicles and bicycles).
- d) To reduce the impact of vehicular access on the public domain.

B. Controls

- 1) The parking rates provided in this Section override the parking rates outlined in the Transport, Access and Parking Section of this DCP.
- 2) Maximum parking rates are to be in accordance with Table E11.12. The preferred location of and access to car parking within the Village Centre is shown at Figure E11.52.

Table E11.12: Parking Rates

Development Type	Maximum Car Parking Rate
Commercial / Retail	1 space per 50m ² GFA*
Supermarket	1 space per 26m ² GFA
Residential <ul style="list-style-type: none"> • Studio • 1 – 2 bedrooms • 3 + bedrooms • Visitors • Car wash bay 	<ul style="list-style-type: none"> • 0.5 spaces per dwelling • 1 space per dwelling • 2 spaces per dwelling • On-Street only • 1 space for car washing for every 50 units up to a maximum of 4 spaces per building.
Other uses	In accordance with the Transport, Access and Parking Section of this DCP.

** A minimum of 1 space per 75m² GFA is required for all commercial / retail uses*

- 3) Accessible car spaces should be in accordance with the Access to Premises Standards, Building Code of Australia and AS2890.

Bicycle parking shall be provided in accordance with the Transport, Access and Parking Section of this DCP.

- 4) Where above ground parking is proposed, the location of the parking area must:
- a) be located on the side or rear of the site, and not be visible from the street and street frontage;
 - b) be landscaped or screened so that cars parked in the parking area are not visible from adjoining buildings or the street/street frontage; and
 - c) allow safe and direct access to the building's entry points.
- 5) Where possible, natural ventilation is to be provided to underground parking areas with ventilation grilles and structures that are:
- a) integrated into the overall façade and landscape design of the development,
 - b) located away from the primary street facade, and
 - c) oriented away from windows of habitable rooms and private open space areas.
- 6) Car parking above ground level is to have a minimum floor to ceiling height of 2.8m so it may be adapted to another use in the future.
- 7) All parking provided on site is to meet AS2890 and where, appropriate AS1428.

Figure E11.52 - Village Centre preferred location of car parking



11.8.5 Thornton Hall

11.8.5.1 Built Form Controls

A. Objectives

- a) To conserve the heritage significance of Thornton Hall including its setting and its relationship with its surroundings.
- b) To provide an ongoing use that is appropriate for the heritage significance of the building.
- c) To encourage removal of inappropriate alterations and additions and the reconstruction of significant missing elements of the building.

B. Controls

- 1) Any alteration and additions to Thornton Hall is to be consistent with the following principles:
 - a) retain and conserve significant building fabric,
 - b) remove intrusive additions, including the verandah enclosures and brick porch,
 - c) reconstruct verandahs based on the evidence provided in early photographs. Consideration should be given to interpreting the balcony/parapet structure that was accessed via the roof,
 - d) external painting of the original section of Thornton Hall should be based on colours that were used during the last quarter of the nineteenth century,
 - e) retain significant internal spaces and significant internal fabric. This should include 1930s fireplaces, ceilings, layout of the three main rooms,
 - f) there should be no roof additions such as dormers,
 - g) additions to Thornton Hall should be restricted to one storey in height and should be located at the rear of the building, and
 - h) materials for any additions should be sympathetic to Thornton Hall but do not need to be the same as those used in Thornton Hall. A high standard of contemporary design should be encouraged for the additions.
- 2) New development is to maintain an appropriate curtilage around Thornton Hall and be consistent with the following principles and Figure E11.53 and E11.54.
 - a) maintain screening provided by existing trees. Some thinning of trees may assist in reinforcing the view corridor between Thornton hall and the rest of the site,
 - b) any garage should be located to the rear of Thornton Hall, and
 - c) any other outbuildings or structures such as a swimming pool should be located to the rear of Thornton Hall.
- 3) Vehicular access should reflect the original access to Thornton Hall. Reconstruct the original driveway and turning circle at the front of the house. Retain the historic hoop pine as the driveway entry marker at The Crescent.
- 4) Any new landscape design should enhance the setting of Thornton Hall and reinforce view corridors. Planting consistent with Thornton Hall's later nineteenth century date of construction should be considered for the grounds at the front of the house.
- 5) The existing trees along the existing entry road into Thornton Hall are to be retained and protected.

- 6) Fencing should be unobtrusive in character and simple in design. It is preferable to use timber rather than brick or stone. Hedging may be an acceptable alternative to a more traditional fence form.
- 7) Rear setback controls for all allotments that back onto the existing residential allotments fronting Lemongrove Road are provided at Section 11.8.3.3 Building Envelopes, control (11).

Figure E11.53 - Thornton Hall site principles



Figure E11.54: Thornton Hall Site Principles (aerial view)



11.8.6 Industrial Development

11.8.6.1 Built Form Controls

A. Objectives

- a) To minimise the impact of industrial development on adjacent residential uses, in terms of solar access, noise and odour.
- b) To ensure that industrial development can integrate with adjoining residential development and contribute to a visually cohesive urban environment.
- c) To encourage a high standard of architectural design, utilising quality materials and finishes appropriate for the locality.
- d) To enhance the visual quality of industrial development through appropriate setbacks, building and landscape design, particularly when viewed from public areas and residential areas.

B. Controls

- 1) The minimum lot size (Torrens Title) is 2,000m².
- 2) The maximum building height is 12m (1 - 2 storeys). Notwithstanding this, a maximum building height of 4m (1storey) applies within 8m from an adjoining residential boundary.
- 3) Building setbacks are as follows:

Table E11.13: Building Setback Requirements

Location	Minimum Setback
To Coreen Avenue (E1, E2)	6m
To western access road (E3)	6m
To adjacent industrial uses	0m
To adjacent residential uses	1m
To Combewood House property boundary	30m

- 4) Prominent elevations, such as those with a frontage to the street or public open space (OS5) are to:
 - a) be finished in high quality materials that are durable, low maintenance and non-reflective,
 - b) be activated through the use of glazing, office administration areas, building entries and the like (large, blank wall surfaces is not permitted), and
 - c) provide screening for any plant and mechanical equipment.
- 5) Elevations that are adjacent to a residential boundary are to be of solid in construction with minimal openings so as to minimise noise emissions.
- 6) Consideration should be given to the compatibility of the location and design of the car parking, storage loading areas to adjoining residential properties.
- 7) Boundary fencing (adjacent to residential uses) shall be between 1.8m and 2m high and of a solid material such as timber, steel or masonry.

Appendix A – Example of Building Envelope Plan



Appendix B – Residential Design Palette

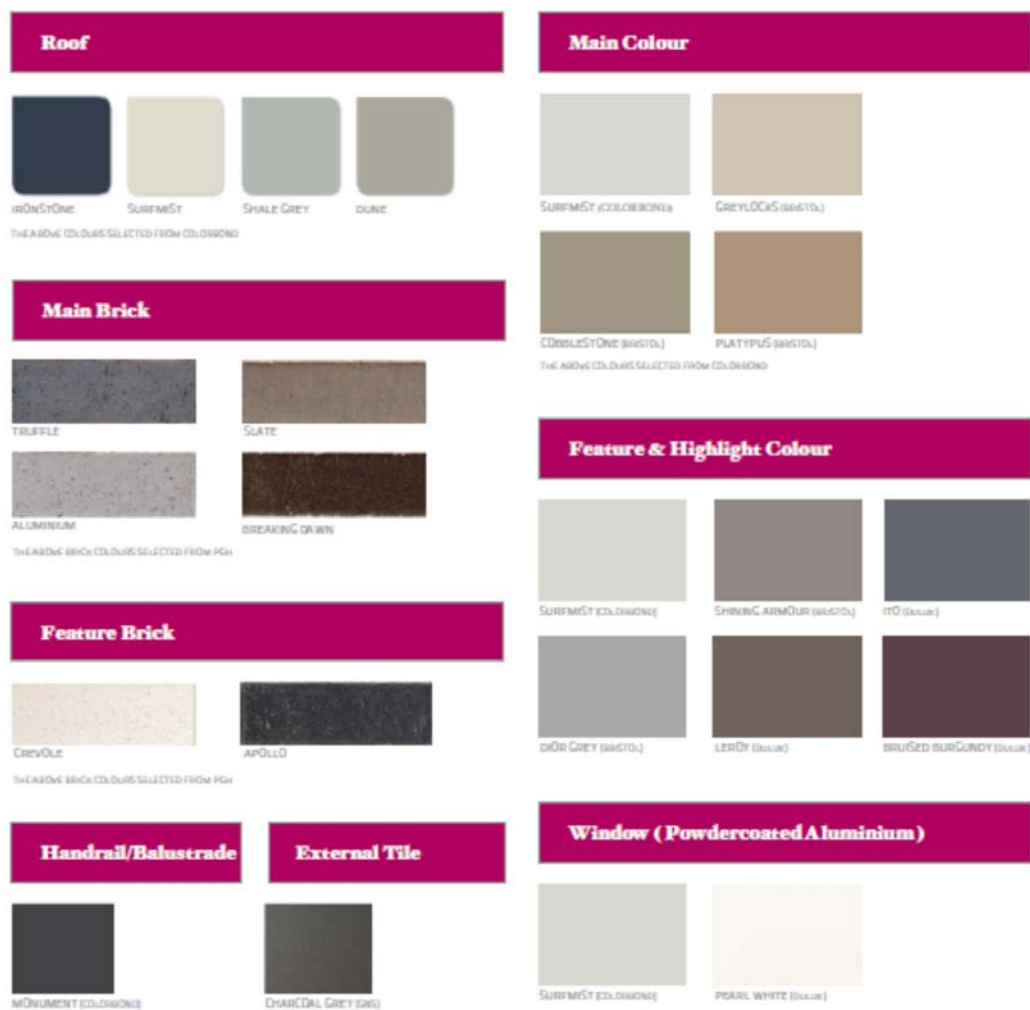


Table of Contents

<u>PART C 164 STATION STREET, PENRITH</u>	101
1 SITE ANALYSIS AND LOCAL CONTEXT	101
1.1 LAND AND PURPOSE TO WHICH THIS SECTION APPLIES	101
1.2 SITE VISION	101
1.3 SITE OBJECTIVES	102
1.4 LOCAL CONTEXT	103
2 STRUCTURE PLAN	104
2.1 URBAN STRUCTURE	104
2.2 LANDSCAPE STRUCTURE	106
2.3 CHARACTER AREAS AND URBAN PRECINCTS	109
2.4 DWELLING DENSITY	114
2.5 INDICATIVE DEVELOPMENT STAGING	115
3 THE PUBLIC DOMAIN	116
3.1 STREET NETWORK AND DESIGN	116
3.2 PEDESTRIAN AND CYCLIST NETWORKS	116
3.3 PUBLIC OPEN SPACE AND LANDSCAPE NETWORK	116
3.4 ABOVE GROUND BASEMENTS	118
4 RESIDENTIAL DEVELOPMENT	119
4.1 KEY DESIGN PRINCIPLES	119
4.2 BUILDING HEIGHT, MASSING AND SITING	119
4.3 BUILDING SETBACKS	121
4.4 PRIVATE OPEN SPACE	123
4.5 MIXED USE BUILDINGS	124
4.6 HOUSING DIVERSITY	125
5 ENVIRONMENTAL AND RESIDENTIAL AMENITY	125
5.1 VISUAL PRIVACY AND ACOUSTIC AMENITY	125
5.2 VIEW CORRIDORS	126
6 ACCESS, PARKING AND SERVICING	126
6.1 VEHICLE ACCESS	126
6.2 PEDESTRIAN ACCESS AND MOBILITY	127
6.3 ON-STREET PARKING OPTIONS	128
6.4 PARKING REQUIREMENTS FOR RESIDENTIAL APARTMENTS	128
6.5 SERVICE ROADS AND EMERGENCY VEHICLES	128

Part C 164 Station Street, Penrith

1 Site analysis and local context

1.1 Land and purpose to which this section applies

This section applies to land located at 164 Station Street, Penrith as shown below (Figure 1), comprising 7.855Ha of land which has been identified to accommodate high density residential land uses consisting predominantly of high density housing/units. This purpose of this section is to facilitate the development of residential land uses in accordance with the envisaged future character of the site.

Figure 1: Land to which this section applies



1.2 Site Vision

The urban vision for the redevelopment of the former Panasonic industrial site is to create a new residential neighbourhood at the southern edge of Penrith City Centre which respects and acknowledges the significance of the area including the city's urban vibrancy adjacent to the Blue Mountains. The site will act as the southern gateway to the Penrith City Centre and the new residential neighbourhood is consistent with the Penrith Progression Structure Plan 2015.

1.3 Site Objectives

The development of the site is to meet the following site objectives:

- Create a benchmark in urban residential neighbourhood development for Penrith;
- Create a built form formulated around large areas of public and community open space which provided connectivity through the site;
- Provide well connected and accessible areas of open space which link the site to the surrounding context;
- Provide an inviting and secure site with limited vehicular movement above ground level to enhance pedestrianisation;
- Provide a diverse range of high density housing products which respond to growing household.

Figure 2: Landscape Masterplan



1.4 Local Context

The site location within proximity to the Penrith City Centre, Penrith Station and the areas broader context can be seen in terms of the city context and adjacent existing land uses. Refer to Figures 3 and 4:

Figure 3: Existing Land Use Analysis City Context

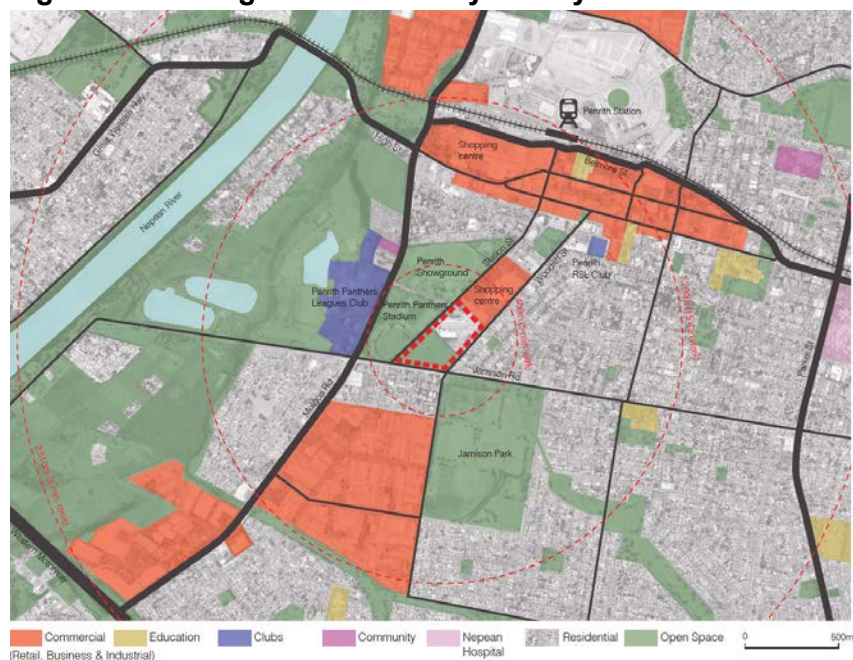
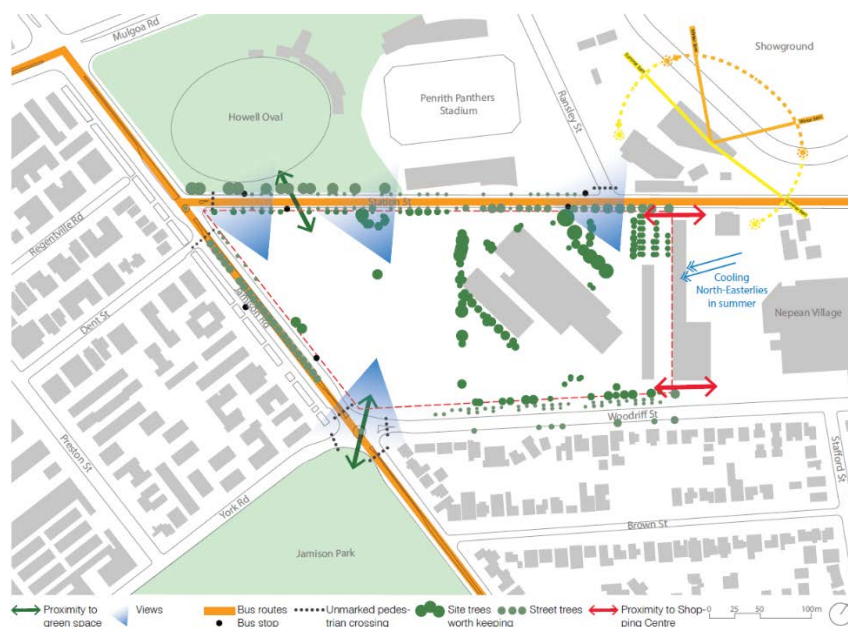


Figure 4: Site Context



2 Structure Plan

2.1 Urban Structure

The urban structure for the site is envisaged to be one centralised around the local and communal open space on the site, complimented by high quality public domain elements and architectural forms. In reference to architectural diversity and built form, the following objectives should be followed:

Objectives:

- To establish the urban image of the development by differences in public domain, built form and architectural diversity that enhance its prominent location within Penrith's city centre;
- To provide differences in streetscape treatment and urban character;
- To mark the pedestrian and vehicular entry points into the development off Station Street with formal urban strategies;
- To ensure a variety of pedestrian focused spatial experiences and safe social opportunities across the development.

Controls:

- To accommodate mixed uses and local retail off Station Street;
- To have a permeable pedestrian access structure with controlled vehicle circulation;
- To incorporate views and vistas across the site which accommodate Crime Prevention Through Environmental Design (CPTED) principles;
- Provide strong public landscape connections through the site in accordance with Figure 5;
- Encourage pedestrian access/movements through the site in accordance with Figure 6;
- Encourage through site views and vistas in accordance with Figure 7.

Figure 5: Urban Structure: Landscape and Open Space Connections

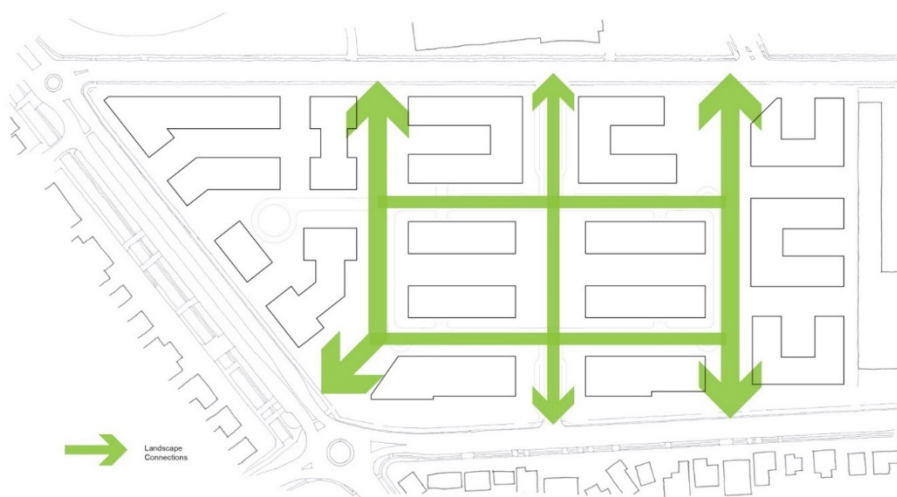


Figure 6: Urban Structure Access Patterns

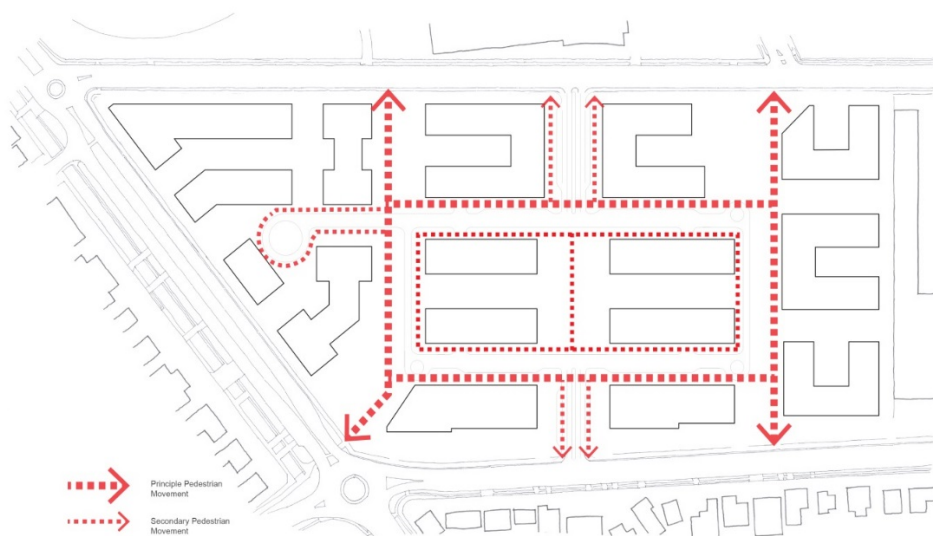
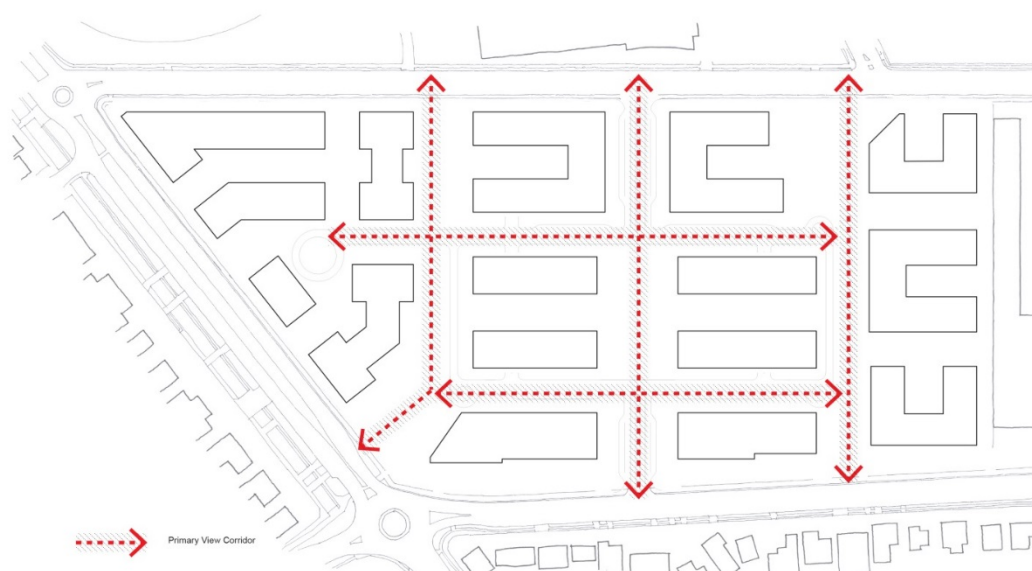


Figure 7: Urban Structure Views and Vistas



2.2 Landscape Structure

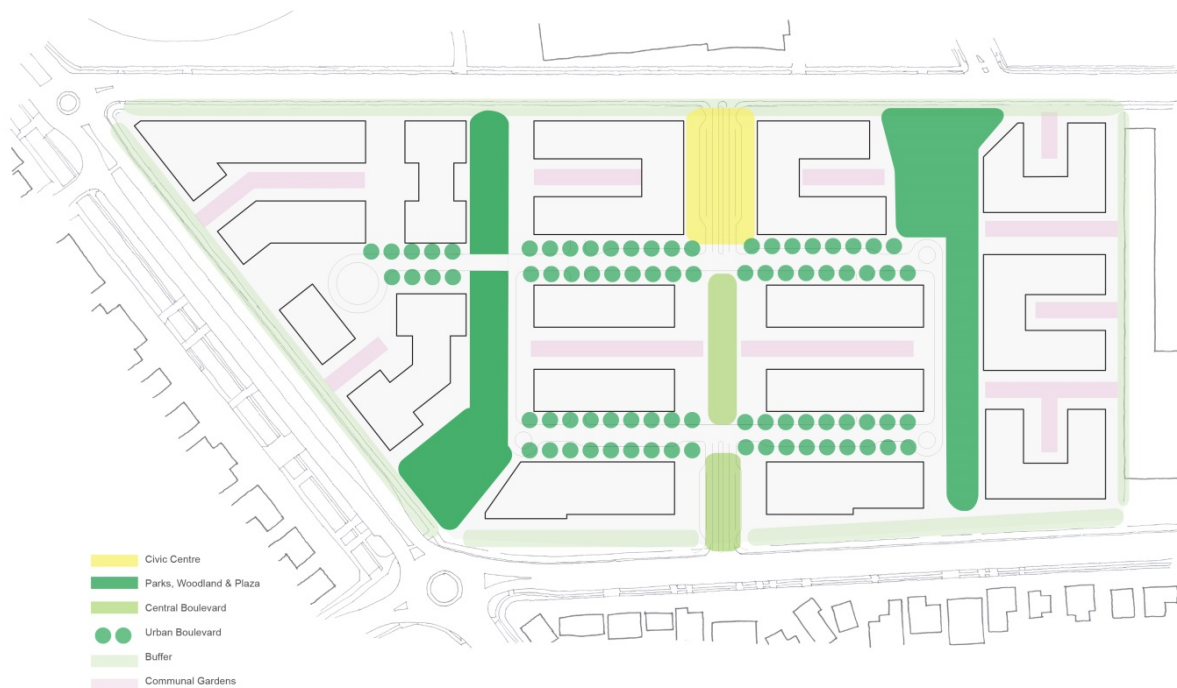
Objectives:

The public domain and landscape character within the development pursues the following qualities as detailed in Figure 8:

- A permeable, safe and pedestrian friendly landscape for community use;
- A formal entry boulevard with retail and community uses;
- Neighbourhood tree lined streets for enhanced urbanity and pedestrian friendly use;
- Picturesque linear parks with shared pedestrian and bicycle paths;
- Pedestrian links to Jamison Park to provide for passive recreation opportunities;
- A formal Station Street Plaza/Park;
- Landscaped buffers to adjacent developments;
- Opportunity for a diversity of Communal Gardens (private open space).

Public domain/landscape detail is the subject of a landscape design competition. The above principles will be maintained throughout the competition stages.

Figure 8: Indicative Landscape Character Zones



2.2.1 Landscape and Public Domain Allocation

A landscape design competition is required to be undertaken for public domain/public landscaping within the site. This competition is to run in accordance with the recommendations of the Government Architect and NSW State Governments Director Generals Design Excellence Guidelines. The Landscape Competition will relate to public open space (including the south finger parklands, the central boulevard garden and the north

finger parklands and plaza). An indicative landscape and public domain allocation plan is provided in Figure 9.

Controls

- A range of community uses within communal areas of open space are to be provided (including children's play areas and BBQ facilities);
- Private open space is to be clearly separated from public open space via level changes (see Figure 12)
- The following minimum area of public open space is to be provided on the site

Southern Finger and Linear Parkland	4,000 sqm
Central Boulevard	2,000 sqm
Northern Finger Linear Parkland with Station Street Plaza	4,000 sqm
Streetscape and pavement treatments	5,500 sqm
Boundary edges to Station Street, Jamison Road and Woodriff Street	1,000 sqm

Note detailed character of each of these landscaped areas will be undertaken by the successful competition entrant.

Figure 9: Landscape and Public Domain Allocation

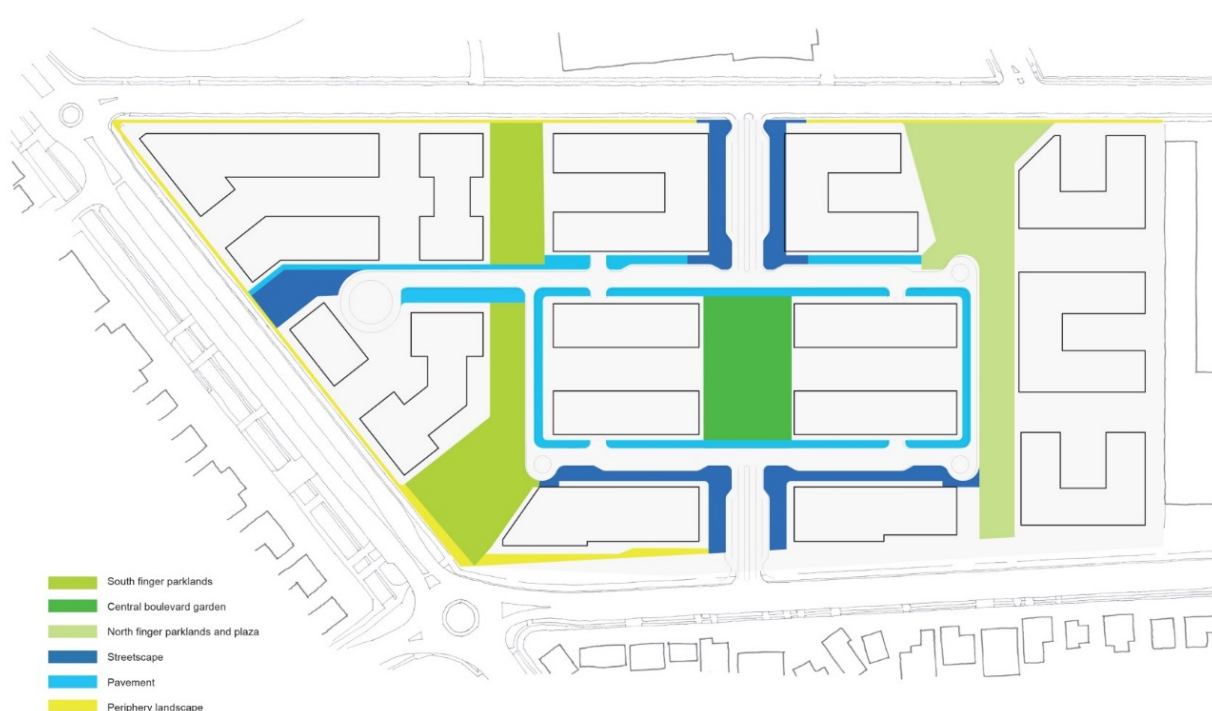


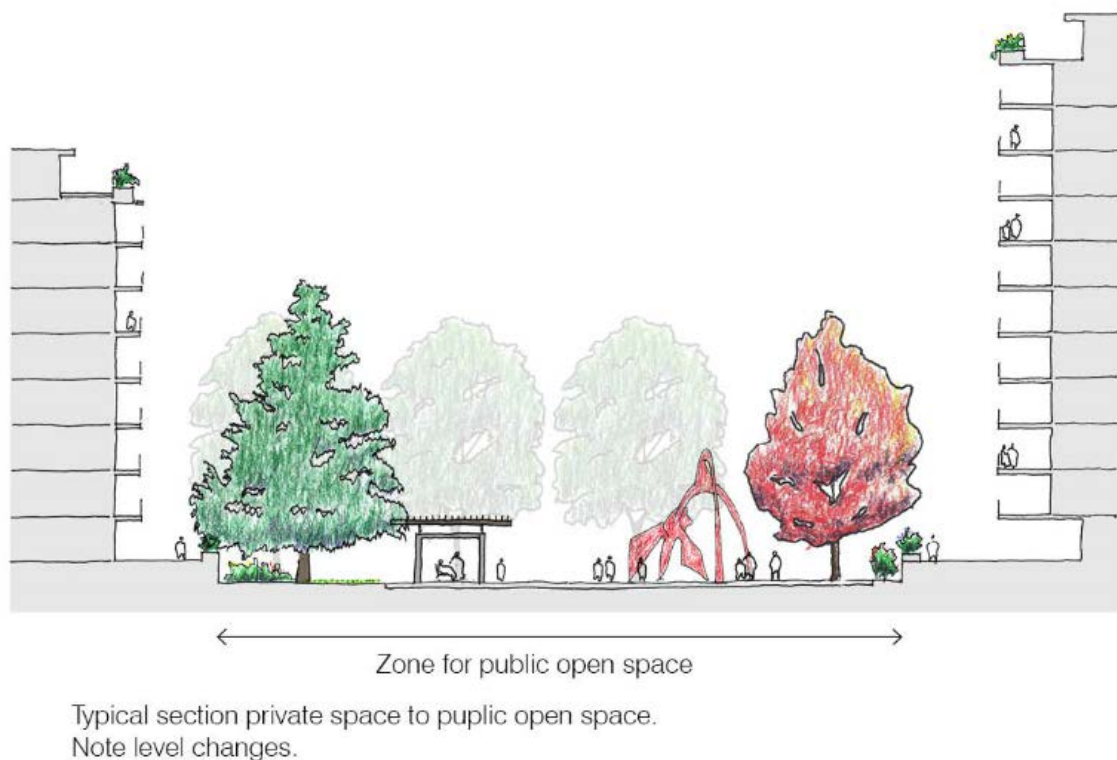


Figure 10: Illustrative Indicative Landscape Masterplan: Northern Finger Linear Park with Station Street Plaza. (Detailed Design subject to Landscape Competition)



Figure 11: Illustrative Indicative Landscape Masterplan: Southern Finger Linear Park. (Detailed Design subject to Landscape Competition)

Figure 12: Typical section plan demonstrating level transition from public v private open space



2.3 Character Areas and Urban Precincts

Built form is to spatially frame new streets and linear parks. Taller built form is located along Jamison Road to define the importance of the southern urban edge to Penrith's city centre. Additional height is to be located at the corner of Jamison and Station Street as urban markers and in association with the linear parks. Elsewhere, the modulation of built form will 'close off' and spatially frame internal vistas. This will accentuate the urban experience when moving between the various urban precincts.

The following section provides a breakdown of key precincts within the site. The broader urban form strategy can be seen below in *Figure 13*. Detailed design for buildings within these precincts will be provided at Development Application phase.

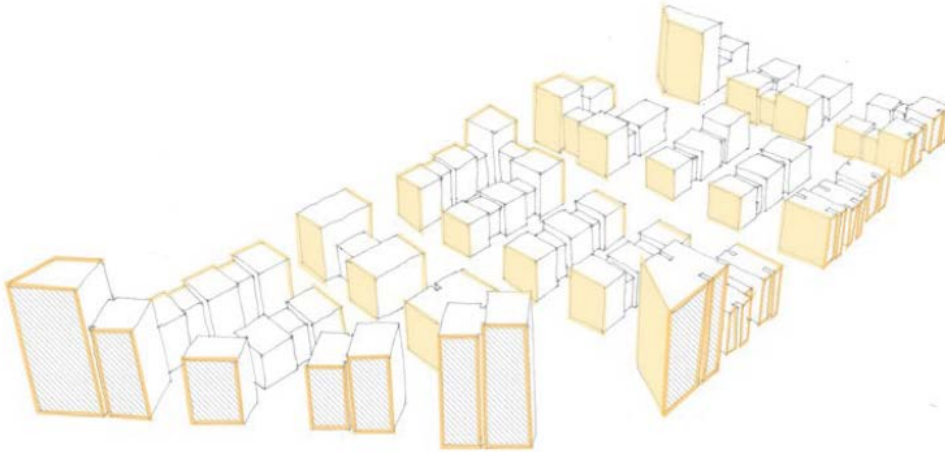
Objectives:

- Provide a sequence of urban precincts which provide design excellence in the provision of public domain landscaping and built form articulation;
- Provide urban precincts which respect the surrounding character of the site and its context within Penrith.

Controls:

- Development Applications are to follow precinct specific objectives and controls as they relate to different parts of the site in line with precincts identified in Figures 15 to 17.

Figure 13: Urban Form Strategy



2.3.1 Key Urban Building Form

The following corner sites are key urban building points within the site which will maintain the highest scale on the site.

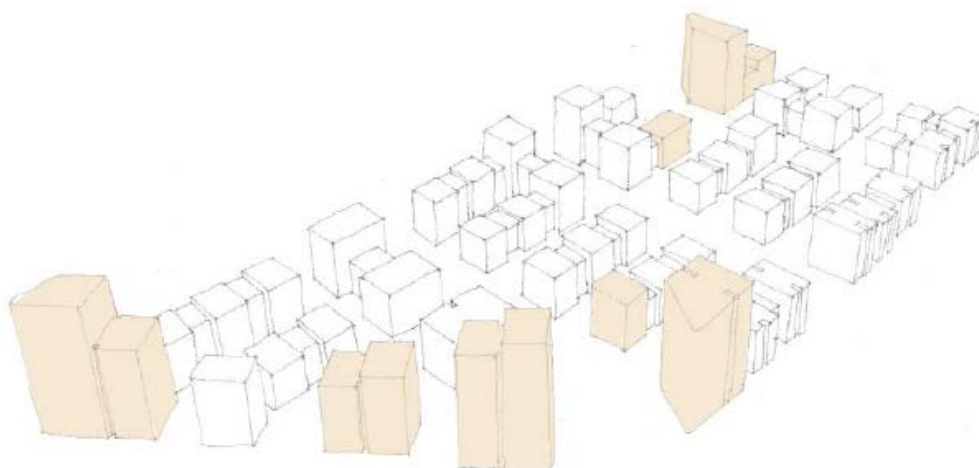
Objectives:

- Provide varied built forms across the site to improve vistas and visual presentation of buildings.

Controls:

- Pinnacle built forms are to be predominantly located on key building corners on the sites edges as identified in Figure 14.

Figure 14: Key Urban Forms



2.3.2 Urban Precinct: Station Street and Entry Boulevard

This section relates to the frontage of the site to Station Street and the entry boulevard into the site as identified in Figure 15.

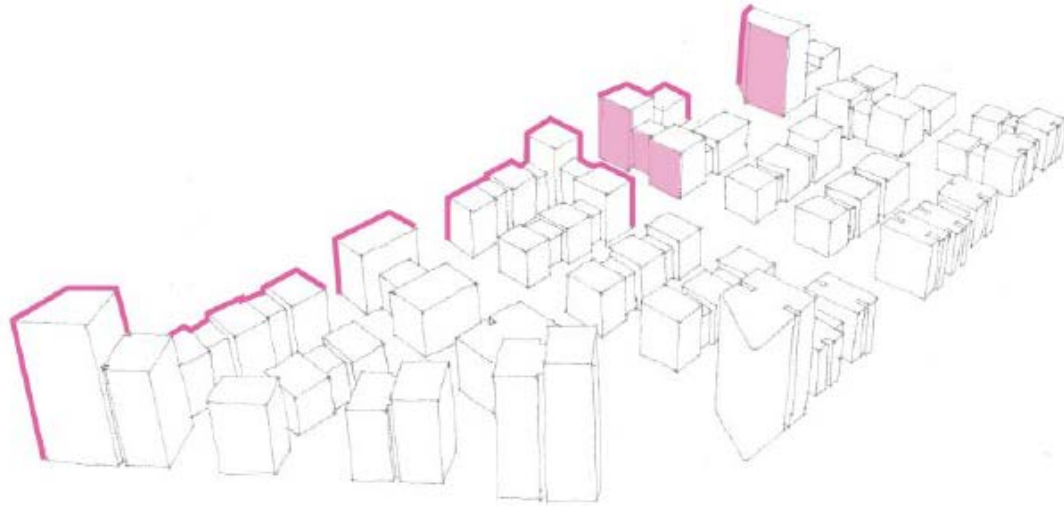
Objectives:

- Provide a constant scale and allow for balcony projections which are set back into the building block;
- Allow for articulated entry points which are appropriately scaled;
- Provide for pedestrian access via defined access ways within the building wall;
- Provide a distinction between ground floor uses and upper floors for residential uses in the area for the entry boulevard (ground level retail and residential above);
- Provide street awnings with a recessed ground floor where local retail uses are proposed.

Controls:

- Retail uses should be contained to the entry boulevard off Station Street and consist of localised retail uses which complement the predominantly high density residential use of the site (i.e. cafes, pharmacies, newsagencies, general practitioners);
- Provide footpath seating adjacent to the entry boulevard to the site off Station Street.

Figure 15: Station Street and Entry Boulevard Precinct



2.3.3 Urban Precinct: Jamison Road

This section relates to the Jamison Road site frontage, being the southern edge of Penrith's city centre, as identified in Figure 16.

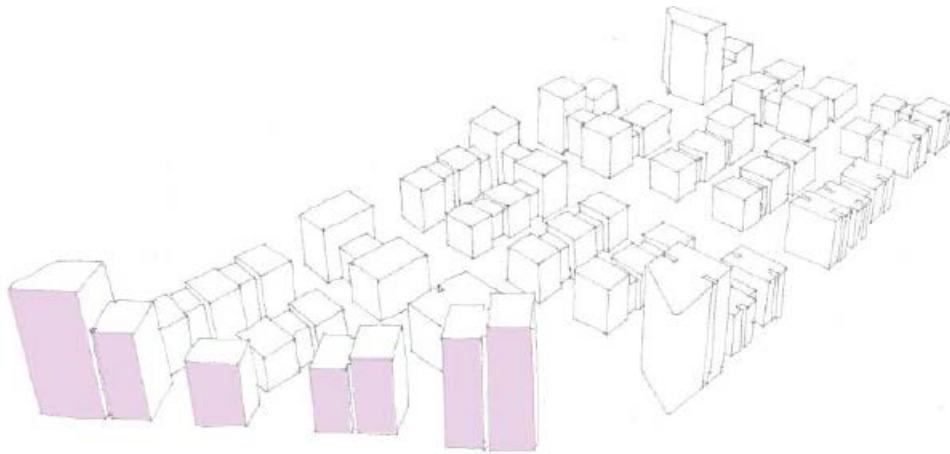
Objectives:

- Provide street corner articulation and urban markers;
- Reinforce the geometry of Jamison Road through a constant setback;
- Emphasise the vertical element of the buildings through modulation and articulation.

Controls:

- Built form to demonstrate design excellence and present as modulated and articulated to the street;
- Provide a distinction between ground floor apartments and upper floors.

Figure 16: Jamison Road Precinct



2.3.4 Urban Precinct: Woodruff and Park Edge

This section relates to the Woodruff Street frontage of the site and adjoining park edges as identified in Figure 17.

Objectives:

- Provide transitional built form;
- Encourage the retention of public verge open space adjoining Woodruff Street.

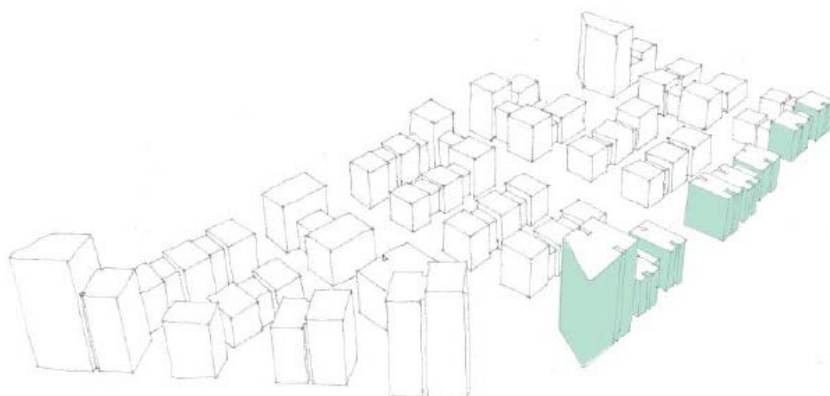
Woodruff Street Controls:

- Provide an appropriately scaled residential development to be set against a wide landscape verge;
- Create a varied building edge with a rhythm and modelling in the built form.

Park Edge Controls:

- Provide elevated ground floor units integrated with balcony terraces and screening to provide suitable privacy and interface with the public domain/landscaped verge fronting Woodruff Street.

Figure 17: Woodriff and Park Edge Precinct



2.4 Dwelling Density

Objectives:

- To provide a range of high density residential buildings to cater for housing demand and needs;
- To ensure that all residential development on the land is of a high quality and provides amenity;
- Appropriately cater for residential growth and housing demand within Penrith through delivery of dwelling yields illustrated.

Controls:

- The minimum residential dwelling densities should be achieved within each of the project stages;
- Higher density forms to be located on key corners of the site (urban markers). Lower scale form to be provided on eastern edge fronting Woodriff Street to respect the amenity of the adjoining low density residential uses;
- The following minimum apartment yields apply to the subject site at both a 2:1 compliant FSR and 2.5:1 FSR under the incentives clause

Dwelling Density	Current controls	Incentives clause
- Stage 1:	Minimum: 480	Minimum: 600
- Stage 2:	Minimum: 80	Minimum: 100
- Stage 3:	Minimum: 400	Minimum: 500
- Stage 4:	Minimum: 190	Minimum: 240
- Stage 5:	Minimum: 320	Minimum: 400
Minimum	1470 dwellings	1840 dwellings

2.5 Indicative Development Staging

Objectives:

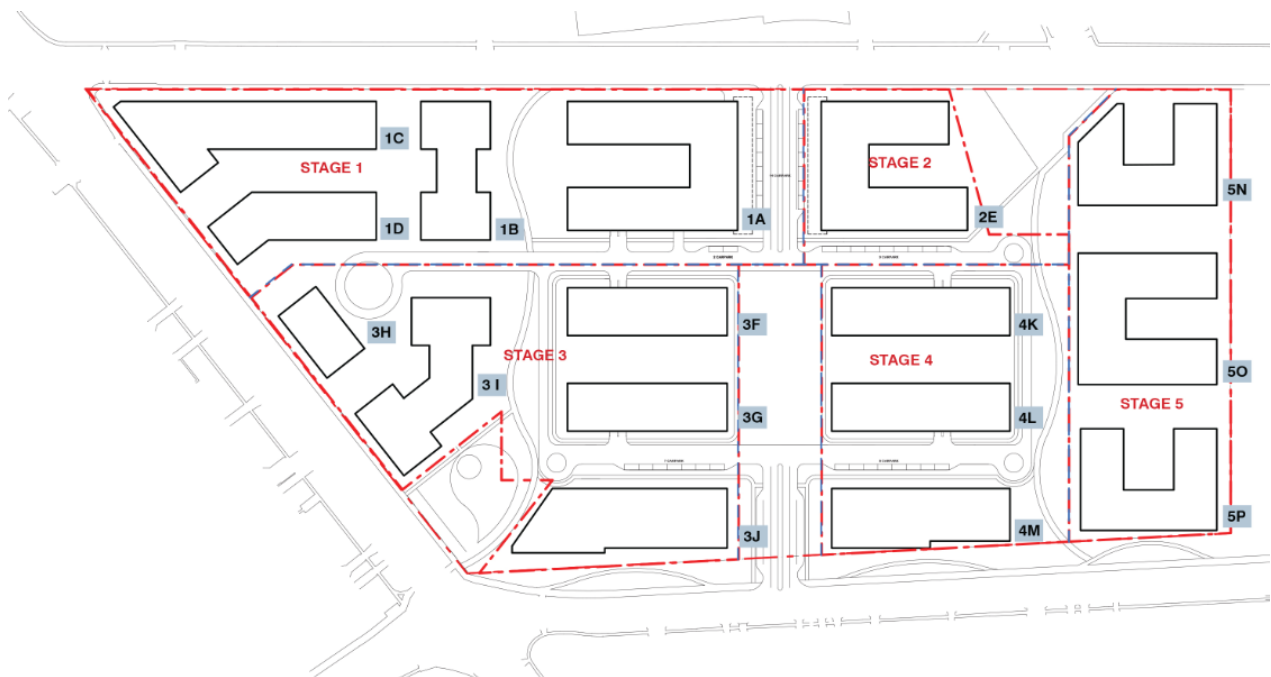
- Stage development to limit issues associated with construction and traffic;
- Stage construction promoting the use of both site frontages;
- Provide quality housing and amenities for each stage limiting associated construction issues.

Controls:

Undertake development in line with the indicative development staging plan identified in Figure 18:

- | | |
|-----------|--|
| - Stage 1 | Station Street and Entry Boulevard (South) Precinct |
| - Stage 2 | Station Street and Entry Boulevard (North) Precinct |
| - Stage 3 | Jamison Road, Woodriff Street and Central (South) Precinct |
| - Stage 4 | Woodriff Street and Central (North) Precinct |
| - Stage 5 | North Precinct |

Figure 18: Staging Plan



3 The Public Domain

3.1 Street Network and Design

Objectives

- Reduce vehicular movements at grade to maximise the presence and permeability of the ground level public domain and open space which connects the site to the surrounding context;
- Encourage primary vehicular movements to basements.

Controls

- Section 10.4 of the Penrith DCP 2014 applies in regard to road configuration and road hierarchy requirements

3.2 Pedestrian and Cyclist Networks

Pedestrian and cyclist movements should be incorporated into any design proposed on the site.

Objectives

- The public domain of the streetscape is to define the urban character of the development as a pedestrian friendly neighbourhood precinct;
- To ensure that the streets are safe for pedestrian and cyclist movements incorporating Crime Prevention Through Environmental Design principles;
- The site is to become a focus for community activity;
- Encourage a shared use path along the Station Street frontage;
- The pedestrian and cyclist paths are to be integrated within the existing and proposed open space networks

Controls:

- Pedestrian and cyclists paths are to be provided within the public domain and public open space areas providing connectivity between the site;
- Safe public thoroughfares are to be provided which connect the public domain to residential buildings and adjoining road networks.

3.3 Public Open Space and Landscape Network

The public open spaces are to set a high standard in urban design quality. These spaces are to allow passive and active recreation uses, accommodate safe pedestrian circulation during the day and at night, adopt water sensitive principles and tell a story about the richness of living in a residential neighbourhood within Penrith's city centre. The detailed design of public open spaces across the site will be the subject of a landscape design competition.

Objectives:

- To provide a variety of high quality public domain and public areas of open space within the street including quality pavement, tree lined streets and well delivered pocket parks;
- To provide high quality parkland spaces;
- To provide a diversity of open space that facilitates pedestrian linkages across the site;
- To provide superior quality landscaping to the site.

Controls:

- A minimum of 10,000 square metres of land is to be allocated to the provision of public open space (excluding streetscape improvements). Delivery of landscaping and building construction to be carried out simultaneously in accordance with the indicative staging plan in Figure 18;
- Provide comprehensive public and private landscaping in accordance with the indicative landscape plan provided in Figure 19;
- Creation of a linear landscape corridor through the central area;
- Create new public domain areas and public open spaces to frame key site entry areas and encourage pedestrian movements throughout the site
- Public art will be provided in key locations throughout the site.

Figure 19: Illustrative Landscape Masterplan

3.4 Above Ground Basements

Objectives:

- Improve basement circulation throughout the site

Controls:

- Above ground basements less than 1m above natural ground level can be provided on site where appropriate to assist natural ventilation to the basement;
- Basement openings above ground are to be adequately screened through building edge landscaping which separates the basement opening from the public domain and residential balconies as indicated in Figure 20.

Figure 20: Public Domain and Basement Interface



4 Residential Development

4.1 Key Design Principles

Site Design Objectives

- Provide good east-west and north-south connectivity with new public streets that are clearly integrated with the existing street network;
- Locate non-residential uses towards the northern end of the site where they will be in closer proximity to the city centre;
- Emphasise the significance of the site as the southern gateway to the city centre through the built form;
- Provide high quality public domain interface with existing streets surrounding the site;
- Consider interface with heritage conservation area on the eastern side of Woodriff Street.

Built Form Objectives

Provide a variety of building heights throughout the site which:

- Result in well-defined and visually interesting built form;
- Reflect the gateway treatment to the corner of Station Street and Jamison Road with opportunities for increased building heights;
- Provide appropriate transition to surrounding land uses which is sensitive to amenity and visual impact of surrounding or nearby development; and
- Taller buildings to be located and orientated to minimise the shadow impact on future buildings within the site and to avoid adverse impacts on the surrounding uses.

4.2 Building Height, Massing and Siting

Building height, massing and siting is to respect the surrounding urban context, public domain and landscaping provided on the site.

Objectives

- Where applicable, buildings should incorporate varying scales to improve articulation and modulation in addition to street presentation and architectural diversity. This includes varied heights and transition from low to medium to high rise buildings within specific precincts.

Controls

A range of building heights will be provided as indicated in *Figure 21*.

- **Station Street:** Predominantly medium building heights street edge alignment with higher building heights on key corners (Station Street and Jamison Road);
- **Jamison Road:** Key urban markers incorporating medium to high building heights;
- **Woodriff Street:** Predominantly low building heights appropriately setback from the road via the existing road reserve. High building heights will be on the corner of Woodriff Street and Jamison Road ;
- **Entry Boulevard:** Higher buildings on street edges with low to medium building heights at the connector road interface;

- **Connector Road/Park Precinct:** Predominantly low to medium building heights to maintain solar access to key areas of public open space.

Note: The building heights are subject to consistency with incentives provisions under the any Penrith LEP 2010. This includes Floor Space Ratio, Height of Building and any site specific or public-benefit based incentives.

The number of storeys indicated below are indicative only and will be subject to a Design Jury process.

Figure 21: Indicative Building Heights



4.3 Building Setbacks

Building setbacks are required to maintain appropriate separation between buildings in accordance with the controls of the NSW Apartment Design Guidelines.

Controls:

1) The following setbacks should be provided as identified in Figure 22

- Station Street Frontage: 5m from site boundary (minimum)
- Woodriff Street Frontage: 5m from site boundary (minimum)
- Jamison Road Frontage: 5m from site boundary (minimum)
- Buildings fronting public open spaces, parks and internal streets (other than entry boulevards): 2.5 m (minimum)
- Entry Boulevarde off Station Street: 2.5m (minimum)
- Northern Boundary: 6m (minimum)

2) Other setbacks (side and rear) will be governed via the separation controls of the Apartment Design Guidelines as follows:

Up to four storeys (approximately 12m):

- 12m between habitable rooms/balconies
- 9m between habitable and non-habitable rooms
- 6m between non-habitable rooms

Five to eight storeys (approximately 25m):

- 18m between habitable rooms/balconies
- 12m between habitable and no-habitable rooms
- 9m between non-habitable rooms.

Nine storeys and above (over 25m):

- 24m between habitable rooms/balconies
- 18m between habitable and non-habitable rooms
- 12m between non-habitable rooms.

Figure 22: Built Form Frontages Setback Plan



4.4 Private Open Space

Private open space must be provided for residential units on the site for each building

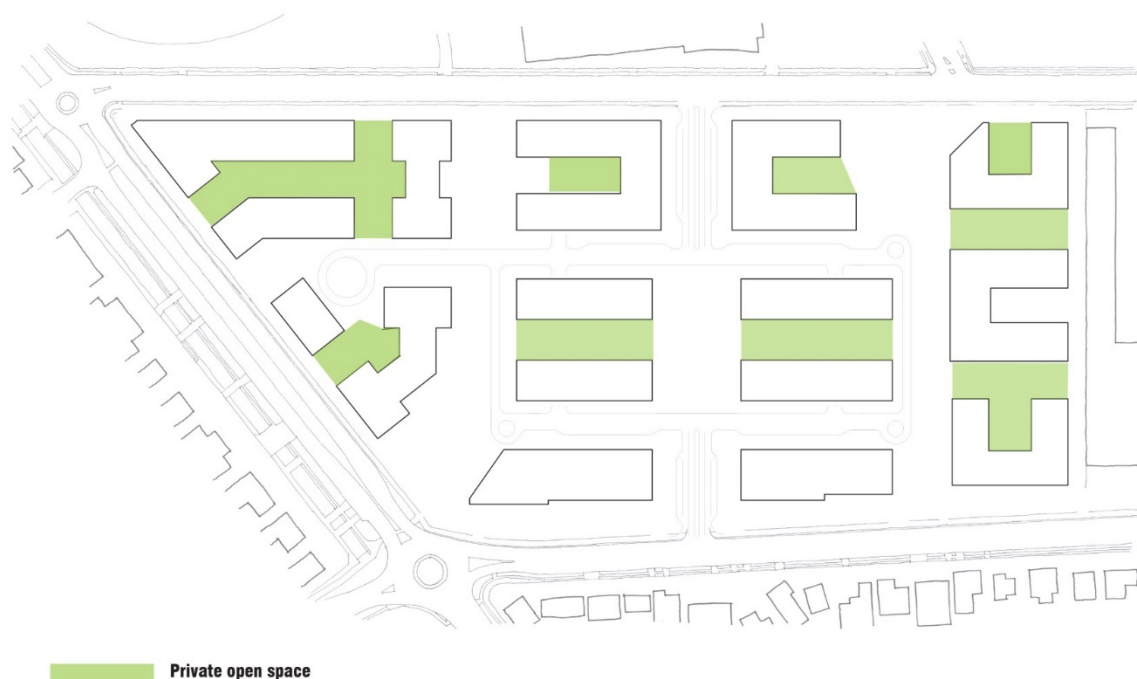
Objectives:

- Provide suitable private open space for future occupants of the site;
- Encourage the provision of rooftop private open space where possible.

Controls:

- Private open space to be provided within proximity of building envelopes within each site;
- Private open space is to be provided on the site via a combination of communal gardens, rooftop gardens and balconies;
- Private open space is to be provided in addition to the public open space within the site;
- Private open space is to be provided in accordance with SEPP 65 and Apartment Design Guideline provisions;
- Ground level public open space is to be provided in general accordance with Figure 23.

Figure 23: Indicative Ground Level Private/Communal Open Space Plan



4.5 Mixed Use Buildings

Objectives:

- Provide a number of mixed use buildings which provide localised retail and community uses;
- Provide localised services to meet the needs of future residents.

Controls:

- Provide a minimum of 1000 square metres of retail space surrounding the entry boulevard off Station Street as identified in Figure 24;
- Provide for other non-residential uses such as a child care centre within close proximity to the entry boulevard.

Figure 24: Indicative Ground Floor Retail and Childcare Centre Location



4.6 Housing Diversity

Objectives:

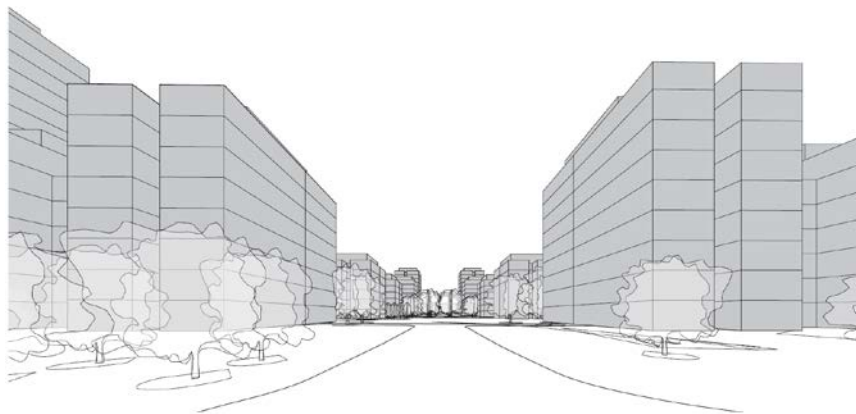
- A range of apartment sizes, types, forms and specifications are to be provided on the site.

Controls:

The following apartment mix will be achieved on the site:

- 1 Bedroom: 15-25%
- 2 Bedroom: 60-65%
- 3 Bedroom: 5 – 10%

Figure 25: Indicative Visualisation of Central Boulevard looking north-west demonstrating diversity of built form and through site thoroughfare



5 Environmental and Residential Amenity

5.1 Visual Privacy and Acoustic Amenity

Objectives:

- To ensure buildings are designed to achieve the highest possible levels of visual privacy, building quality and acoustic privacy;
- To protect visual privacy by reducing direct overlooking of habitable rooms and private open space (use provisions of blank walls for key buildings with public space interfaces); and
- To contain noise within dwellings and apartment buildings through appropriate design, use of building materials and minimise the intrusion of noise from outside sources.

Controls:

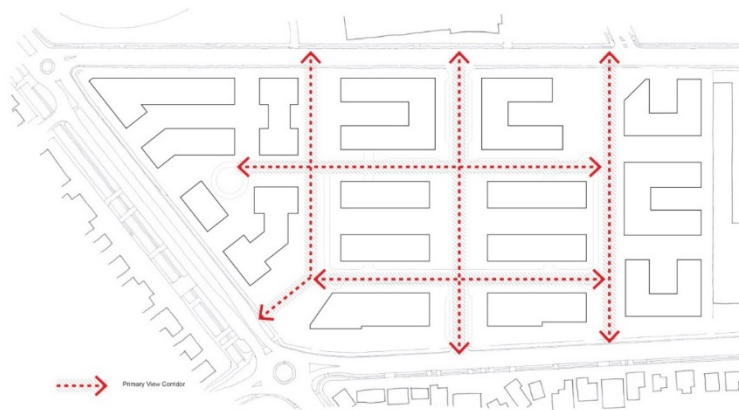
- Development Applications should address acoustic and visual amenity including both internal and external impacts;
- Buildings to comply with separation distances prescribed by SEPP 65 and the Apartment Design Guidelines.

5.2 View Corridors

Objectives:

- Maintain key view corridors through the site which provide enhanced views of areas of public open space and key thoroughfares;
- Enhance north south and east-west view corridors through the site to surrounding road networks as identified in Figure 26.
- Provide view corridors which support crime prevention through environmental design.

Figure 26: Primary View Corridors



6 Access, parking and servicing

6.1 Vehicle Access

Objectives:

- Minimise vehicular access across the site to improve pedestrian connections;
- Limit vehicular access and exits to the site to two primary intersections off Station Street and Woodriff Street;
- Limit service vehicular access around the site to areas identified in Figure 27.

Controls:

- Vehicular access and movements are to be predominantly undertaken within the basement;
- Above ground vehicle movements are to be predominantly used for basement access and service and emergency vehicles
- The vehicle movements identified in Figure 27 are indicative only and are subject to the outcomes of a traffic analysis and the satisfaction of Council.

6.2 Pedestrian Access and Mobility

Objectives:

- Create large pockets of public open space within the site to encourage pedestrian use of open space;
- Provide pedestrian access paths through the entire site to promote the movement of people within and across the site;
- Provide pedestrian access from all of the sites key frontages (Station Street, Woodriff Street and Jamison Road) to allow the distribution of people throughout the site
- Encourage the provision of a shared user path along the Station Street frontage of the site.

Controls:

- Pedestrian and bicycle access paths to be provided connecting the site to adjoining streets consistent with the indicative pedestrian movements identified in Figure 27;
- Provide clear pathways from hardscape public domain through to public open space to encourage community use.

Figure 27: Vehicle Access and Pedestrian Movement Plan



6.3 On-Street Parking Options

This section relates to the provision of on street parking arrangements for visitors, residents, taxis, retail uses and the general public.

Objectives

- Where possible encourage the provision of on-street parking to support the community;
- Encourage the use of on-street loading bays adjacent localised retail uses to be used for loading facilities outside of peak hours;
- Encourage the provision of residential visitor parking to be provided at ground level across the site.
- Provide short term parking for the public wishing to use the public open space provided on site.

Controls:

- All parking to be provided on site;
- Parking is to be provided in accordance with the parking rates within Table C10.2 of the Penrith Development Control Plan 2014.

6.4 Parking requirements for Residential Apartments

Controls:

- Parking is to be provided in accordance with the parking rates within Table C10.2 of the Penrith Development Control Plan 2014;
- Resident parking is to be provided in basement levels.

6.5 Service Roads and Emergency Vehicles

The site will provide service and emergency vehicles road access via two east-west laneways off the primary t-intersection roads. These shared pathways will be made available for emergency and service vehicle access.

Controls:

- East-West road access for emergency and service vehicles is to be provided as identified in Figure 27 and 28.

Figure 28: Service and Emergency Vehicle Access

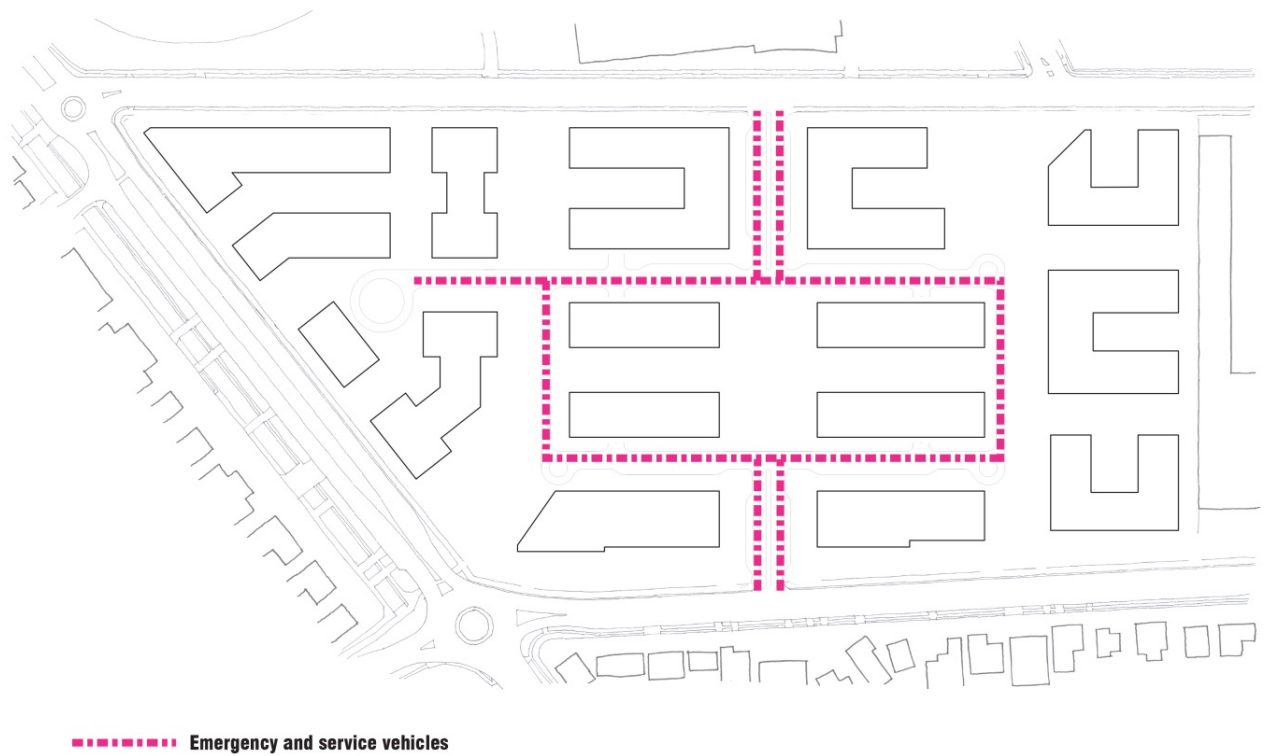


Table of Contents

E12 PART A HOSPITAL PRECINCT	2
12.1 BACKGROUND	2
12.1.1 AREA INCLUDED WITHIN THE HOSPITAL PRECINCT	2
12.1.2 AIMS OF THE CONTROLS FOR THE HOSPITAL PRECINCT	2
12.1.3 GENERAL OBJECTIVES	2
12.1.4 CHARACTER AREAS	3
12.2 LAND USE CONTROLS	5
12.2.1 MIXED USE DEVELOPMENT CONTROLS	5
12.3. BUILT FORM CONTROLS	7
12.3.1. STREET ALIGNMENT, BUILDING HEIGHT AND SETBACKS	8
12.3.2. BUILDING DEPTH AND BULK	10
12.3.3. BOUNDARY SETBACKS AND BUILDING SEPARATION	10
12.3.5 BUILDING EXTERIORS	12
12.3.6 LANDSCAPE DESIGN	14
12.3.7 PLANTING ON STRUCTURES	14
12.4. OTHER CONTROLS	15
12.4.1 PUBLIC DOMAIN	15
12.4.2 PEDESTRIAN AMENITY	15
12.4.2.1 PERMEABILITY	16
12.4.2.2 ACTIVE STREET FRONTAGES AND ADDRESS	17
12.4.2.3 SAFETY AND SECURITY	19
12.4.2.4 AWNINGS	20
12.4.2.5 VEHICLE FOOTPATH CROSSINGS	21
12.4.3 CAR PARKING	22
12.4.4 SITE FACILITIES AND SERVICES	23
12.5 OTHER INFORMATION	24

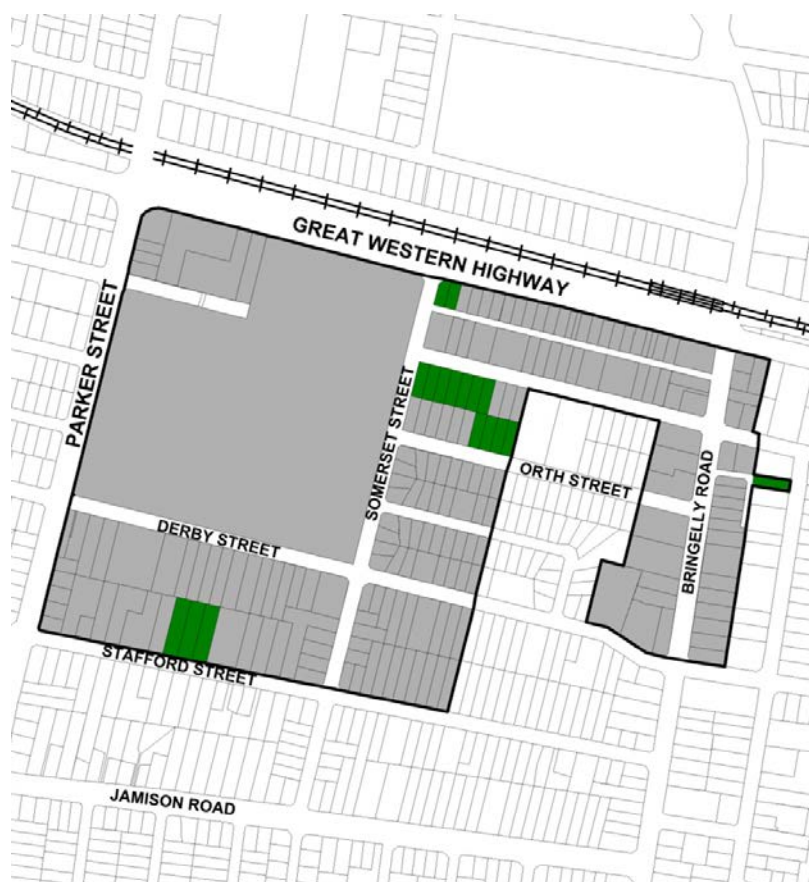
E12 Part A Hospital Precinct

12.1 Background

12.1.1 Area included within the Hospital Precinct

This section applies to development on land covered by the Hospital Precinct as shown in Figure E12.1. This section provides specific controls for the Hospital Precinct in addition to the general controls elsewhere in this DCP. In the event of any inconsistency between this section and the rest of the DCP, the requirements of this section prevail.

Figure E12.1 Land to which this section applies



12.1.2 Aims of the controls for the Hospital Precinct

The aim of the controls in this section of the DCP is to provide more detailed provisions for development in the Hospital Precinct that will:

- a) Contribute to the growth and character of Kingswood as a specialised medical precinct;
- b) Deliver a balanced social, economic and environmental outcome; and
- c) Protect and enhance the public domain.

12.1.3 General Objectives

- a) To facilitate the revitalisation of Kingswood by promoting redevelopment and urban sustainability;

- b) To promote high quality urban design, architectural excellence and environmental sustainability in the planning, development and management of the Hospital Precinct;
- c) To provide for mixed use, commercial and residential development within the Hospital Precinct which will provide high levels of amenity for occupants;
- d) To encourage medical related uses and research and development opportunities between the Hospital and the University of Western Sydney;
- e) To provide high levels of accessibility within the precinct, connecting significant activity nodes, public open space and surrounding residential areas;
- f) To encourage development within the Hospital Precinct that prioritises the public domain and creates an attractive and vibrant centre;
- g) To encourage integration of the residential and non-residential land uses and improved access to transport facilities;
- h) To achieve an attractive and sustainable precinct; and
- i) To ensure that development within the Hospital Precinct is consistent with the desired future character of each character area.

12.1.4 Character Areas

The Hospital Precinct is located in Kingswood, immediately east of, and in close proximity to, the Penrith City Centre. The location of the Nepean Hospital and the surrounding range of medical services and facilities within its boundaries make this area the primary medical centre for the Penrith LGA. The University of Western Sydney's Kingswood campus as well as TAFE NSW Nepean College is located within close proximity of the Precinct, with many of the services also catering to students of these tertiary institutions. The Hospital Precinct also enjoys good access by public transport, with the Kingswood Railway Station located north east of the Precinct.

The majority of the Hospital Precinct is zoned B4 Mixed Use under Penrith LEP 2010, which provides for an innovative mix of commercial and medical related uses as well as higher density housing to service the needs of medical patients, staff and students.

There are three precincts identified in the Hospital Precinct (see Figure E12.2), all with their own distinct characteristics. Generally, these activity precincts acknowledge and reinforce existing patterns of use in the area and have been identified as having potential to contribute to the precinct's demands for growth in health and medical related uses and the related demands for key worker and student accommodation in an accessible location, with close proximity to the Nepean Hospital, the University of Western Sydney, local services and public transport.

The intended character of each of these precincts is identified below and will be used to inform and guide future development.

A. Commercial Mixed Use

This precinct includes the existing shopping strip located adjacent to the Great Western Highway, Wainwright Lane located to the south and the northern end of Bringelly Road.

The location of the existing retail strip adjacent to the Great Western Highway offers businesses high visibility as well as strong public transport linkages as a result of the proximity to the Kingswood Railway station. There are existing pedestrian linkages from the station to the Nepean Hospital which will be reinforced to ensure pedestrian safety and comfort. Additional linkages will be encouraged to provide a more direct route for pedestrians and cyclists.

Development in this area will be required to respond to potential impacts to amenity caused by the proximity to major transport corridors through building design, layout and materials. Mixed use developments will provide active ground floor uses and high quality building and public domain design outcomes to create a comfortable pedestrian environment that reduces the noise and traffic impacts. The ground floor tenancies will accommodate retail businesses. The lot orientation of this area may require applicants to demonstrate adequate solar access can be provided to the public domain. Consistent landscape treatment will be provided along the Great Western Highway.

Bringelly Road will provide the second tier of development opportunities south of the primary commercial and retail strip. The reduced building heights and generous pedestrian verges in this part of the precinct will allow for a more human scale streetscape that is supportive of active uses that encourage the community to gather and enjoy the public domain. High order landscaping elements will be incorporated on the Bringelly Road/ Northern Road intersection to create an embellished eastern gateway to the Hospital Precinct.

Bringelly Road is largely developed with medium density residential dwellings in the form of residential flats and two storey townhouses. There is opportunity for this area to adopt a higher density residential form along Rodgers Street and Bringelly Road.

The north western part of the Commercial Precinct offers three frontages to the Great Western Highway, Parker Street and Barber Avenue and is a major gateway site to the whole Hospital Precinct. Development within this part of the precinct will be encouraged to incorporate high quality architectural design standards and landscaping, fitting for its location as the gateway to the Hospital Precinct.

B. Medical Mixed Use

This precinct is adjacent to the Nepean Hospital and offers the most dynamic environment to further develop the Hospital Precinct into a specialised medical precinct. This precinct encourages development that would support the operation of the hospital, such as medical offices, pharmacies, short-term accommodation, convenience stores and other forms of retail that will meet the needs of visitors and people using the medical services offered within the precinct.

Medium to high density development will be developed in a similar nature to the existing institutional scale development present within the precinct. Building heights will be 4-6 storeys and will incorporate ground floor active uses with commercial and residential uses located above. The western vista will be a key consideration when designing development within this Precinct.

Development along Somerset and Derby Street is encouraged to take advantage of the potential for these streets to offer a high quality entrance to the Hospital Precinct, with continuous landscaped themes and high quality architectural design. A high quality public realm will be achieved by providing generous pedestrian zones and activating ground floor frontages.

Orth Street should be treated as a major connector between the hospital and the main area of local community space located on Bringelly Road to the east. This connection will accommodate pedestrians and cyclists with a generous, landscaped southern verge.

C. Residential Edge

Development within this precinct should ensure there are pedestrian and cycle linkages from Stafford Street to Derby Street. The existing open space pocket on Stafford Street offers potential to be connected through to Derby Street which would add another public space in close proximity to the Hospital.

Development in this precinct will step down in bulk and scale to provide a transition to the surrounding residential areas located south and east of the Hospital Precinct and will ensure that impacts in terms of visual amenity and overshadowing are minimised.

Figure E12.2 Character areas



12.2 Land use controls

12.2.1 Mixed use development controls

A. Background

Mixed use developments can provide a variety of uses and activities, to ensure that the Hospital Precinct outside the working day, adding vibrancy and life to the streets. Different uses within the same building are encouraged with retail and commercial activity at ground level, and residential uses, requiring privacy and noise mitigation, located above street level. Residential developments overlooking street life provide active visual surveillance and contribute to a sense of security within an area.

The development of mixed use buildings within the Hospital Precinct, with active uses at the street frontage, is a significant strategy designed to revitalise the precinct and encourage medical related uses.

B. Objectives

- a) To encourage a variety of mixed use developments in the Hospital Precinct;

- b) To encourage medical based uses and facilities to locate in close proximity of the hospital;
- c) To create additional jobs to support the hospital and local community;
- d) To provide increased density to allow hospital workers to live close to work;
- e) To create lively streets and public spaces night and day within the Hospital Precinct;
- f) To increase the diversity and range of shopping and recreational activities for workers, residents and visitors;
- g) To enhance public safety by increasing activity in the public domain outside business hours;
- h) To minimise potential conflicts and achieve compatibility between different uses;
- i) To ensure that the design of mixed use developments addresses residential amenity;
- j) To create legible safe access and circulation in mixed use developments;
- k) To ensure that mixed use developments address the public domain and the street; and
- l) To ensure an appropriate scale between new development and street width, local context, adjacent buildings and public domain.

C. Controls

- 1) Mixed use developments are to provide flexible floor areas and layouts to both the ground and first floor of buildings to accommodate a range of commercial uses.
- 2) Standard floor to ceiling heights apply for mixed-use developments in accordance with the Building Code of Australia and the Residential Flat Design Code. However, where an applicant is seeking to take advantage of the additional building height incentives prescribed by LEP 2010, the following floor to ceiling heights apply:
 - a) 3.5m on the ground and first floor; and
 - b) 2.7m on the upper floors

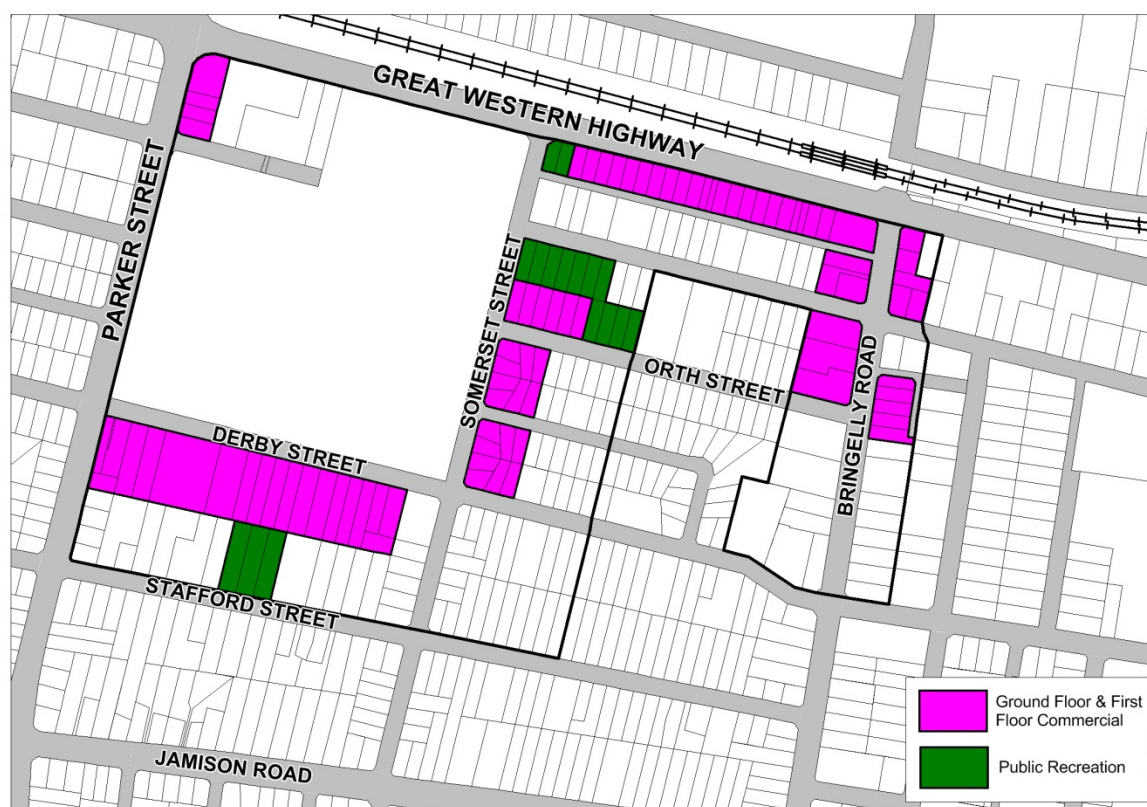
These floor to ceiling heights must be applied to the entire floor in order to be granted the height bonus.

To demonstrate that 2.7m floor to ceiling heights can be achieved (allowing for recessed lighting) a minimum floor to floor height of 3.1m is to be provided.

- 3) Where it is proposed to vary the height of building controls to take advantage of the height incentives, applicants are to consult Council early in the design process.
- 4) The commercial and residential activities of the building are to have separate service provision, such as loading docks, lobbies and lift access, defined parking areas, garbage storage and servicing.
- 5) Mixed use developments are to provide commercial frontage (retail/business/office premises) as a part of the development as shown in Figure E12.3 for the ground and first floors. Variation may be considered to this control in order to provide adaptable housing.
- 6) The ground floor of a mixed use development is to provide a minimum of 75% commercial frontage.
- 7) A minimum site width of 24m is required for any mixed use development.

- 8) Residential entries shall be clearly marked and provide direct access to the street. Vehicular access is to be from rear lanes, where practicable and possible. Pedestrian entrances are to address the main streets.
- 9) Commercial and residential uses should have clearly separate entries and vertical circulation.
- 10) Security access controls must be provided to all entrances into private areas, including car parks and internal courtyards.
- 11) Buildings are to provide an active ground floor setback zone, free of columns, balustrades and other visual barriers to the primary streetfront.
- 12) Blank building walls at ground level are to be avoided.

Figure E12.3 Ground and first floor commercial



12.3. Built form controls

A. Background

Building form and character refers to the individual elements of building design that collectively contribute to the character and appearance of the built environment. Penrith LEP 2010 includes provisions for land use, building heights, floor space ratio, heritage provisions and design excellence. The controls in this section of the DCP encourage buildings that provide high quality design, innovation and creativity.

B. Objectives

- a) To establish an appropriate scale, dimension, form and separation of buildings;
- b) To achieve active street frontages with good physical and visual connections between buildings and the street;
- c) To ensure there is consistency in the main street frontages of buildings by having a common alignment to reinforce the streetscape sense of enclosure;
- d) To provide for pedestrian comfort and protection from weather conditions;
- e) To define the public street to provide spaces that are clear in terms of public accessibility and safety, and are easy to maintain;
- f) To ensure building depth and bulk is appropriate to the environmental setting and landform;
- g) To achieve visual interest and a reduction in scale through building design and finishes;
- h) To achieve design excellence;
- i) To achieve a high quality public domain through innovative use of landscape and public domain upgrades
- j) To achieve a high level of amenity throughout the Hospital Precinct and a sustainable urban environment; and
- k) To ensure that buildings are responsive to the overall character of the Hospital Precinct.

12.3.1. Street alignment, building height and setbacks

A. Background

Well framed streets are an important characteristic of a town centre. Buildings within the Hospital Precinct should contribute to a strong definition of the street and public domain by providing an appropriate scale, proportion and sense of enclosure to streets that reflect the hierarchy of the street and the precinct's role as an important centre.

Building alignment and street setbacks establish the front building line. They help to create the proportions of the street reserve and the level of interaction of the building to the street. They can contribute to the public domain by enhancing streetscape character and continuity of street facades.

Street setbacks can also be used to enhance the building address and provide for landscape areas, entries to buildings and deep soil zones. Buildings align along the street with a common setback line to reinforce the urban character and improve pedestrian accessibility, amenity and activity at street level.

Street frontage heights refer to the height of the building at the street alignment including buildings with setbacks. Above the street setback height, upper levels of buildings should be setback further to maintain an appropriate scale for the area.

The built form for the Hospital Precinct should be expressed as mixed use developments comprising of commercial and retail on the lower floors with additional levels of dedicated residential set further back.

B. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Establish consistent streetscapes through control of the built form visible from the public domain;

- b) Provide street setbacks appropriate to building function and character;
- c) Establish the desired spatial proportions of the street and define the street edge;
- d) Provide for an appropriate transition in building heights from key public spaces;
- e) Locate active uses closer to pedestrian activity areas;
- f) Maximise solar access to the public domain;
- g) Ensure an appropriate level of amenity for building occupants in terms of daylight access, outlook, view sharing, ventilation, wind mitigation, and privacy;
- h) Achieve comfortable public domain environments for pedestrians in terms of scale, daylight access and wind mitigation as well as healthy environments for street trees; and
- i) Provide building separation for visual and acoustic privacy.

C. Controls

- 1) Street building alignments are to be provided as specified in Figure E12.4.
- 2) Minor projections into front building lines and setbacks for sun shading devices, entry awnings and cornices are permissible.
- 3) Building height will generally be restricted to a maximum podium height of 2-4 storeys addressing the main streets, with any additional storeys set back.
- 4) Developments located within the Residential Edge Precinct must step down in height and demonstrate that the development does not adversely impact on the adjoining residential area in terms of visual amenity or overshadowing.

Figure E12.4 Street setbacks



12.3.2. Building Depth and Bulk

A. Background

Controlling the size of upper levels of taller buildings allows for good internal amenity, access to natural light and ventilation, and reduces potential adverse effects that tall and bulky buildings may have on the public domain.

B. Objectives

- a) To provide viable and useable commercial floor space;
- b) To ensure access to light, ventilation and outlook and minimise the dependence on artificial light;
- c) To reduce the bulk of buildings by limiting depth;
- d) To reduce the extent of overshadowing on neighbouring properties; and
- e) To reduce the apparent bulk and scale of buildings by breaking up expanses of building wall with modulation of form.

C. Controls

- 1) Non-residential buildings greater than 12m in height are to have a maximum depth of 25m.
- 2) All points of an office floor should be no more than 10m from a source of daylight (e.g. window, atria or light wells).
- 3) Atria, light wells and courtyards are to be used to improve internal building amenity and achieve cross ventilation and/or stack effect ventilation.
- 4) Large unrelieved expanses of wall or building mass will not be supported and should be broken up by the use of suitable building articulation, fenestration or alternative architectural enhancements.

12.3.3. Boundary setbacks and building separation

A. Background

Setbacks define the spaces between buildings and the balance in a street between built form and landscape between the buildings. The setbacks between the buildings set the rhythm of the street and contribute to the character of the street (ie mixed use versus residential).

Separation in combination with setbacks contributes to amenity by creating privacy, and allowing ventilation, daylight access and view sharing. The degree of separation required for the side setback at the street will relate directly to the design of any apartment or commercial use facing that boundary. For example, if living areas and balconies have their primary orientation towards the side boundary then the separation distance will take precedence over the setback control.

Separation for mixed use development containing residential and commercial uses is to be in accordance with specified distances for each component use.

B. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Ensure an appropriate level of amenity for building occupants in terms of daylight access, outlook, view sharing, ventilation, wind mitigation and privacy; and

- b) Achieve usable and pleasant streets and public domain areas in terms of wind mitigation and daylight access.

C. Controls

- 1) The minimum side and rear building setbacks for non-residential uses are specified in Table E12.1.
- 2) If the specified setback distances cannot be achieved when an existing building is being refurbished or converted to another use, appropriate visual privacy levels are to be achieved through other means.
- 3) Minimum separation distances for buildings within a site and between adjoining sites for buildings are:

Up to four storeys (approximately 12m):

- 9m between habitable and non-habitable
- 6m between non-habitable

Five to eight storeys (approximately 25m)

- 12m between habitable and non-habitable
- 9m between non-habitable rooms

Table E12.1 Side and rear setback requirements

Building height and use	Minimum Side and Rear Setback
Non-residential uses:	
– up to 12m	0 m
– 12m to 24m	6 m

12.3.4. Site coverage and deep soil zones

A. Background

Limiting site coverage provides separation between buildings. This space may be public (accessible and useable by the general public), communal (shared by all occupants of a development) or private (for the exclusive use of a single dwelling or tenancy). Limiting site coverage improves amenity by providing daylight access, visual privacy and opportunities for recreation and social activities.

Deep soil zones are areas of natural ground retained within a development, uninhibited by artificial structures and with relatively natural soil profiles. Deep soil zones have important environmental benefits, including:

- a) Promoting healthy growth of large trees with large canopies;
- b) Protecting existing mature trees; and
- c) Allowing infiltration of rainwater to the water table and reduction of stormwater runoff.

B. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Provide an area on sites that enables soft landscaping and deep soil planting, permitting the retention and/or planting of trees that will grow to a large or medium size;
- b) Limit building bulk on a site and improve the amenity of developments, allowing for good daylight access, ventilation and improved visual privacy; and
- c) Provide passive and active recreational opportunities.

C. Controls

- 1) Open space must be provided equivalent to 25% of the total site area.
- 2) The maximum site cover and minimum deep soil zone for development is specified in Table E12.2:

Table E12.2 Maximum site cover and minimum deep soil zone

Character Area	Maximum Site Cover	Minimum Deep Soil Zone (% of Site Area)
Commercial Mixed Use and Medical Mixed Use	75%	10%
Residential Edge	50%	15%

Note: Council may consider 100% site coverage on land within the Commercial Mixed Use character area along the Great Western Highway only.

- 3) The deep soil zone is to be provided in one continuous block. If multiple deep soil zones are provided, they must have a minimum dimension (in any direction) of 6m.
- 4) Where non-residential developments result in full site coverage and there is no capacity for water infiltration, planting on roof tops or over basement carport structures can be provided as a component of the mixed use development. In such cases, compensatory stormwater management measures must be integrated within the development to minimise stormwater runoff.
- 5) Where deep soil zones are provided, they must be associated with any existing mature trees as well as allowing for the planting of additional trees and landscape.
- 6) No structures, works or excavations that may restrict vegetation growth are permitted in deep soil zones (including, but not limited to, car parking, hard paving, patios, decks and drying areas).

12.3.5 Building exteriors

A. Background

A town's streetscape and public domain is defined by its buildings, streets and public places. The maintenance and improvement of the public domain is dependent on a consistent approach to the design of new development including the articulation and finish of building exteriors.

B. Objectives

The objectives of this section are to ensure that buildings in the Hospital Precinct:

- a) Contribute positively to the streetscape and public domain by means of high quality architecture and robust selection of materials and finishes;

- b) Provide richness of detail and architectural interest especially at visually prominent parts of buildings, such as lower levels and roof tops;
- c) Present appropriate design responses to nearby development that complement the streetscape;
- d) Clearly define the adjoining streets, street corners and public spaces and avoid ambiguous external spaces with poor pedestrian amenity and security;
- e) Maintain a pedestrian scale in the articulation and detailing of the lower levels of the building; and
- f) Contribute to a visually interesting skyline.

C. Controls

- 1) Adjoining buildings are to be considered when designing new buildings and extensions to existing buildings in terms of:
 - a) Appropriate alignment and street frontage heights;
 - b) Setbacks above street frontage heights;
 - c) Selection of appropriate materials and finishes;
 - d) Facade proportions including horizontal or vertical emphasis; and
 - e) Provision of enclosed corners at street intersections.
- 2) Balconies and terraces should be provided, particularly where buildings overlook parks and on low rise parts of buildings. Gardens on the top of setback areas of buildings and on roofs are encouraged.
- 3) Reliance on continuous balconies to create the main façade is not supported.
- 4) Building façades are to be articulated so that they address the street and add visual interest.
- 5) The design of the street and laneway facades should respond to the existing lot subdivision pattern in the vertical expression of the building.
- 6) External walls should be constructed of high quality and durable materials and finishes with 'self-cleaning' attributes, such as face brickwork, rendered brickwork, stone, concrete and glass. Use of painted render as the primary material is not encouraged.
- 7) To assist articulation and visual interest, large expanses of any single material are to be avoided.
- 8) Glazing for retail uses is to be maximised, but broken into sections to avoid large expanses of glass.
- 9) Highly reflective finishes and curtain wall glazing are not permitted above ground floor level.
- 10) A materials sample board and schedule are required to be submitted with applications for development over \$1 million or for that part of any development built to the street edge.
- 11) The design of roof plant rooms and lift overruns is to be integrated into the overall architecture of the building, and in residential buildings, may be screened by roof pergolas.

12.3.6 Landscape design

A. Background

Landscape design includes the planning, design, construction and maintenance of all utility, open space and garden areas. Water sensitive urban design principles are encouraged and should be applied as much as possible. Good landscaping is fundamental to the amenity and quality of outside space for residential flats.

Where streets vary in scale and character, trees and plantings should be used to enhance and create a consistent character to each street and place. The design of parks and open space areas should reflect the function of the place, its existing or potential character, and its place in the overall structure and hierarchy of the public domain. The design of these spaces should also contribute to providing a good amount of public amenity within the Hospital Precinct.

B. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Ensure that the use of potable water for landscaping irrigation is minimised;
- b) Ensure landscaping is integrated into the design of development;
- c) Add value and quality of life for residents and occupants within a development in terms of privacy, outlook, views and recreational opportunities;
- d) Achieve a strong and distinctive landscape character for the precinct and contribute to the reduction of surface stormwater runoff;
- e) Celebrate the symbolic interpretation with the landscape of regional parklands, the mountains and historic watercourses; and
- f) Create an ongoing City ecology by using appropriate species for the area.

C. Controls

- 1) Recycled water should be used to irrigate landscaped areas.
- 2) Commercial and retail developments are to incorporate planting into accessible outdoor spaces.
- 3) Remnant vegetation must be maintained throughout the site, wherever practicable.
- 4) A long term landscape concept plan must be provided for all landscaped areas, including the deep soil zone, in accordance with the Landscape Design section of this DCP. The plan must outline how landscaped areas are to be maintained for the life of the development.

12.3.7 Planting on structures

A. Background

The following controls apply to planting on roof tops or over car park structures, particularly for communal open space required as a component of mixed use residential development, or in non-residential developments where the landscaping proposed is not on natural ground.

The plants in these areas are grown in total containment with artificial soils, drainage and irrigation and are subject to a range of environmental stresses that affect their health, and

ultimately their survival. Compliance with the controls in this section will help minimise health risks to plants and provide quality landscaped areas.

B. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Contribute to the quality and amenity of open space on roof tops and internal courtyards;
- b) Encourage the establishment and healthy growth of greening in urban areas; and
- c) Minimise the use of potable water for irrigating planting on structures.

C. Controls

- 1) Planting should be designed for optimum conditions for plant growth by:
 - a) Providing soil depth, soil volume and soil area appropriate to the size of the plants to be established;
 - b) Providing appropriate soil conditions and irrigation methods; and
 - c) Providing appropriate drainage.
- 2) Planters should be designed to support the appropriate soil depth and plant selection by:
 - a) Ensuring planter proportions accommodate the largest volume of soil possible and soil depths to ensure tree growth; and
 - b) Providing square or rectangular planting areas rather than narrow linear areas.
- 3) Minimum soil depths should be increased in accordance with:
 - a) The mix of plants in a planter, for example, where trees are planted in association with shrubs, groundcovers and grass;
 - b) The level of landscape management, particularly the frequency of irrigation;
 - c) Anchorage requirements of large and medium trees; and
 - d) Soil type and quality.

12.4. Other controls

12.4.1 Public domain

All public domain works within the Hospital Precinct shall be undertaken in accordance with the provisions of Penrith City Council's "Kingswood Public Domain Manual" (2013) and the other relevant parts of this DCP.

12.4.2 Pedestrian amenity

The pedestrian environment provides people with their primary experience of and interface with the public domain. This environment needs to be safe, functional and accessible to all. It should provide a wide variety of opportunities for social and cultural activities.

Pedestrian amenity incorporates all those elements of individual developments that directly affect the quality and character of the public domain. The pedestrian amenity provisions are intended to achieve a high quality of urban design and pedestrian comfort in the public spaces of the Hospital Precinct.

The controls in this section aim to increase the vitality, safety, security and amenity of the public domain by:

- a) Encouraging future through site links at ground level;
- b) Ensuring active street frontages and positive building address to the street;
- c) Ensuring provision of awnings; and
- d) Protecting significant views and vistas along streets.

12.4.2.1 Permeability

A. Background

Through site links provide access connections between the long sides of street blocks for pedestrian and vehicular access at street level. These links provide an important permeability function in the form of lanes, shared zones and pedestrian ways.

B. Objectives

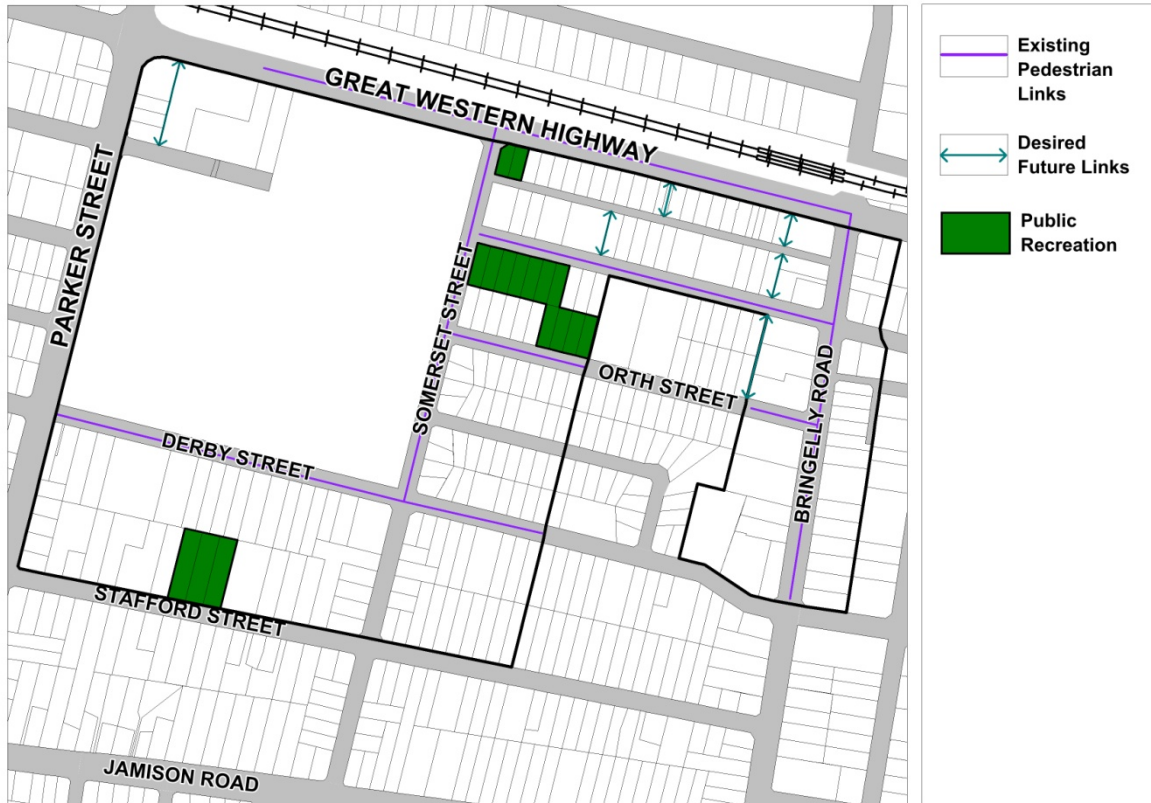
- a) To improve access in the Hospital Precinct by providing through site links as redevelopment occurs;
- b) To retain and enhance existing through site links as redevelopment occurs;
- c) To achieve activated links to increase safety and vitality;
- d) To achieve a high quality pedestrian environment;
- e) To retain or revitalise lanes as useful and interesting pedestrian connections as well as for service access; and
- f) To improve the permeability of large sites when they are redeveloped for more intensive uses.

C. Controls

- 1) Through site links are to be provided as shown in Figure E12.6 with accessible paths of travel that are:
 - a) A minimum width of 4m for its full length and clear of all obstructions including columns, stairs, building overhangs etc;
 - b) Direct and publicly accessible thoroughfares for pedestrians;
 - c) Open-air for its full length and have active frontages or a street address; and
 - d) Activated by retail or commercial for a minimum of 70% of its length.
- 2) Existing dead end lanes are to be extended through to the next street as redevelopment occurs.
- 3) New through site links should be aligned and connected with existing and proposed through block lanes, shared zones and pedestrian ways and opposite other through site links.
- 4) Existing publicly and privately owned links are to be retained.
- 5) Signage is to be located at street entries indicating public access through the site as well as the street to which the link connects.
- 6) Lanes are to be designated pedestrian routes that are:
 - a) Accessible paths of travel, with a minimum width of 6m for the full length, which is clear of all obstructions;

- b) Designed, paved and well lit; and
- c) Appropriately signposted indicating the street(s) to which the lane connects.

Figure E12.6 Existing and desired links



12.4.2.2 Active street frontages and address

A. Background

Active street frontages promote an interesting and safe pedestrian environment. Busy pedestrian areas and non-residential uses, such as shops, studios, offices, cafes, recreation and promenade opportunities, promote the most active street fronts.

Residential buildings contribute positively to the street by providing a clear street address, direct access from the street and direct outlook over the street.

B. Objectives

- a) To promote pedestrian activity and safety in the public domain;
- b) To maximise active street fronts in Hospital Precinct;
- c) To define areas where active streets are required or outdoor dining is encouraged; and
- d) To encourage an address to the street outside of areas where active street frontages are required.

C. Controls

- 1) Active frontage uses are defined as one or a combination of the following, at street level:
 - a) An entrance to retail premises;
 - b) A shop front;
 - c) Glazed entries to commercial and residential lobbies occupying less than 50% of the street frontage, to a maximum of 12m frontage;
 - d) A café or restaurant if accompanied by an entry from the street;
 - e) Active office uses, such as a reception, if visible from the street; and
 - f) A public building, if accompanied by an entry.
- 2) Active street fronts are to be located at the ground level of all buildings located in those areas as shown in Figure E12.7.
- 3) Ground floor active street frontage uses are to be at the same level as the adjoining footpath and must be directly accessible from the street.
- 4) Restaurants, cafes and the like are to consider providing openable shop fronts. A separate approval from Council is required under the *Roads Act* and *Local Government Act* for outdoor street dining.
- 5) Street address is defined as entries, lobbies, and habitable rooms with full height to a minimum of 2.1m clear glazing to the street.
- 6) Residential developments are to provide a clear street address and direct pedestrian access off the primary street front or laneway (if provided), and allow for residents to overlook all surrounding streets.
- 7) Commercial entries are to be separate to residential entries and are to address the primary street frontage.
- 8) Large developments should provide multiple entrances including an entrance on each street frontage leading to separate cores.
- 9) Residential buildings are to provide not less than 65% of the lot width as street address.

Figure E12.7 Active Street Frontages



12.4.2.3 Safety and security

A. Background

The design of buildings and public spaces has an impact on perceptions of safety and security, as well as actual opportunities for crime. A safe and secure environment encourages activity, vitality and viability, enabling a greater level of security.

B. Objectives

- To minimise opportunities for crime by incorporating environmental design in the development;
- To ensure developments are safe and secure for pedestrians;
- To contribute to the safety of the public domain; and
- To encourage a sense of ownership over public and communal open spaces.

C. Controls

- For residential lobbies the lift is to be visible upon entry to the foyer.
- The extent of corridors between the entry doors and the lift is to be minimised.
- The minimum width of the corridor is to be at least 3m leading to the lift on the ground floor.
- All residential lobbies are to be provided with a seating area and space for letterboxes.

- 5) Developments are to address the provisions of the Site Planning and Design Principles section of this DCP as it relates to Crime Prevention through Environmental Design (CPTED) principles.
- 6) Building design, particularly for higher density residential buildings, are to allow for passive surveillance of public and communal spaces, accessways, entries and driveways.
- 7) For large scale retail and commercial development with a gross floor area of over 5,000m², a 'safety by design' assessment by a qualified consultant, is to be provided in accordance with the CPTED principles.
- 8) Certain types of development will be referred to Council's Community Safety Officer and, where appropriate, NSW Police in accordance with the CPTED protocol between Penrith City Council and NSW Police.

12.4.2.4 Awnings

A. Background

Awnings increase the useability and amenity of public footpaths by protecting pedestrians from sun and rain. They encourage pedestrian activity along streets and, in conjunction with active edges such as retail frontages, support and enhance the vitality of the local area. Awnings, like building entries, provide a public presence and interface within the public domain and contribute to the identity of a development.

A separate approval to erect an awning over the road reserve including a footpath will be required under the *Roads Act* and the *Local Government Act*.

B. Objectives

- a) To provide shelter from wind and rain for public streets where most pedestrian activity occurs;
- b) To address the streetscape by providing a consistent street frontage in the Hospital Precinct; and
- c) To provide a visually integrated streetscape.

C. Controls

- 1) Continuous street frontage awnings are to be provided for all new developments where active street frontages have been identified in Figure E12.7.
- 2) Awnings should generally:
 - a) Be a minimum 2.8m deep where street trees are not required, otherwise a minimum 2.4m deep;
 - b) Have a minimum soffit height of 3.2m and a maximum of 4m;
 - c) Be stepped for design articulation or to accommodate sloping streets, integral with the building design and not exceed 700mm;
 - d) Be low profile, with slim vertical fascias or eaves (generally not to exceed 300mm height); and
 - e) Be setback from the kerb to allow for clearance of street furniture, trees, etc (minimum 600mm).
- 3) Awning design must match building facades and be complementary to those of adjoining buildings.

- 4) Awnings must wrap around corners for a minimum of 6m.
- 5) Under-awning lighting, recessed into the soffit of the awning or wall mounted onto the building, is to be provided to facilitate night use and to improve public safety.
- 6) One under-awning sign may be attached to the awning and must be 6m away from the sign of the adjoining property.

12.4.2.5 Vehicle footpath crossings

A. Background

Vehicle crossings over footpaths disrupt pedestrian movement and threaten safety. The design of vehicle access to buildings also influences the quality of the public domain. Overly wide and high vehicle access points detract from the streetscape and the active use of street frontages.

The design and location of vehicle access to developments should minimise both conflicts between pedestrians and vehicles on footpaths, particularly along pedestrian priority places, and visual intrusion and disruption of streetscape continuity.

B. Objectives

- a) To make vehicle access to buildings more compatible with pedestrian movements;
- b) To reduce the impact of vehicular access on the public domain; and
- c) To ensure vehicle entry points are integrated into building design and contribute to the building design.

C. Controls

- 1) A maximum of one vehicle access point (including the access for service vehicles and parking for non-residential uses within mixed use development) will be permitted for each development.
- 2) Where practicable, vehicle access is to be from lanes and minor streets rather than primary street fronts or streets with major pedestrian activity.
- 3) Where practicable, adjoining buildings are to share or amalgamate vehicle access points. Internal on-site signal equipment is to be used to allow shared access. Where appropriate, new buildings should provide vehicle access points so that they are capable of shared access at a later date.
- 4) To ensure pedestrian safety, vehicle entry points should not be located adjacent to building entry points.
- 5) Vehicle access widths and grades are to comply with the Australian Standard.
- 6) Vehicle access ramps parallel to the street frontage will not be permitted.
- 7) Vehicle access ramps must be integrated into the building design and are not permitted as separate structures. Ramps must not be exposed along the side boundary.
- 8) Vehicle entry points are to be integrated into building design.
- 9) Doors to vehicle access points are to be roller shutters or tilting doors fitted behind the building facade.
- 10) Vehicle entries are to have high quality finishes to walls and ceilings as well as high standard detailing. No service ducts or pipes are to be visible from the street.
- 11) Porte cocheres disrupt pedestrian movement and do not contribute to active street frontage. They may only be permitted for hotels, medical use buildings and major tourist

venues subject to urban design, streetscape, heritage and pedestrian amenity considerations.

- 12) If justified, porte cocheres are to be internal to the building with one combined vehicle entry and exit point, or one entry and one exit point on two different street fronts of the development.
- 13) In exceptional circumstances for buildings with one street frontage only, an indented porte cochere with separate entry and exit points across the footpath may be permitted, as long as it is constructed entirely at the footpath level, provides an active frontage at its perimeter and provides for safe and clear pedestrian movement along the street.

12.4.3 Car Parking

A. Background

Most controls that relate to car parking are included in the Transport, Access and Parking section of this DCP. The following section provides some additional on-site car parking options for the Hospital Precinct.

B. Objectives

- a) To facilitate an appropriate level of on-site parking provision to cater for a mix of development types;
- b) To minimise the visual impact of on-site parking; and
- c) To provide adequate space for parking and manoeuvring of vehicles.

C. Controls

- 1) Car parking above ground level is to have a minimum floor to ceiling height of 2.8m so it may be adapted to another use in the future.
- 2) Where possible, natural ventilation is to be provided to underground parking areas with ventilation grilles and structures that are:
 - a) Integrated into the overall façade and landscape design of the development;
 - b) Located away from the primary street façade; and
 - c) Oriented away from windows of habitable rooms and private open space areas.
- 3) Proposals for basement parking areas are to be accompanied with a geotechnical report, prepared by an appropriately qualified professional, and any other supporting information.
- 4) Basement car parking should be located directly under building footprints to maximise opportunities for deep soil areas unless the structure can be designed to support mature plants and deep root plants.
- 5) The appearance of car parking is to be improved by locating parking so that it is not visually prominent from the street.
- 6) Car parking structures located above ground and viewed from the public domain are to be architecturally treated or where practical, sleeved with development.
- 7) Car parking layouts are to comply with the relevant Australian Standards.

12.4.4 Site Facilities and Services

A. Objectives

- a) To ensure that the design and location of site facilities (such as clothes drying areas, mail boxes, etc.) are integrated within the development and are unobtrusive;
- b) To ensure that site services and facilities are adequate for the nature and quantum of development; and
- c) To establish appropriate access and location requirements for servicing.

B. Controls

- 1) Letterboxes should be integrated into a wall immediately adjacent to the building entrance(s). Where there are a number of entrances into the building, the letterboxes located at each entrance should service the tenancies that will utilise that building entrance.
- 2) Letterboxes shall be secure and large enough to accommodate articles such as newspapers.
- 3) Telecommunication infrastructure should be built into the development and predominantly below ground, incorporating the following services fundamental in the effective operation of businesses, home businesses and dwellings:
 - a) Multiple telecom services including high speed internet (including broadband), voice and data systems; and
 - b) Cabling from all telephone lines and cable TV.
- 4) Where a master antenna is provided, the antenna must be sited in a location that is least visible from surrounding public spaces/ open areas.
- 5) Air conditioning units, service vents and other associated structures should be:
 - a) Located away from street frontages and lanes;
 - b) Located in a position where the likely impact is minimised; and
 - c) Adequately setback from the perimeter wall or roof edge of buildings.
- 6) Where they are to be located on the roof, they should be integrated into the roofscape design and in a position where such facilities do not become a feature in the skyline at the top of building(s).
- 7) Separate waste storage and collection areas are to be provided for domestic and commercial waste.
- 8) For developments comprising residential uses, a separate storage and collection area for bulky waste (such as cardboard boxes) and old or discarded furniture/appliances shall be provided.
- 9) Vehicular access to the waste collection areas should be from rear lanes, side streets and right of ways.
- 10) The responsibility for the ongoing management of waste facilities must be determined prior to work commencing on the development. Details of the management of waste by future tenants are to form part of the Waste Management Plan for the development. (See Appendix F3 for details on waste management plans).
- 11) Loading/unloading areas are to be:
 - a) Integrated into the design of developments;

- b) Separated from car parking and waste storage and collection areas;
 - c) Located away from the circulation path of other vehicles;
 - d) Designed for commercial vehicle circulation and access complying with AS2890.2;
and
 - e) Vehicles are to enter and exit the site in a forward direction.
- 12) Separate loading/unloading areas are to be provided for commercial/retail and residential uses.
- 13) Generally, provision must be made for all emergency vehicles to enter and leave the site in a forward direction, particularly NSW Fire Brigade vehicles where:
- a) NSW Fire Brigade cannot park their vehicles within the road reserve due to the distance of hydrants from the building or restricted vehicular access to hydrants; or
 - b) Otherwise required by the NSW Fire Brigade's Code of Practice – Building Construction – NSWFB Vehicle Requirements.
- 14) For developments where NSW Fire Brigade vehicle(s) are required to enter the site, the circulation path and access/egress provision is to comply with the NSW Fire Brigade's Code of Practice – Building Construction – NSWFB Vehicle Requirements.

12.5 Other Information

Please refer to Parts C and D of this DCP for other relevant controls that may apply to development within the Hospital Precinct.

Table of Contents

E12 PART B BUSINESS PARK PRECINCT	26
12.6 INTRODUCTION	26
12.6.1 AREA INCLUDED IN THE BUSINESS PARK PRECINCT	26
12.6.2 GENERAL OBJECTIVES	27
12.6.3 REQUIREMENTS FOR A CONCEPT PLAN	27
12.6.4 PREPARATION OF A CONCEPT PLAN	27
12.7 BUILT FORM CONTROLS	28
12.7.1 STREET ALIGNMENT AND SETBACKS	28
12.7.2 SIDE AND REAR SETBACKS	29
12.7.3 BUILDING BULK	30
12.7.4 BUILDING SEPARATION	30
12.7.5 SITE COVERAGE AND DEEP SOIL ZONES	31
12.7.6 ARCHITECTURAL EXCELLENCE	31
12.7.7 ACTIVE STREET FRONTAGES	33
12.7.8 PEDESTRIAN PERMEABILITY	34
12.7.9 AWNINGS	35
12.7.10 LANDSCAPING AND FENCING	35
12.7.11 WATER AND ENERGY EFFICIENT DESIGN	36
12.7.12 TRAFFIC, PARKING AND SITE ACCESS	37

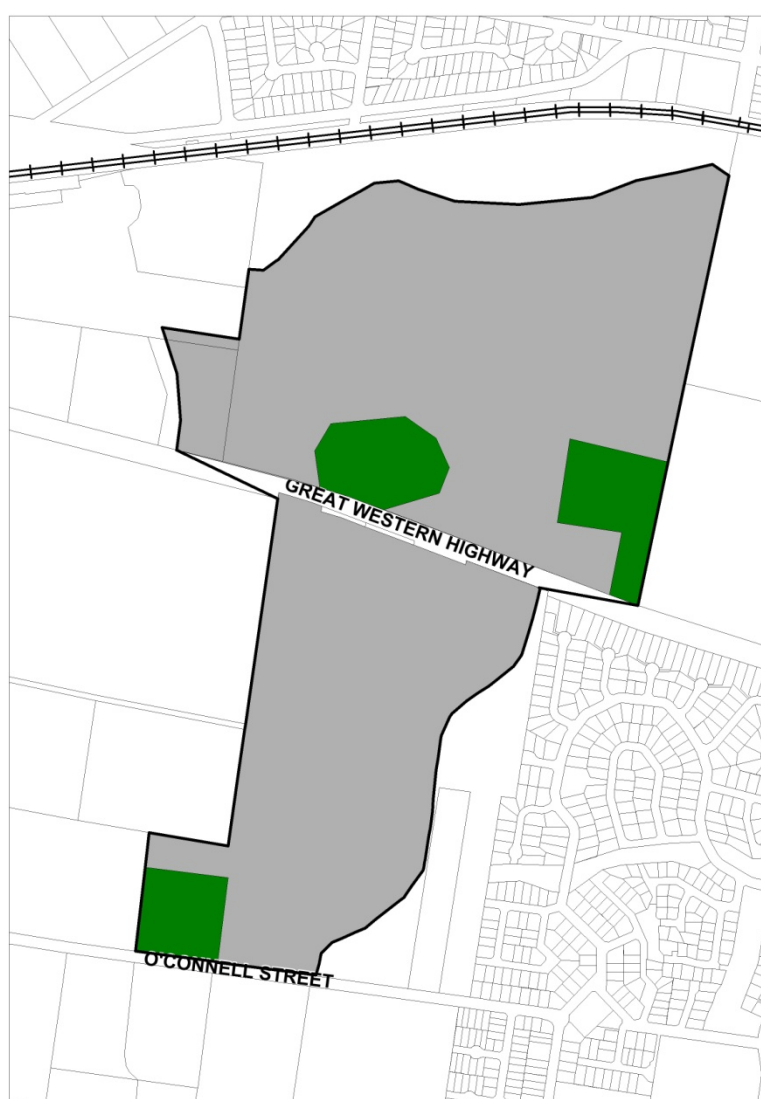
E12 Part B Business Park Precinct

12.6 Introduction

12.6.1 Area included in the Business Park Precinct

This Section applies to development on land covered by the Business Park Precinct as shown in Figure E12.8. This Section provides specific controls for the Business Park Precinct in addition to the general controls elsewhere in this DCP. In the event of any inconsistency between this Section and the rest of the DCP, the requirements of this Section prevail.

Figure E12.8 Land to which this section applies



12.6.2 General Objectives

- a) To encourage development that promotes investment in the Business Park;
- b) To provide a high quality environment for workers;
- c) To promote quality urban design, architectural excellence and environmental sustainability in the planning and development, and long term use of the Business Park;
- d) To encourage development in the Business Park that activates the public domain and creates an attractive and vibrant precinct;
- e) To provide a framework that is flexible enough to accommodate a range of different and innovative uses;
- f) To provide high levels of accessibility throughout the Business Park;
- g) To provide clear connectivity through the Business Park and to the surrounding neighbourhoods; and
- h) To provide the framework to facilitate and encourage the use of public transport, safe pedestrian and cycle movement, and vehicular movement.

12.6.3 Requirements for a Concept Plan

- 1) Council must not grant consent to development on land comprised within the Business Park unless:
 - a) A Concept Plan has been prepared substantially in accordance with the requirements of this Section, submitted to Council and adopted by Council; and
 - b) The development is consistent with the adopted Concept Plan.
- 2) Council may waive the requirement for a Concept Plan due to:
 - a) The minor nature of a development;
 - b) The adequacy of other planning controls; or
 - c) Council's discretion.

12.6.4 Preparation of a Concept Plan

The Concept Plan shall address the following:

- a) The existing physical and environmental features of the site;
- b) The general indication of the phasing of development;
- c) The proposed site layout including an indicative road layout;
- d) The distribution of land uses across the site and within multi storey buildings;
- e) An urban design and landscape strategy;
- f) An infrastructure strategy;
- g) A public art strategy;
- h) Location of open space, its function and landscaping;
- i) Design principles based on analysis of the site and its context;
- j) Identification of gateway sites and corridors;

- k) A street setback plan showing minimum front building setbacks and build-to boundary front setbacks;
- l) Identification of active street frontages;
- m) Pedestrian, vehicular and cycle road access and circulation networks and facilities;
- n) Remediation of any site contamination;
- o) Any other major infrastructure such as transmission lines, trunk sewage or water supply lines.

12.7 Built Form Controls

12.7.1 Street Alignment and Setbacks

Street setbacks and building alignments establish the front building line. They help to create the proportions of the street and can contribute to the public domain by enhancing streetscape character and continuity of street facades.

Street setbacks can also be used to enhance the setting and address for the building. They provide for landscape areas and entries to ground floor uses. Setbacks allow natural ventilation, daylight access and view sharing and increase privacy.

Above street frontage height, buildings should be set back to provide sunlight access to streets, pedestrian areas and lower levels of other buildings. These setbacks allow view corridors, an appropriate building scale for pedestrians, and good growing conditions for street trees.

A. Objectives

- a) To establish consistent building alignments to the street;
- b) To provide street setbacks appropriate to building function and character;
- c) To establish the desired spatial proportions of the street and define the street edge;
- d) To create a transition between public and private space;
- e) To locate active uses closer to pedestrian activity areas;
- f) To maximise solar access to the public domain;
- g) To ensure an appropriate level of amenity for building occupants in terms of daylight access, outlook, view sharing, ventilation, wind mitigation, and privacy; and
- h) To achieve useable and pleasant streets and public domain areas in terms of wind mitigation and daylight access.

B. Controls

- 1) Street setbacks are to be in accordance with the requirements specified in Table E12.2 or in accordance with an adopted Concept Plan for the Business Park. These setback areas are to be used for landscaping designed in accordance with the Landscape Design section of this DCP.
- 2) The minimum setback to the Great Western Highway is 20m.
- 3) Where appropriate, Landmark buildings are to be located on corner allotments to reinforce the intersections.
- 4) All buildings are to address the primary road.

- 5) A well designed urban landscaped entry plaza is to be developed on the frontage of all developments fronting primary roads.
- 6) Balconies may project up to 1m into front building setbacks, provided the cumulative width of all balconies at that particular level totals no more than 50% of the horizontal width of the building façade, measured at that level.
- 7) Minor projections into front building lines and setbacks for sun shading devices, entry awnings and cornices are permissible.
- 8) Basement car parking is not permitted to encroach into the setback area unless it can be demonstrated that the basement is designed to support significant mature trees and deep root planting.
- 9) Build to lines are to be adhered to however ground floor uses may be considered forward of the building line if these uses promote active street frontages.
- 10) The building setback areas are not to be used for the display or storage of goods/ materials.

Table E12.2: Minimum setback requirements

Road Classification	Minimum Setback
Primary Road	20m
Secondary Road	15m
All other	10m

Gateway Buildings

- 1) Gateway sites are to be nominated as part of future development applications. Special emphasis through architectural quality and detailing is required.
- 2) These buildings are to be iconic in form and will denote and provide emphasis to the street intersections.
- 3) Buildings are to address the corner condition with an emphasis on the higher order road.

12.7.2 Side and Rear Setbacks

Side and rear setback spaces provide a corridor of deep soil between sites. This area allows for the retention of existing mature trees, and future tree planting. Side and rear setbacks also provide opportunity to resolve changes in level between sites.

A. Objectives

- a) To create a pattern of development that positively defines the streetscape;
- b) To provide building separation for visual and acoustic privacy;
- c) To provide deep soil zones, and maintain mature/significant vegetation; and

- d) To contribute to the landscape character of the Business Park.

B. Controls

- 1) Buildings are to be set back 10m from the rear and 5m from side site boundaries.
- 2) Awnings, canopies, balconies, sun shading, and screening elements can project into the side or rear setback zones.
- 3) Basement car park structures should not encroach into the minimum required side or rear setback zone unless the structure can be designed to support mature trees and deep root planting.
- 4) Natural ground level is to be retained throughout side and rear setbacks, where possible.

12.7.3 Building Bulk

A. Objectives

- a) To promote the design and development of sustainable buildings;
- b) To achieve the development of working environments with good internal amenity and minimise the need for artificial heating, cooling and lighting;
- c) To provide viable and useable commercial floor space;
- d) To achieve useable and pleasant streets and public domain at ground level;
- e) To achieve a skyline sympathetic to the topography and context;
- f) To allow for view sharing and view corridors; and
- g) To reduce the apparent bulk and scale of buildings by breaking up expanses of building wall with modulation of form.

B. Controls

- 1) All points of a habited floor should be no more than 12m from a source of daylight (e.g. window, atria, or light wells).
- 2) Use atria, light wells and courtyards to improve internal building amenity and achieve cross ventilation and/or stack effect ventilation.
- 3) Courtyards and atria are to be arranged to promote access to natural light, pedestrian links and slender building forms.
- 4) Large unrelieved expanses of wall or building mass will not be supported and should be broken up by the use of suitable building articulation, fenestration or alternative architectural enhancements.

12.7.4 Building Separation

A. Objectives

- a) To allow solar access to buildings and communal areas;
- b) To retain mature vegetation between buildings and allow for deep soil planting;

- c) To provide a visual break between buildings and reduce the perceived bulk and scale of the built environment;
- d) To provide visual privacy between buildings; and
- e) To provide outlook from buildings.

B. Controls

- 1) A minimum 20m separation is to be provided between buildings facing one another within a site.
- 2) A minimum 10m separation is to be provided between buildings perpendicular to each other within a site. This reduced building separation control only applies where the width of the facing facades does not exceed 20m.
- 3) Building separation between sites is controlled by 12.7.2 Side and Rear Setback controls.

12.7.5 Site Coverage and Deep Soil Zones

Deep soil zones are areas of natural ground retained within a development, uninhibited by artificial structures and with relatively natural soil profiles. Deep soil zones have important environmental benefits, including:

- a) Promoting healthy growth of large trees with large canopies;
- b) Protecting existing mature trees; and
- c) Allowing infiltration of rainwater to the water table and reduction of stormwater runoff.

A. Objectives

- a) To provide developments with a high level of amenity and landscape character;
- b) To retain existing mature trees and allow for future tree planting; and
- c) To contribute to stormwater management and reduce runoff.

B. Controls

- 1) A minimum 20% of the site must be provided as deep soil area. The deep soil area will be included in the total landscaped area calculation for the site.
- 2) The deep soil zone is to be provided in one continuous block. If multiple deep soil zones are provided, they must have a minimum dimension (in any direction) of 6m.
- 3) Deep soil zones must accommodate existing mature trees as well as allowing for the planting of additional vegetation that will grow to be mature trees.
- 4) No structures, works or excavations that may restrict vegetation growth are permitted in deep soil zones (including, but not limited to, car parking and hard paving).

12.7.6 Architectural Excellence

This Section seeks to encourage urban design and architectural excellence as well as environmental sustainability in both the public and private domain. Architectural excellence is particularly important where the building is highly visible from the public domain either outside or within the Business Park.

Good building design should positively contribute to the overall architectural quality of the city and provide buildings appropriate to their context. In some circumstances, this

contribution may be as an iconic or landmark building, but more typically it is a well-mannered building that fits sensitively into the streetscape.

Architectural excellence should be achieved through careful consideration of:

- a) Built form- how it relates to its context;
- b) Quality of materials;
- c) Integrity of the design concept; and
- d) Its contribution to the public domain.

A. Objectives

- a) To encourage a high level of design consideration;
- b) To encourage that significant buildings achieve design excellence;
- c) To provide buildings that contribute positively to the precinct character; and
- d) To encourage the development of sustainable design.

B. Controls

- 1) All development applications are to include a comprehensive site analysis that informs the design of the building and its placement on the site.
- 2) All applications are to include a design report that explains the design concept including built form, context response and materials selection.
- 3) Design of buildings should ensure natural surveillance of pathways and open space around buildings is possible from within the building and/or from adjoining roads and open space areas.
- 4) Landmark and gateway buildings are to demonstrate architectural excellence in the following areas:
 - a) How the building reinforces and enhances significant vistas and view corridors.
 - b) How the building will enliven the public domain it adjoins.
- 5) The development must incorporate a variety of external finishes in terms of both colour and type of material used. The external finishes of the development are to be:
 - a) Made from durable high quality, low maintenance, non reflective materials;
 - b) Compatible with the overall design and form of the development;
 - c) Selected for all built forms to ensure the entire development presents a homogenous form;
 - d) Considered in association with proposed plantings and landscape treatment;
 - e) Considered for their ability to provide visual relief in large wall surfaces and elevations; and
 - f) Selected to ensure the development complements the surrounding built and natural environment.
- 6) Environmentally sustainable initiatives are to be incorporated into the design of all buildings.
- 7) Facades are to be composed with an appropriate scale, rhythm and proportion, which respond to building use and the desired character by:

- a) Defining a base, middle and top related to the overall proportion of the building.
 - b) Articulating building entries with awnings, porticos, recesses, blade walls and projecting bays.
 - c) Incorporating architectural features which give human scale to the design of the building at street level. These can include entrance porches, awnings, pergolas and fences using recessed balconies and deep windows to create articulation and define shadows thereby adding visual depth to the façade.
- 8) Façade design is to reflect and respond to the orientation of the site using elements such as sun shading and environmental controls where appropriate.
 - 9) Important corners are to be expressed by giving visual prominence to parts of the façade (e.g. a change in building articulation, material or colour, or roof expression).
 - 10) Building services such as roof plant and parking ventilation are to be coordinated and integrated with the overall façade and building design, and screened from view. Roof forms, building services and screening elements are to occur within the overall height controls.
 - 11) Ventilation louvers and car park entry doors are to be coordinated with the overall façade design.

12.7.7 Active Street Frontages

Active street frontages promote an interesting and safe pedestrian environment. Due to the size of the area, it is recognised that not all streets will develop as active pedestrian areas. Active frontages are to be identified where active ground level uses are to be consolidated, creating vibrant streetscapes in areas with high pedestrian traffic and possible located close to public transport and public open space.

Active uses include:

- a) Shop fronts;
- b) Retail and service facilities with a street entrance;
- c) Café or restaurants with street entrance;
- d) Community and civic uses with a street entrance; and
- e) Recreation and leisure facilities with a street entrance.

A. Objectives

- a) To promote pedestrian activity and safety in the public domain;
- b) To create vibrant streetscapes around areas of high pedestrian traffic;
- c) To encourage activity within the Business Park outside commercial business hours;
- d) To provide a mix of uses to support an increasing employment and visitor population over time; and
- e) To enhance pedestrian safety, security and amenity within the Business Park.

B. Controls

- 1) Entries to active frontage tenancies are to be accessible and at the same level as the adjacent footpath.

- 2) Vehicular access points should not, if possible, be located at primary active frontages.
- 3) Ground level uses at active frontage zones are to be located at or close to street level.
- 4) Transparency and openings to the street are to be maximised and blank walls, fire exits and building services elements are to be minimised.
- 5) The use of the footpath zone for outdoor seating areas is encouraged adjacent to active frontages.
- 6) Building entries are to address the primary road on corner sites.
- 7) All primary building entries should have entry canopies to emphasise the entry along the street.

12.7.8 Pedestrian Permeability

The design and function of pedestrian spaces delivers amenity to the people using these spaces. The ability for pedestrians to safely and efficiently access buildings, services and navigate through shopping areas is integral to good design. The equity and amenity of this access is also very important.

Pedestrian permeability is achieved by introducing through-site links which may be in the form of building separation, landscape dedications or setbacks.

A. Objectives

- a) To ensure new development achieves appropriate pedestrian permeability;
- b) To retain and enhance established and utilised through site links as redevelopment occurs;
- c) To promote activation of through site links where possible;
- d) To promote pedestrian circulation, amenity and safety;
- e) To promote activation of the public domain by encouraging outdoor dining in appropriate locations; and
- f) To retain and develop lanes as useful and interesting pedestrian connections as well as for service access.

B. Controls

- 1) Commercial developments must provide pedestrian through-site links, the location of which will be determined on a site-by-site basis. Requirements for the location of pedestrian through-site links are to be discussed with Council prior to lodging a Development Application.
- 2) Pedestrian through-site links are to be straight, with clear views from end to end.
- 3) Pedestrian through-site links are to be publicly accessible and universally accessible for all.
- 4) Where pedestrian through-site links are adjacent to a courtyard or public space, their design is to be integrated with design of the open space and access provided between the two.
- 5) Where pedestrian through-site links are provided between buildings, a high level of transparency is to be provided between the internal ground floor space of the building and the pedestrian link.
- 6) Active ground level uses are encouraged along pedestrian through-site links.

- 7) Public access should be provided during all business trading times.
- 8) Pedestrian through-site links are to be clearly signed to identify street entries and the street to which the through-site link connects.
- 9) Where practical, pedestrian through-site links should have access to natural light.

12.7.9 Awnings

Awnings increase the useability and pedestrian amenity of public footpaths by providing shelter and enclosure at a pedestrian scale. They encourage pedestrian activity along streets and, in conjunction with active street frontages, support and enhance the vitality of the local area. Awnings provide a public presence and interface within the public domain and contribute to the identity of the development.

A. Objectives

- a) To unify the streetscape;
- b) To provide continuous shelter from sun, wind and rain for public streets where most pedestrian activity occurs; and
- c) To reinforce a consistent pedestrian scale through all business developments.

B. Controls

- 1) Continuous awnings must be provided where active street frontages have been identified within the Concept Plan.
- 2) Awnings should generally:
 - a) Be a minimum 2.8m deep where street trees are not required, otherwise minimum 2.4m deep;
 - b) Have a minimum soffit height of 3.2m and a maximum of 4m;
 - c) Be stepped for design articulation or to accommodate sloping streets, integral with the building design and not exceed 700mm;
 - d) Be low profile, with slim vertical fascias or eaves (generally not to exceed 300mm height);
 - e) Be set back from the kerb to allow for clearance of street furniture, trees etc (minimum 600mm).
- 3) Awning design must match building façades and be complementary to those of adjoining buildings.
- 4) Awnings are to wrap around corners for a minimum for 6m to the secondary street frontage.
- 5) Vertical canvas drop blinds may be used along the outer edge of awnings along north-south streets.
- 6) Lighting is to be recessed into the soffit of the awning or wall-mounted onto the building to facilitate night use and to improve public safety.

12.7.10 Landscaping and Fencing

A. Objectives

- a) To provide landscaping that is integrated into the design of the precinct and development sites;
- b) To create well designed active and passive open space and recreation areas;
- c) To provide landscapes that contribute to the amenity of streets;
- d) To recognise urban air quality and biodiversity;
- e) To encourage the use of recycled water for landscaping irrigation;
- f) To incorporate Water Sensitive Urban Design principles and contribute to the reduction of stormwater runoff;
- g) To improve the microclimate within the development; and
- h) To ensure that fencing does not detract from the overall visual amenity and character of the Business Park.

B. Controls

- 1) A minimum 30% of the developable area of the site is to be provided as Landscaped Area.
- 2) Landscaped Area is the area of the site not occupied by any buildings which is landscaped by way of gardens, lawns, shrubs or trees and is available for use and enjoyment by the occupants of the building and excludes areas used for driveways or parking areas.
- 3) Water management principles are to be incorporated as per the Water Management section of this DCP.
- 4) Verge treatments are to be designed to reflect the intended use of the street activity and function.
- 5) New streets are to have a strong landscape character.
- 6) The landscape design within setbacks should consider the scale of the building and where appropriate, select and locate plants to help reduce the overall bulk and scale of the development.
- 7) All setback and car parking areas are to be regenerated and maintained to a high standard.
- 8) Outdoor staff break areas should be provided and integrated into landscaped areas. These areas are to be provided with shade and maintain a reasonable level of amenity.
- 9) Fencing should be constructed of natural materials and finishes that integrate into the landscape character of the Business Park.
- 10) No fencing, other than of a low ornamental type may be erected within the setback area to any road.
- 11) Fencing along rear boundaries adjacent to drainage or open space areas shall be integrated with the landscaping of the development.
- 12) All chain-wire fencing is to be black or dark green in colour.
- 13) Solid, metal sheet fencing is not permitted.

12.7.11 Water and Energy Efficient Design

A. Objectives

- a) To promote sustainable development which uses energy efficiently and minimises non-renewable energy usage in the construction and use of buildings; and
- b) To ensure that development contributes positively to an overall reduction in energy consumption and greenhouse gas emissions.

B. Controls

- 1) Development must aim to improve the control of mechanical space heating and cooling by designing heating/cooling systems to target only those spaces which require heating or cooling, not the whole building.
- 2) Developments should improve the efficiency of hot water systems by:
 - a) Encouraging the use of solar powered hot water systems;
 - b) Insulating hot water systems; and
 - c) Installing water saving devices, such as flow regulators, 3 star Water Efficiency Labelling and Standards Scheme (WELS Scheme) rated shower heads, dual flush toilets and tap aerators.
- 3) Developments must aim to reduce reliance on artificial lighting and design lighting systems to target only those spaces which require lighting at any particular 'off-peak' time, not the whole building. A timing system should be incorporated to automatically control the use of lighting throughout the building.
- 4) All non-residential developments Class 5-9 must comply with the Building Code of Australia energy efficiency provisions.
- 5) An Energy Efficiency Report from a suitably qualified consultant that demonstrates a commitment to achieve no less than 4 stars under the Australian Building Greenhouse Rating Scheme or equivalent must be provided for all commercial and industrial development with a construction cost of over \$5 million.

12.7.12 Traffic, Parking and Site Access

A. Objectives

- a) To control traffic generation from the development so that it does not exceed agreed limits;
- b) To integrate adequate car parking and servicing access without compromising street character, landscape or pedestrian amenity and safety;
- c) To ensure adequate parking to serve development is provided on site;
- d) To encourage shared use of parking;
- e) To allow flexibility in parking rates to reflect shared use or best practice;
- f) To provide parking structures that do not dominate the public domain; and
- g) To control site entry points to encourage the active use of street frontages.

B. Controls

- 1) An appropriate Traffic Report should accompany development applications for major development proposals that assesses the impact of projected vehicular traffic associated with the proposal.

- 2) Where practicable, vehicle access is to be from secondary streets.
- 3) Potential pedestrian/vehicle conflict is to be minimised by:
 - a) Limiting the width and number of vehicle access points;
 - b) Ensuring clear sight lines at pedestrian and vehicle crossings;
 - c) Utilising traffic calming devices;
 - d) Separating and clearly distinguishing between pedestrian and vehicular access ways.
- 4) The appearance of car parking and service vehicle entries is to be improved by locating or screening parking, garbage collection, loading and servicing areas visually away from the street.
- 5) Structured car parking that extends above ground, where viewed by the public domain, is to be architecturally treated or where possible sleeved by development.
- 6) Basement car parking should be located directly under building footprints to maximise opportunities for deep soil areas unless the structure can be designed to support mature plants and deep root plants.
- 7) Basement parking areas must not extend forward of the building line along a street.
- 8) Ventilation grills or screening devices or car park openings must be integrated into the overall design of the façade and landscape design of the development.

Table of Contents

PART C – SOUTH WERRINGTON URBAN VILLAGE	40
12.8 SOUTH WERRINGTON URBAN VILLAGE	40
12.8.1 PRELIMINARY	40
12.8.1.1 BACKGROUND	40
12.8.1.2 LAND TO WHICH THIS SECTION APPLIES	40
12.8.1.3 AIMS AND GENERAL OBJECTIVES OF THIS SECTION	41
12.8.1.4 SUPPORTING STUDIES	42
12.8.1.5 CONCEPT PLANS	42
12.8.2 STRUCTURE PLAN	43
12.8.2.1 VISION	43
12.8.2.2 URBAN STRUCTURE	43
12.8.2.3 DESIRED FUTURE CHARACTER	45
12.8.2.4 DWELLING YIELDS	46
12.8.3 PUBLIC DOMAIN	47
12.8.3.1 RESPONDING TO THE SITE'S NATURAL FEATURES	47
12.8.3.2 TRANSPORT AND ACCESSIBILITY	52
12.8.3.3 STREETSAPES	57
12.8.3.4 PASSIVE OPEN SPACE AND ENVIRONMENTAL CONSERVATION AREAS	66
12.8.3.5 PUBLIC FACILITIES	68
12.8.4. PRIVATE DOMAIN	68
12.8.4.1 SUBDIVISION	68
12.8.4.2 SITE PLANNING	69
12.8.4.4 DWELLING DESIGN	75
12.8.4.5 VISUAL AND ACOUSTIC PRIVACY	76
12.8.4.6 FENCING	77
12.8.4.7 SITE FACILITIES	78
12.8.5 RESIDENTIAL DEVELOPMENT FORMS	78
12.8.5.1 ALL HOUSING TYPES	78
12.8.5.2 INTEGRATED HOUSING	78
12.8.5.3 APARTMENTS	79
12.8.5.4 ATTACHED DWELLINGS	80
12.8.5.5 SEMI DETACHED DWELLINGS	82
12.8.5.6 STUDIOS	83
12.8.5.7 DETACHED DWELLINGS	84
12.8.5.8 BUILT TO BOUNDARY DWELLINGS	86
12.8.6 DEVELOPMENT FOR EMPLOYMENT PURPOSES	87

Part C – South Werrington Urban Village

12.8 – South Werrington Urban Village

12.8.1 Preliminary

12.8.1.1 Background

South Werrington Urban Village (SWUV) comprises approximately 48 hectares of land that has been identified for urban development comprising residential and employment generating uses. SWUV will assist the delivery of housing and employment opportunities in Penrith and integrate with the existing Werrington community north and south of the Great Western Railway.

12.8.1.2 Land to which this section applies

This Section applies to development on land covered by the South Werrington Urban Village as shown in Figure E12.9. This section provides specific controls for the South Werrington Urban village in addition to the general controls elsewhere in this DCP. In the event of any inconsistency between this section and the rest of DCP 2014, the requirements of this section prevail.

Figure E12.9: Land to which this Chapter applies



12.8.1.3 Aims and General Objectives of this Section

The aims of this Section are to:

- a) Support the objectives of Penrith Local Environmental Plan 2010; and
- b) Facilitate the sustainable development of residential, employment and open space areas of the South Werrington Urban Village.

This Section seeks to achieve the following objectives:

A. General

- a) To facilitate and promote the principles of the Werrington Enterprise Living and Learning (WELL) Precinct.

Transport and Accessibility

- a) To integrate public transport opportunities into the planning process,
- b) To respond to the existing and future arterial road network including the Werrington Sub-Arterial,
- c) To provide a sub-arterial and collector road network that links with surrounding areas,
- d) To ensure vehicular, pedestrian and cycle ways link efficiently within and between residential areas and employment areas,
- e) To provide an inter-connective street system that links with the existing Werrington community,
- f) To ensure the proposed land uses relate to regional access routes, public transport routes, the local road network and the open space network,
- g) To provide an interconnected local road network that creates easy access, including truck access to employment areas and accommodates bus movements, and
- h) To provide a logical and interconnected pedestrian and cycleway system linking with surrounding areas.
- i) To ensure that there is adequate land set aside for the proposed east west link road within the land that is zoned for residential development.

Natural Environment

- a) To recognise the natural land form in the design of the urban areas,
- b) To conserve the biodiversity of the site by incorporating woodland areas into the open space system and protecting riparian corridors,
- c) To reduce environmental impact by locating higher density housing closer to the railway station,
- d) To design an integrated stormwater management system consistent with principles of water sensitive urban design, and
- e) To reinforce the importance of the natural landscape settings and areas with heritage conservation values, by protecting views and vistas to and from Frogmore House.

Built Environment

- a) To maximise opportunities for higher density residential development in proximity to Werrington Station,
- b) To respond to the physical, cultural and urban heritage of the area with plans and designs that respect the landform, climate and patterns of land use,

- c) To encourage a contemporary built form of well-designed buildings that consider the amenity of the occupants and neighbours, and
- d) To ensure that the proposed development and built form comply with best practices in ESD and complies with the principles in Penrith Council's Water Action Plan 2005 and Penrith City Council's Green House Gas Reduction Plan.

Social

- a) To provide diversity of housing choice, including affordable housing,
- b) To provide places for recreation that will accommodate casual activities,
- c) To encourage safety and security through passive surveillance of streets and open spaces,
- d) To build on the existing sense of community by integrating with the existing community, and
- e) To provide a range of passive open spaces that can act as meeting places for the existing and future communities.

Economic

- a) To encourage the provision of employment opportunities that are compatible with the existing or desired future adjoining residential development,
- b) To allow for the orderly and economic development of serviceable and accessible land, and
- c) To ensure that employment development is delivered in a manner timely with the adjoining residential development.

12.8.1.4 Supporting Studies

Some additional sources of relevant information for South Werrington Urban Village include:

- a) Community Facilities Study (BBC Consulting)
- b) Archaeology and Heritage Assessment (HLA-Envirosciences Pty Ltd)
- c) Employment Lands Paper (SGS Economics)
- d) Flora and Fauna Assessment (Kevin Mills and Associates)
- e) Assessment of Future Housing Needs and Population Characteristics (BBC Consulting)
- f) Report of Land Capability (Douglas Partners)
- g) Landscape Masterplan and Visual Assessment (Context Landscape Design)
- h) Traffic and Transport Assessment (Traffix)
- i) Bushfire Hazard Assessment (Holmes Fire and Safety and ABAC)
- j) Contamination (Douglas Partners)
- k) Stormwater and Servicing (Patterson Britton & Partners)

These documents are available for reference from Council.

12.8.1.5 Concept Plans

A Concept Plan setting out proposals for the development on each of the different development zones (i.e. Residential and Light Industry) is required to be lodged prior to, or

with, the first subdivision development application for each of the different development zones.

The Concept Plan must meet the objectives and controls of this section and demonstrate:

- a) The proposed urban structure and public domain elements, including Landscape Masterplan.
- b) The distribution of lot types and housing forms to suit a variety of lifestyles, household types and financial capacities for residential zones and consistent with the dwelling yield map in Figure E12.10 and Table E12.3.
- c) The dwelling proportion numbers, types and location of affordable housing lots as required by Council's *Sustainability Blueprint for Urban Release Areas*. This is not necessary for the proportion of affordable housing for the estate delivered via another means such as a monetary contribution through a Voluntary Planning Agreement.
- d) The proposed road hierarchy, sections and details.
- e) The location and design of open spaces.
- f) The location of pedestrian and cycle paths.
- g) Development Staging.
- h) Infrastructure Delivery Strategy.

12.8.2 Structure Plan

12.8.2.1 Vision

A vision for South Werrington Urban Village (SWUV) was established through the Werrington Enterprise Living and Learning Strategy 2004 which is as follows:

“Demonstrating a model for sustainable urban development, that captures its potential arising from proximity to transport linkages and tertiary educational facilities, the WELL precinct will be an internationally renowned destination of choice for business, residents and students. The synergies arising from the collective presence of these groups will energise the Precinct and represent a catalyst for the emergence of creativity and innovation demonstrated in the enterprise, living and learning activities undertaken within the Precinct. Whilst attracting and accommodating a diverse range of land use activities and people, the desirability of the place will be a function of the seamless integration of those people and activities and the cosmopolitan lifestyle choices it subsequently generates and offers.”

The urban form within this Section is derived from the WELL Precinct Strategy including the adopted WELL Concept Plan 2006 and the studies informing this strategy.

12.8.2.2 Urban Structure

The South Werrington Urban Village Structure Plan establishes the structure and form for the planning and future development of the subject lands. The emerging urban structure of SWUV is illustrated at Figure E12.10 – South Werrington Urban Village Structure Plan and characterised by the following performance measures:

Access

- a) The structure plan envisages the construction of the proposed Werrington Arterial. A new major collector road is proposed to link the Werrington Arterial to future employment development to the west. This new link road also provides a separation between the employment and residential land uses. The intersection of the new link road with the Werrington Arterial has been located and designed and can be constructed in stages if

required. The location of the new link road is as shown on the Structure Plan, and is located on the residential zoned land.

- b) A minor north south road is proposed linking Werrington Station with the Great Western Highway and forming an edge between the employment precinct and the land that forms part of the Wollemi School.
- c) The arterial and collector road system are proposed to be designed to accommodate buses and articulated vehicles.
- d) Local streets are proposed to be generally inter-connective and link with existing streets in South Werrington.
- e) A cycle system is proposed to provide movement through the area and linking with surrounding areas including the recreational areas to the east and St Marys. The system links with the proposed cycleway along the western side of the Werrington Arterial with the potential to extend northwards.

Land Use

- a) Employment land is proposed south of the proposed east west collector road and extending to the Great Western Highway. It is proposed that this land would be used for a range of service and light industrial purposes.
- b) Residential development is proposed with the density and form influenced by the topography, proximity to the station and the land use zoning of the existing residential area of South Werrington. Densities are to be consistent with Figure E12.11 and Table E12.3 relating to dwelling yields.

Open Space

- a) Passive Open Space areas are located within SWUV and have been located having regard to a number of factors:
 - i) the findings of the WELL Precinct studies in relation to the location of passive and active open space;
 - ii) the present supply of passive open space in Werrington and the potential for passive parks to act as a meeting place;
 - iii) the presence of woodland communities, predominantly along the northern boundary of the site and along the riparian corridor of Claremont Creek;
- b) Active Open Space are located outside SWUV however will be provided in accordance with WELL wide open space planning principles and the adopted WELL Contributions Plan. Development within SWUV will contribute towards active open space requirements across the WELL Precinct.

Stormwater Management

- a) An integrated approach to stormwater management is proposed that considers the capacity of the existing system and water sensitive urban design that is compatible with the topography and soil types.
- b) A range of measures are proposed to manage stormwater.
- c) The design of Stormwater Management Facilities is to include a schedule of the long term maintenance and operation costs.

Figure E12.10: South Werrington Urban Village Structure Plan



12.8.2.3 Desired Future Character

There are three main character areas within SWUV and they include:

- 1) **General Residential:** General Residential allows for a range of housing types with the prominent housing type comprising detached housing on the lower sloped land leading up to Frogmore House. Streets are oriented north south to provide a layering of street trees and rear garden trees up the slope with lots sizes generous to allow glimpses to the ridge behind. The predominant character of the area shall be of low to mid rise roof form interspersed with vegetation. The height and bulk of development and vegetation will not obstruct views to or from Frogmore House.
- 2) **Multi Dwelling Housing:** Development closer to the railway station is proposed to be medium density consistent with metropolitan planning policies and Council's *Sustainability Blueprint for New Urban Areas*. Development in the form of townhouses and apartments is proposed with a strong built edge to the street and a preference for dwellings that address the streets. This type of development will transition to the general residential area.

- 3) Employment Uses:** Development south of the proposed east west collector road is proposed for small lot industrial purposes that will not conflict with the existing and intended character and amenity of the residential areas to the north. Development in this location is to present high quality architectural design features with a strong built edge to the street with incorporated landscaping which contribute to the streetscape. The height of development and vegetation will not obstruct views to or from Frogmore House.

12.8.2.4 Dwelling Yields

A. Objectives

- a) To provide a diverse range of housing forms and densities.
- b) To promote a range of dwellings types to meet the needs of diverse age groups and family types.
- c) To provide opportunities for affordable housing.
- d) To provide a range of residential densities that respond to the topography and proximity to Werrington Station.

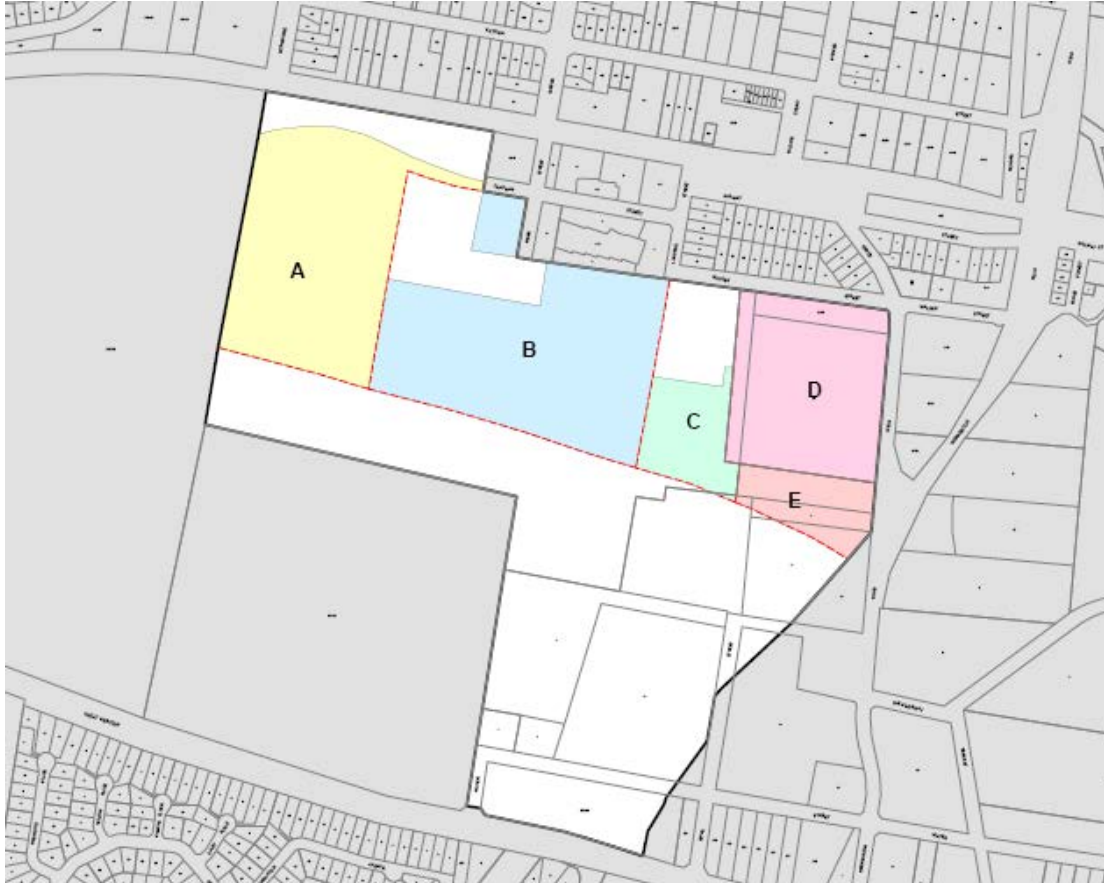
B. Development Controls

- 1) A minimum of 414 dwellings is to be delivered.
- 2) In order to ensure the minimum residential dwelling target is achieved, as part of a subdivision application, an applicant is to demonstrate to Council that the sub-precinct dwelling targets shown in Figure E12.11 and Table E12.3 will be achieved. Subject to agreement of Council and consultation with relevant landowners, dwelling yields may be 'traded' between sub-precincts as long as it meets overall targets and objectives of this DCP. The creation of a super lot or residual parcel is to specify the minimum dwelling yield which that lot is required to deliver.
- 3) Development proposals that seek densities above 414 dwellings must demonstrate that the site can accommodate the increased population with regard to issues including but not limited to potential traffic impacts, open space allocation and environmental constraints. It is recommended that applicants attend a pre-lodgement meeting with Council officers in these instances.

Table E12.3: Dwelling Yield

Sub-Precinct	Minimum dwelling yield
A	78
B	154
C	30
D	122
E	30
Totals	414

Figure E12.11 – Dwelling Yield



12.8.3 Public Domain

12.8.3.1 Responding to the Site's Natural Features

12.8.3.1.1 Riparian Corridors

A. Objectives

- a) To conserve biodiversity by providing linkages between significant natural vegetation units within the City.
- b) To protect, restore and enhance the environmental values and functions of watercourses and riparian corridors along Claremont Creek.
- c) To ensure that important natural features inform the urban structure of the place.
- d) To provide high amenity areas for residents.
- e) To ensure the water quality from the development is maintained or improved.

- f) To convey stormwater flows through the site in a safe manner.

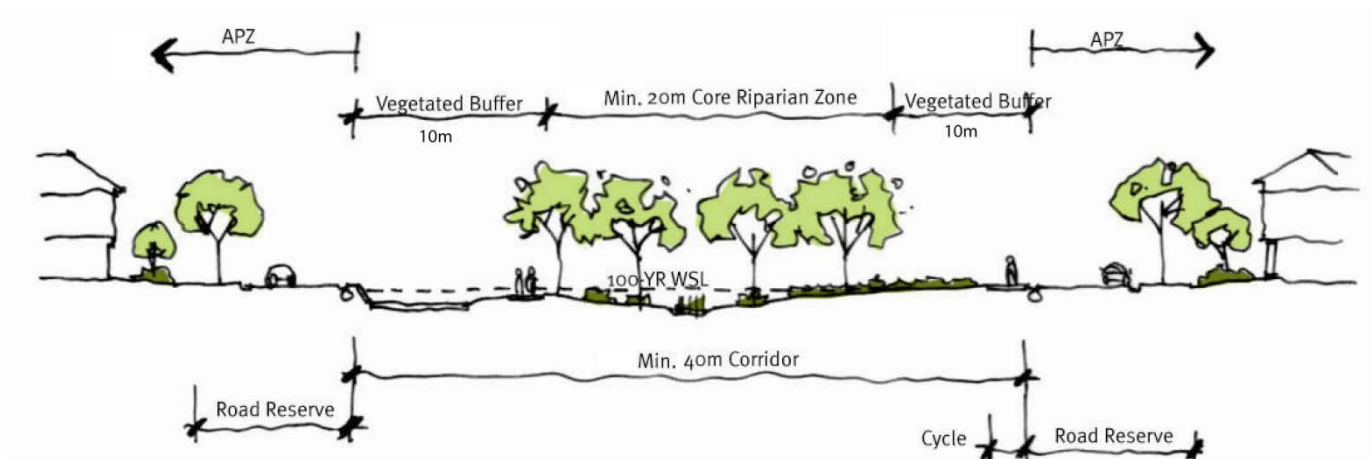
B. Performance Measures

- a) The natural drainage lines of Claremont Creek and its tributaries are conserved as healthy and naturally functioning riparian corridors.
- b) Existing healthy remnant vegetation is retained within those corridors.
- c) Significant revegetation of the riparian corridors occurs as part of development.
- d) The corridors and other topographical features are represented as special places within the urban form.
- e) A Corridor Management Plan shall be submitted and should identify how the corridor will be established is prepared developed and implemented on site as part of its development.
- f) Native vegetation within the riparian corridor is protected and rehabilitated with local provenance species at a density that would naturally occur.
- g) Water quality and water detention infrastructure should not be located within the Core Riparian Zone of the riparian corridor, and may be located in the Vegetated Buffer if:
 - i) No alternative location outside the Vegetated Buffer can be found, and
 - ii) The basin only occupies limited areas; and
 - iii) The basin can be designed in such a way that they will not reduce the function of the adjacent Core Riparian Zone.
- h) The management of the riparian corridor is to consider the long term maintenance and operation costs.

C. Controls

- 1) A minimum corridor width of 40m is to be provided along the Claremont Creek Corridor with 20m being core corridor.
- 2) The profile of the riparian corridor is to be generally consistent with that represented at Figure E12.13 – Corridor Profile Section.
- 3) Asset Protection Zones are to be located outside the Core Riparian Zone and the Vegetated Buffer and any requirements for bushfire Asset Protection Zones (APZ) are not to compromise in any way the extent, form or function of the riparian corridor.
- 4) Any pathways adjacent or adjoining Riparian Corridors are to be consistent with the Department of Water and Energy “Design and Construction of Paths, Cycleways and Accessways along Watercourses and Riparian Area Guidelines (Version 3, April 2007)”

Figure E12.13: Corridor Profile Section



12.8.3.1.2 Water Management

A. Objectives

- a) To maintain the stability and integrity of the finished creek profile.
- b) To ensure the quality of water leaving the urban areas does not adversely impact upon the health of Claremont Creek.
- c) To provide for stormwater detention.
- d) Reduce the peak flow rate of stormwater run-off from the site for all storms up to the 100 year ARI.

B. Performance Measures

- a) Trunk drainage works are provided as an initial stage of development of the release area.
- b) Stormwater management shall incorporate various strategies and devices and should demonstrate best management practices and may include (but not limited to); pit inserts, underground pollutant traps, bio-retention swales, rain-gardens and educational programs to improve the quality of urban runoff before enters the creek channels.
- c) Stormwater Management Plans for Claremont Creek catchment that identify how the quantity and quality of urban runoff from the site will be managed are prepared and implemented on site as part of its development.
- d) A water quality plan and maintenance plan shall be submitted to Council with applications for subdivision. This plan shall cover all elements of the proposed drainage system that will ultimately be transferred to Council, and shall outline the maintenance schedule to ensure that the system operates at the required standard.
- e) Consideration should be given to evaluating the opportunities for the integration of water supply and re-use of stormwater, grey water and treated effluent.
- f) Reference is to be made to Section 12.8.3.1.5 Salinity in relation to the construction and location of stormwater management devices.
- g) The design of the stormwater infrastructure is to include a schedule of the maintenance and operation costs of the facilities lifecycle.

C. Controls

- 1) Developments must achieve Council's downstream water quality objectives and measures outlined in the Water Management section of this DCP.

12.8.3.1.3 Flood Management

A. Objectives

- a) To manage the risk to life and property assets from flooding events up to PMF.
- b) To allow the riparian corridor to function as a naturally occurring waterway.
- c) To manage flood waters within the site in a safe manner.

B. Performance Measures

- 1) Appropriate areas of land are provided outside the Core Riparian Zone for detention and storage of flood waters.
- 2) Flood waters are safely managed within the riparian corridor.
- 3) A Stormwater Management Plan for Claremont Creek that identifies how the flood waters will be managed is prepared and implemented on site as part of its development.
- 4) Refer to the Water Management section of this DCP for further details.

C. Development Controls

- 1) Stormwater detention is to be provided to reduce post development flows to pre development levels for all storm events and durations.
- 2) Overland flow paths and floodways are to be sized and designed to safely convey flood waters.

12.8.3.1.4 Vegetation

A. Objectives

- a) To protect and embellish local vegetation and habitat.
- b) To integrate significant trees within the landscape of the new urban area.

B. Performance Measures

- 1) Existing mature trees are conserved for their natural functions and aesthetic value.
- 2) Open space is co-located with existing tree copses, where practicable.
- 3) Significant trees located within developable areas are able to be conserved on site, where practicable, as part of the landscaped area of future development.
- 4) No disturbance to existing ground levels occurs within the drip line of existing significant trees.

12.8.3.1.5 Salinity

A. Objectives

- a) To ensure that saline soils, groundwater levels and salinity processes are identified, prior to finalisation of development form.
- b) To ensure that appropriate measures are taken to protect buildings, infrastructure and the natural environment from deterioration associated with salt attack.

B. Performance Measures

- a) Development applications for subdivision shall include a preliminary site investigation, which identifies areas of potential salinity.
- b) A remedial action plan is to be submitted with a development application on land where there is an identified salinity hazard.
- c) Salt and drought tolerant plant species must be used in the landscaping within the site and should be identified in any landscape plans for the site. This also includes appropriate hard landscaping materials and practice.
- d) Detailed designs for stormwater management devices is required to ensure level of excavation and the impact of excavation will have on potential salinity on the site.
- e) Further investigation of the land as well as additional work during construction will be required and may include (but not necessarily limited to):
 - i) Installation of groundwater bores well in advance of construction and monitoring/sampling/analysis before, during and after construction, to assess changes in soil water quality as a result of the proposed development. The bores would be strategically located at exit points from the site into the Claremont Creek System.
 - ii) Routine inspections and earthwork monitoring during construction
 - iii) Detailed geotechnical investigations on a stage-by-stage basis for determination of pavement thickness designs and lot classifications.

C. Controls

- 1) Public and private infrastructure is to be designed and constructed in accordance with the recommendations of the salinity investigation.

12.8.3.1.6 Contamination

A. Objectives

- a) To ensure that contaminated land is identified, prior to finalisation of development form.
- b) To ensure that a remedial action plan is prepared for any identified areas of contamination.

B. Controls

- 1) Development applications for subdivision shall include an assessment of possible contamination prepared by a suitably qualified person which covers the following:
 - a) Likelihood of contamination over the subject area, based on previous land uses.
 - b) Assessments of the nature and extent of contamination in areas identified as likely to be contaminated
- 2) Reference is to be made to the particular requirements of SEPP 55-Contaminated Land in relation to contamination and remedial action plans, if required.

12.8.3.2 Transport and Accessibility

12.8.3.2.1 Road Network

A. Objectives

- a) To provide a clear urban framework for the entire release area that informs the location of land uses.
- b) To identify a clear hierarchy for movement within the subject lands and adjacent urban areas.
- c) To provide a safe and efficient movement network for all users.
- d) To promote public and active transport options.

B. Performance Measures

- a) The street network is a modified grid that facilitates walking and cycling for access to daily activities; and also enables direct local vehicle trips within the neighbourhood and to local activity points.
- b) The suburb has a coherent urban system of compact walkable neighbourhoods which cluster to form a suburb with a high degree of street connectivity.
- c) Neighbourhood identity is reinforced by the location open space areas at focal points within convenient walking distance for residents.
- d) The vehicle, cyclists and pedestrian networks and lot density assist in reducing local vehicle trips, travel distances and speeds, maximising public transport effectiveness, and encouraging walking and cycling to daily activities.

12.8.3.2.2 Vehicular Movement

A. Objectives

- a) To create a legible road hierarchy.
- b) To provide a high degree of connectivity within the site and between the site and the adjoining areas.
- c) To minimise the negative impacts of through traffic.

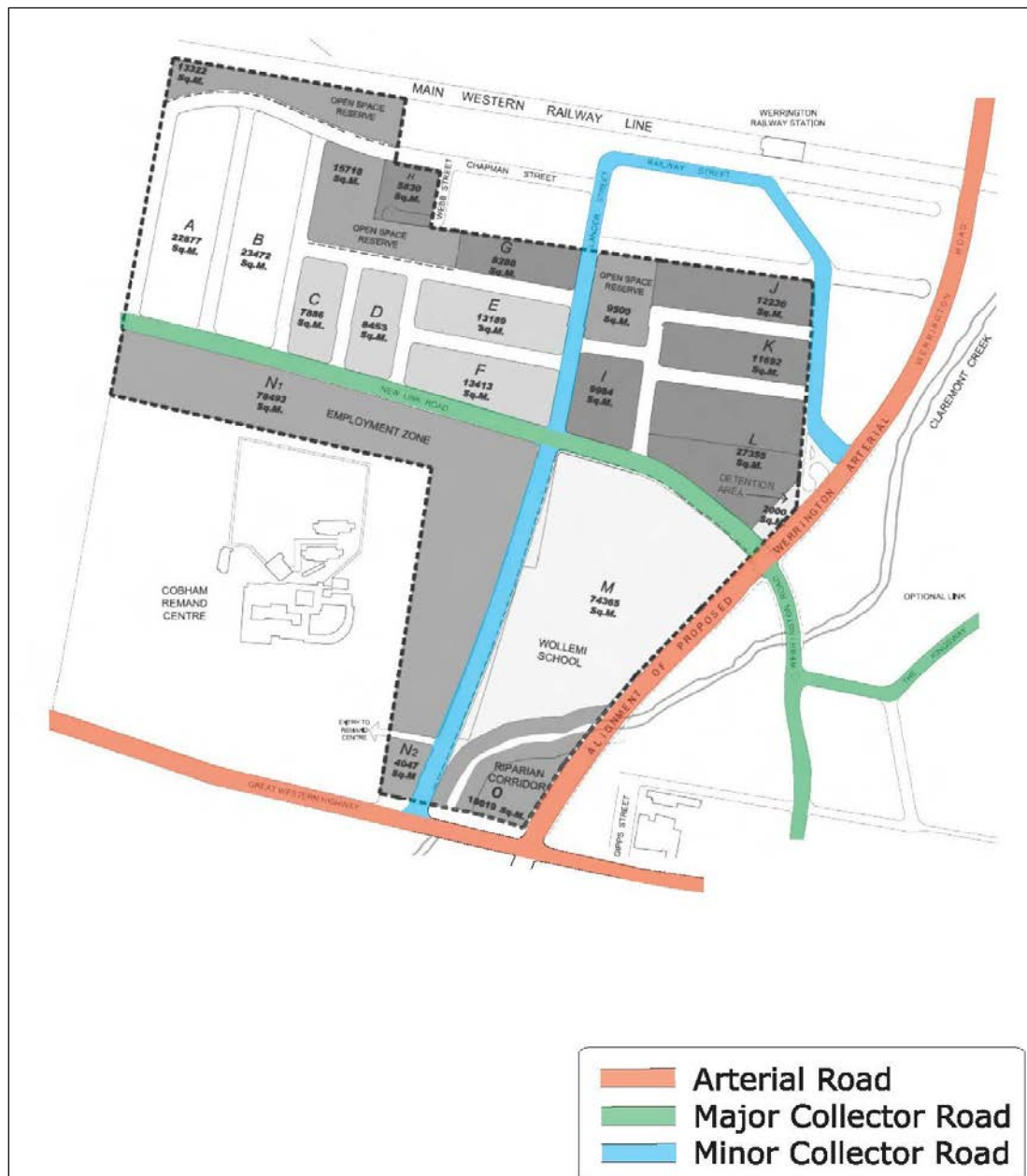
B. Performance Measures

- a) A hierarchy of streets should reflect the function and traffic load of each street in a network, minimise travel distances, maximise access to facilities and services and assist people find their way.
- b) The street network connects with adjacent collector routes and neighbouring streets to maximise movement efficiency and social connection.
- c) The street network takes account of the topography and vegetation and respects any existing or potential site assets.
- d) The street network allows all development to address the street.

C. Controls

- 1) Street blocks are to have a maximum length of 200m and maximum depth of 90m.

Figure E12.14: Road Network Hierarchy



12.8.3.2.3 Public Transport

A. Objectives

- To increase opportunities for use of public transport.
- To enable the efficient operation of bus routes on designated roads.
- To encourage the early introduction of bus services within the estate.

B. Performance Measures

- The bus route facilitates connections between the Precincts, the existing residential estates and key facilities adjoining the subject lands, local facilities and the Penrith CBD.
- Bus routes and sheltered bus stops are designed, constructed and clearly marked.
- The early delivery of bus services as the community grows.

C. Development Controls

- All dwellings within the release area are within 400m distance from a designated bus route as shown on Figure E12.15 Recommended Bus Route.
- The bus route will be designed and constructed in accordance with the road profiles identified at Section 12.8.3.2 – Road Sections.

Figure E12.15: Recommended Bus Route



12.8.3.2.4 Pedestrians and Bicycles

A. Objectives

- To promote active transport options by providing safe and convenient routes to and from key focal points within the release area.
- To promote an active and healthy lifestyle.
- To promote casual social interaction among neighbours.

- d) To promote Universal Design principles in all new facilities.

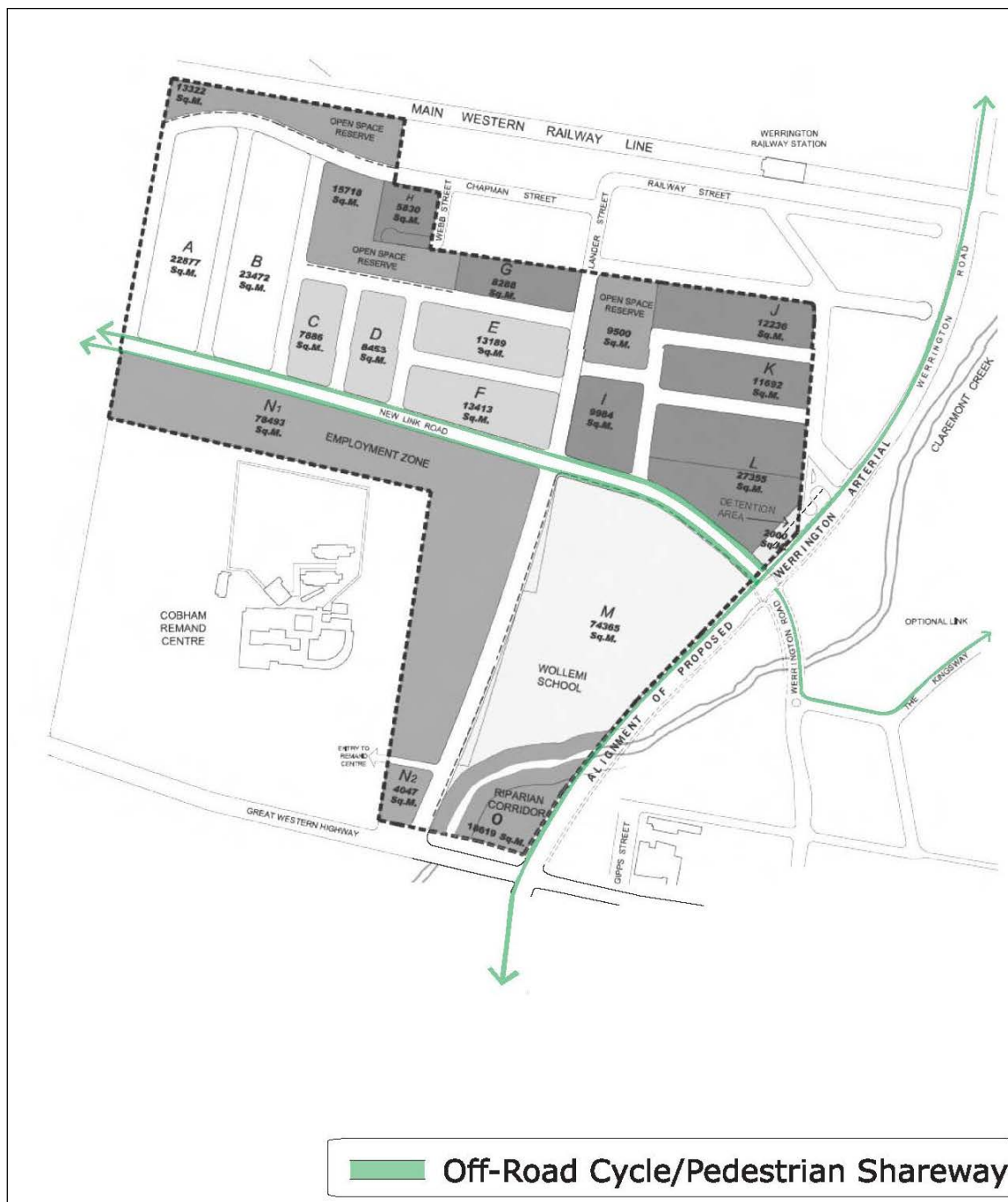
B. Performance Measures

- a) Footpaths are an integrated element of the normal street network.
- b) The cycle network is a combination of on street and dedicated pathways that link the main points of attraction and significant natural features.
- c) Separate pathway will operate within parks and open spaces areas as well as the locations identified at Figure E12.16 – Pedestrian and Cycle Network.
- d) Pathways in open spaces are aligned approximately parallel with its interface to the street to take advantage of the street lighting and allow for casual surveillance by residents and drivers.
- e) Pathways are designed and constructed wherever possible and practical to be of appropriate width, longitudinal gradient and, sight distance.
- f) Kerb details cater for all users, including aged people, people with prams and in wheelchairs, and people with disabilities, and take account of Universal Design principles.
- g) Street landscaping is provided to enhance the appearance of the street and pedestrian environment, including providing protection from the sun.
- h) A primary pathway network is designed, constructed and clearly marked in accordance with Figure E12.16 – Pedestrian and Cycle Network.

C. Development Controls

- 1) All Pathways will be a minimum of 1.5m and be provided to both sides of the road.
- 2) Pathways that form part of the open space network are to be a minimum width of 2.5m.
- 3) Where the pathway aligns with the street network, as identified at Figure E12.16 – Pedestrian and Cycle Network, the road reserve will be widened by 1.3m where it aligns with a local road or minor local road and 1.0m where it aligns with a collector road as determined by Section 12.8.3.3.2 Road Sections, to ensure a 2.5m pathway can be provided.

Figure E12.16: Pedestrian and Cycle Network



12.8.3.3 Streetscapes

12.8.3.3.1 Landscape Character

A. Objectives

- a) To provide an attractive and sustainable residential community.
- b) To ensure development contributes to cohesive streetscape and desirable pedestrian environments.
- c) To provide safe and secure environments for pedestrians and cyclists.
- d) To promote casual social interaction among neighbours.
- e) To encourage an active and healthy and active lifestyle.
- f) To ensure street layouts provide well distributed public open spaces that contribute to the legibility and character of the development.
- g) To promote landscape treatments that are appropriate to the character and constraints of each locality.
- h) To ensure that landscaping is maintained and enhanced as a major element in the streetscape.

B. Performance Measures

- a) The release area landscape includes streets lined with tall tree species.
- b) Streets are designed to establish or enhance the unique character of the precinct by responding to its topography, desirable views or local features.
- c) Street vistas are terminated with views to open spaces, parks and items of significance.
- d) The carriageway is visually contained to promote steady, predictable traffic speeds by:
 - i) Clearly defining the boundary between pedestrian and vehicle zones.
 - ii) Providing on-street parking.
 - iii) Planting street trees at regular spacing.
- e) Boundaries between street verges and private front yards are clearly defined and houses are designed to encourage passive surveillance.
- f) Landscaping helps define boundaries, create continuity and provide shade.
- g) Water sensitive urban design elements are integrated into street verges and shall be designed in such a way that they do not occupy the same zone required for street planting.
- h) On-street parking is provided at a rate appropriate to the anticipated demand while ensuring the landscape character and street function is not compromised.
- i) Design details such as footpath and driveway cross-overs are uniformly applied to make the street character more consistent.
- j) Street signage is designed to be complementary to the overall streetscape design and character and signage clutter is avoided.
- k) Existing mature trees are retained and native street tree plantings, are provided to enhance the appearance of the street and pedestrian environment, including providing protection from the sun.

C. Development Controls

- 1) Street trees are to be provided at a rate of one tree for every 10m of site frontage.
- 2) Street trees are to be provided at minimum size of 75 litres and fitted with tree guards.
- 3) Species selection is to be appropriate to the character and constraints of the locality.
- 4) Footpath verges are to be increased adjacent lots which have building setbacks less than 4.5m and where large street tree planting is proposed.

12.8.3.3.2 Road Sections

A. Objectives

- a) To provide a functional road network which allows good connections with the surrounding areas and encourages safe and convenient access into and through the site,
- b) To provide a safe and efficient movement network for all users.
- c) To encourage responsible driving behaviour, particularly safe travel speeds on residential streets.
- d) To cater for the efficient provision of public utilities.
- e) To incorporate the natural features of the site including the movement of stormwater, existing and new trees.

B. Performance Measures

- a) Streets are designed to ensure vehicle speeds can be controlled and it is clear where vehicles can be parked, cyclists can ride and where pedestrians should walk or cross.
- b) Opportunities for walking and cycling are well provided for.
- c) The materials, line marking and landscaping of the streets clearly delineate the travel lanes from the parking “lanes”.
- d) Where the provision of parking “lanes” is included in the street reserve width, they are landscaped as parking bays and defined by means of line marking and/or built tree planting bays.
- e) Parking on the grassed verge or on parks is restricted.
- f) Intersections are designed for the safe and convenient passage of vehicles, pedestrians and cyclists.
- g) The road layout and design should discourage high speeds and incorporate “traffic calming” devices as required.
- h) The road design shall make provision for the needs of cyclists.
- i) The road layout and design should allow for the safe access of commercial and articulated vehicles to the employment areas.
- j) Upright kerbs are used throughout the suburb.
- k) Development occurs in accordance with the road hierarchy demonstrated at Figure E12.14 – Road Network Hierarchy.

East West Road and North South Road

A. Performance Measures

- a) Direct vehicular access to development occurs only where topography and site distances allow safe entry and exit.
- b) Provide for dedicated cycle lane on carriageway.
- c) Provide high accessibility for all road users throughout the release area.
- d) Have a clear lane width able to handle local bus services.
- e) Are of a scale consistent with the higher order role these roads will play in the overall movement network the release area.
- f) Integrate footpaths and establish pedestrian amenity that reflect the linking role these streets will play in the urban fabric.
- g) Be designed to provide safe pedestrian crossing points and lighting in accordance with the relevant Australian Standard.
- h) Are able to comfortably accommodate the co-location of bus shelters and pathways.
- i) Include treatment of intersection of North South road with the East West road.

Local Roads

A. Performance Measures

- a) Provide accessibility between the link road and services the immediate residential lots.
- b) Roads are designed to allow a reasonable free flow of traffic and discourage high speeds.
- c) Speed controls are provided as integrated element of the streetscape and road design and provision is made for the needs of cyclists.

Minor Local Road

A. Performance Measures

- a) Provide limited vehicle access for through traffic look to access or exit the local road network
- b) Regular, minor delays or the need for driver co-operation due to vehicles parking on local roads is an acceptable, traffic calming outcomes.
- c) Maintaining high levels of permeability for non-vehicle road users
- d) Roads are designed to ensure a low speed traffic environment
- e) Informal on street parking constrains traffic movement

Laneways

A. Performance Measures

- a) Lanes are shared zones allowing vehicular traffic for access to rear loaded garages only.
- b) Are to incorporate a change in materials and/or kerb cuts to provide differentiation to other vehicular streets.
- c) Are constructed in plain concrete pavement.
- d) No parking is permitted in Lane Ways.
- e) Designed with a central invert for drainage where topography allows

- f) Studio units built above or adjacent to garages will be encouraged to provide surveillance.
- g) Laneway provide distinctive plantings at lane entry areas.

B. Controls (All road types)

- 1) Roads are to be constructed in accordance with the dimensions identified at Figure E12.17a – E12.17e as per the road hierarchy.
- 2) Any entry and exit to the employment areas must not adversely affect traffic movements on the road network.
- 3) Widening of road may be required where topographical or road curve circumstances dictate.
- 4) Any medians proposed within any road are to be in addition to the road widths detailed in Figures E12.17a – E12.17c.

Figure E12.17a: East West Link Road

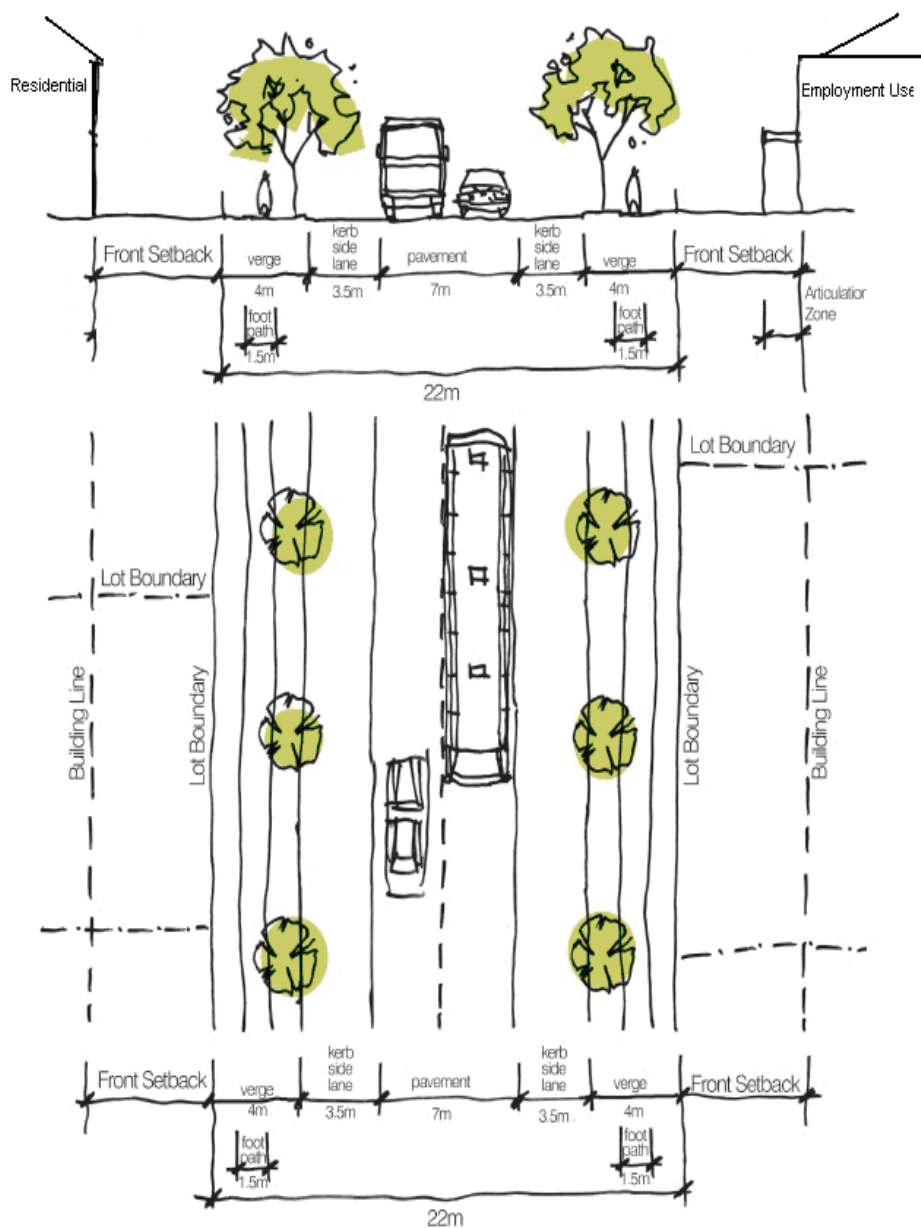


Figure E12.17b: North South Road

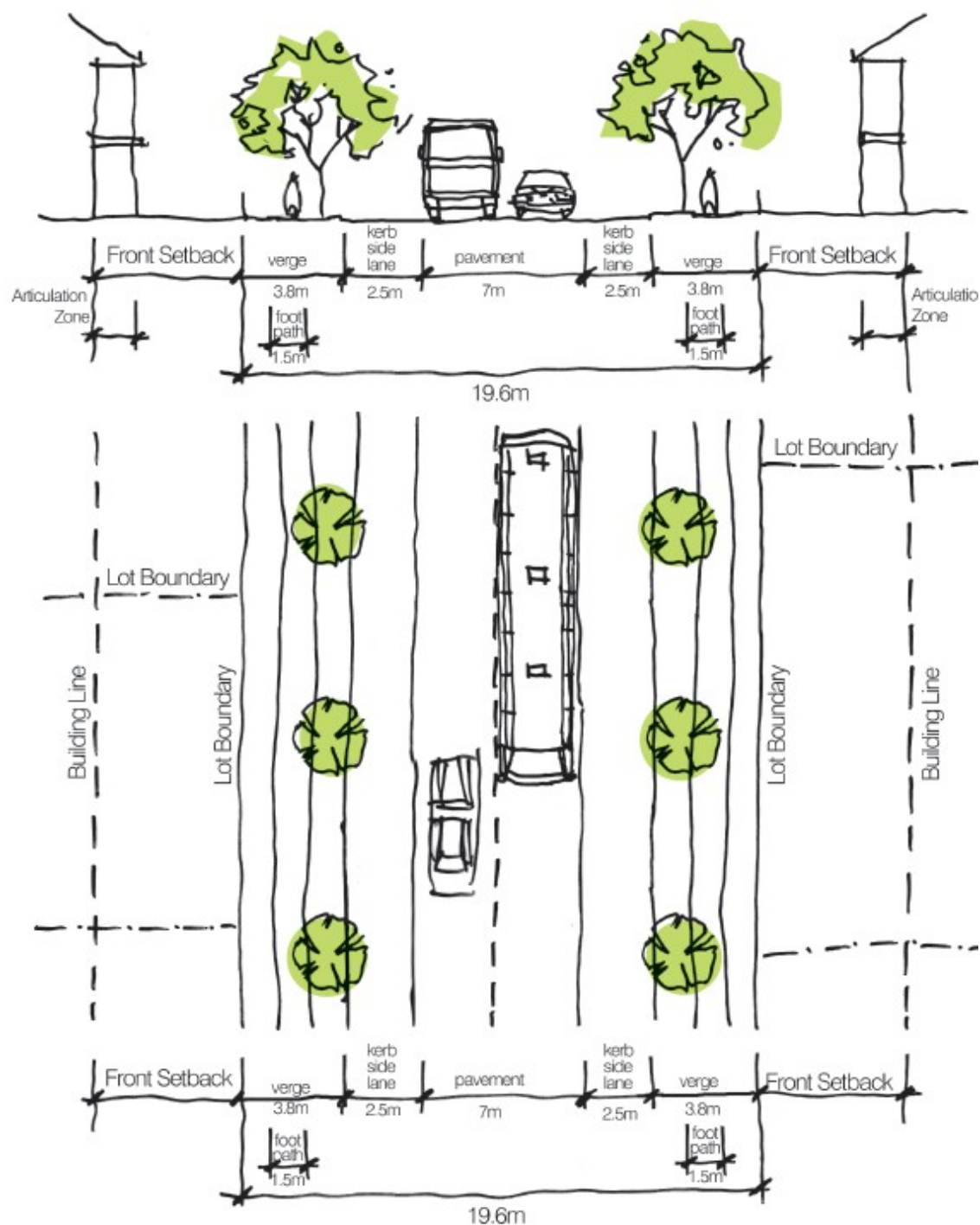


Figure E12.17c: Local Road

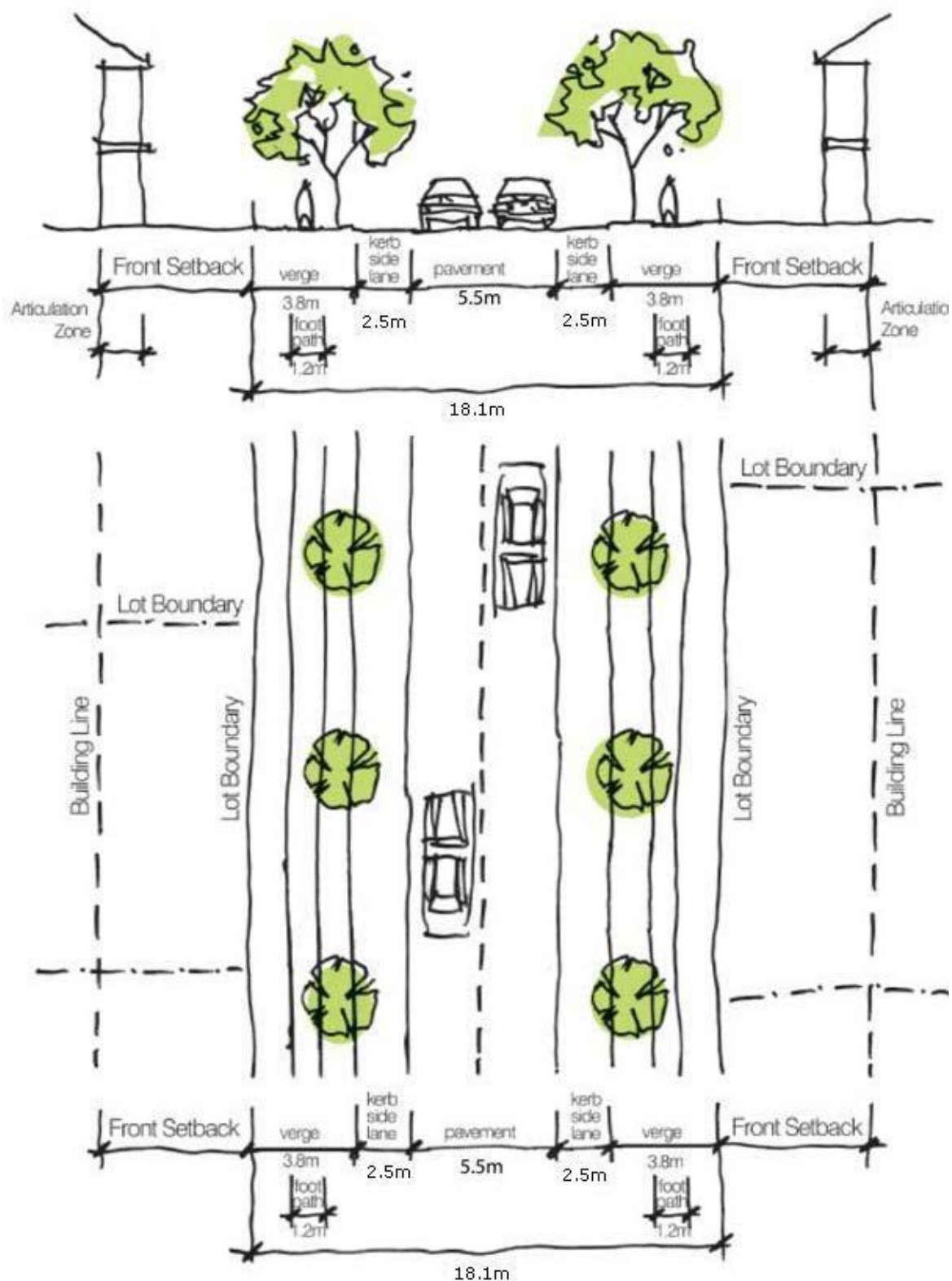


Figure E12.17d: Minor Local Road

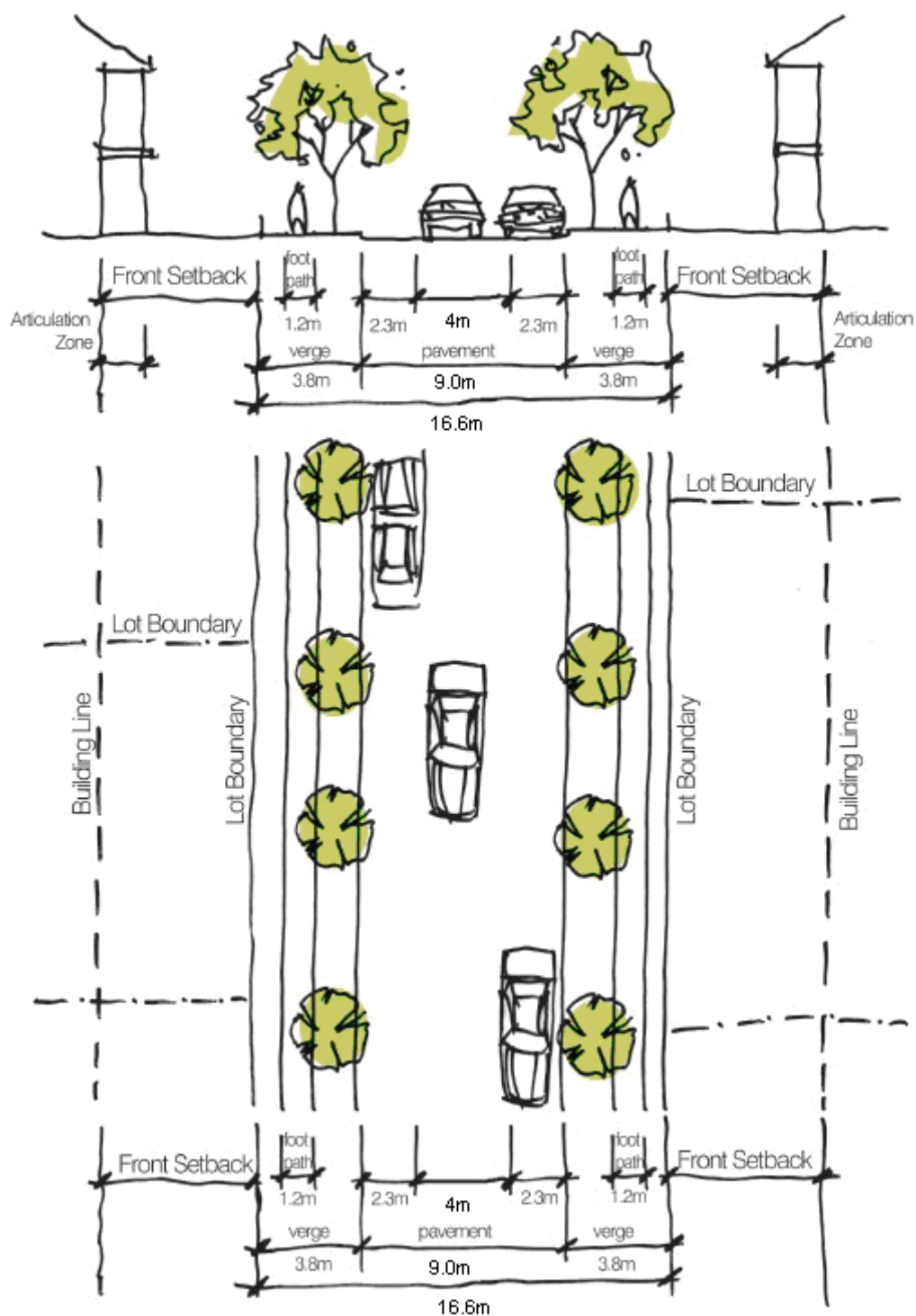
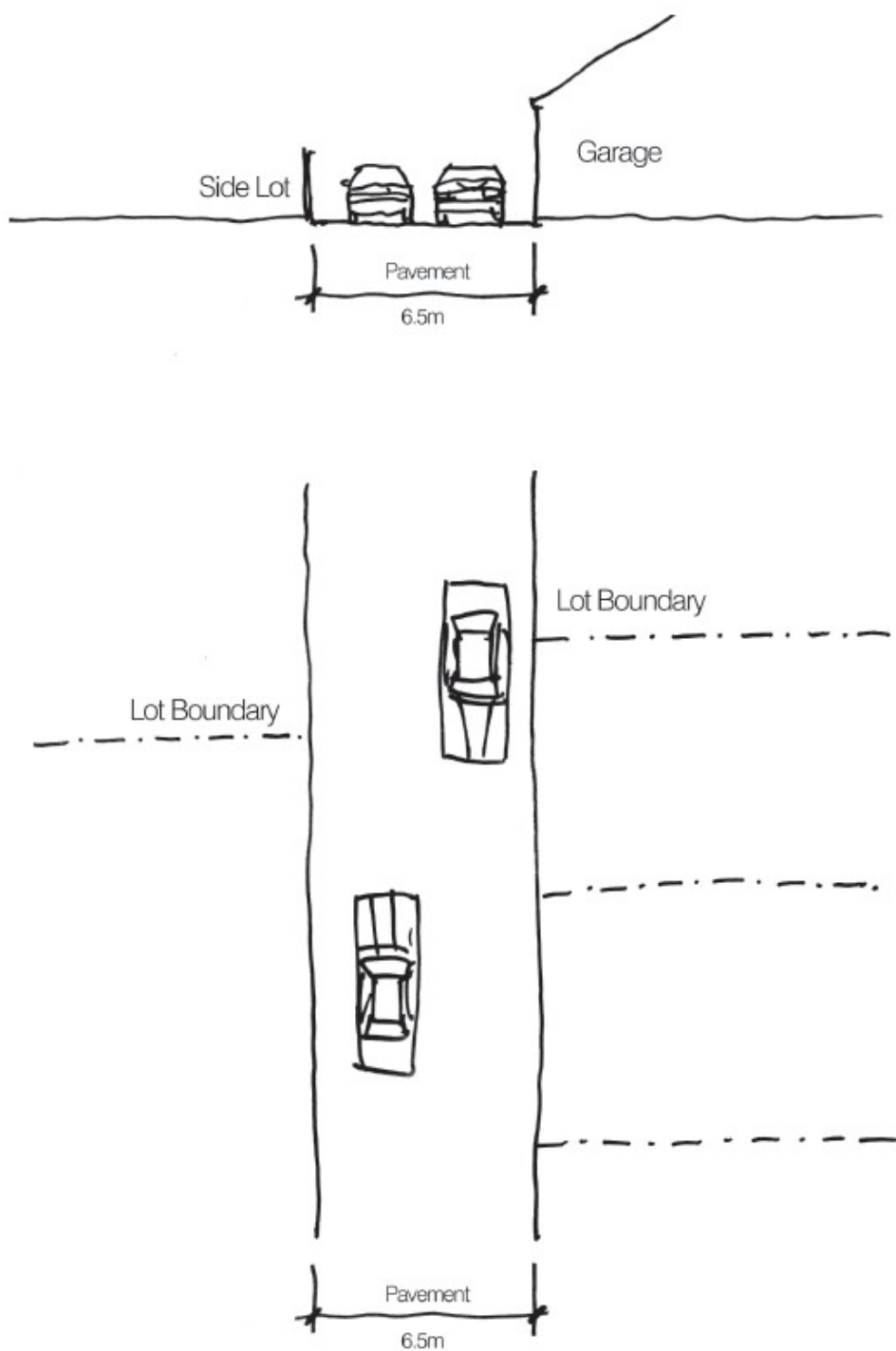


Figure E12.17e: Laneways



12.8.3.4 Passive Open Space and Environmental Conservation Areas

A. Objectives

- a) To encourage community interaction by creating desirable gathering spaces, using parks as local meeting places providing a range of passive recreation activities.
- b) To conserve and appreciate remnant woodland areas including biodiversity and native fauna habitat.
- c) To provide high amenity areas for adjacent residential development.

B. Performance Measures

- a) Existing vegetation is retained and enhanced by additional complementary plantings.
- b) Parks create a precinct focus for the surrounding neighbourhood.
- c) Parks are generally bounded by streets with buildings oriented towards the open space providing outlook and passive surveillance.
- d) There are no back fences of development facing public open space.
- e) The parks provide linkages between the broader pedestrian and bicycle networks.
- f) Playground facilities are provided within the parks.
- g) Seating and shade opportunities are provided within the parks.

C. Development Controls

- 1) The indicative location of neighbourhood parks and environmental conservation areas are indicated on the Structure Plan (Figure E12.10 – South Werrington Urban Village Structure Plan).
- 2) The design of the parks is to be in accordance with the concept landscape plans indicated in Figures E12.18a and E12.18b.
- 3) Lighting shall conform with the Australian Standards including AS1158, AS1680 and AS2890.
- 4) Development applications that include the creation of open space areas must be accompanied with a Vegetation Management Plan for those areas and shall outline procedures for such matters as (but not limited to); identifying revegetated areas, bushfire control, weed control, public access control, fencing and treatment of 'edge' zones.

Figure E12.18a: Western Local Park Concept Plan

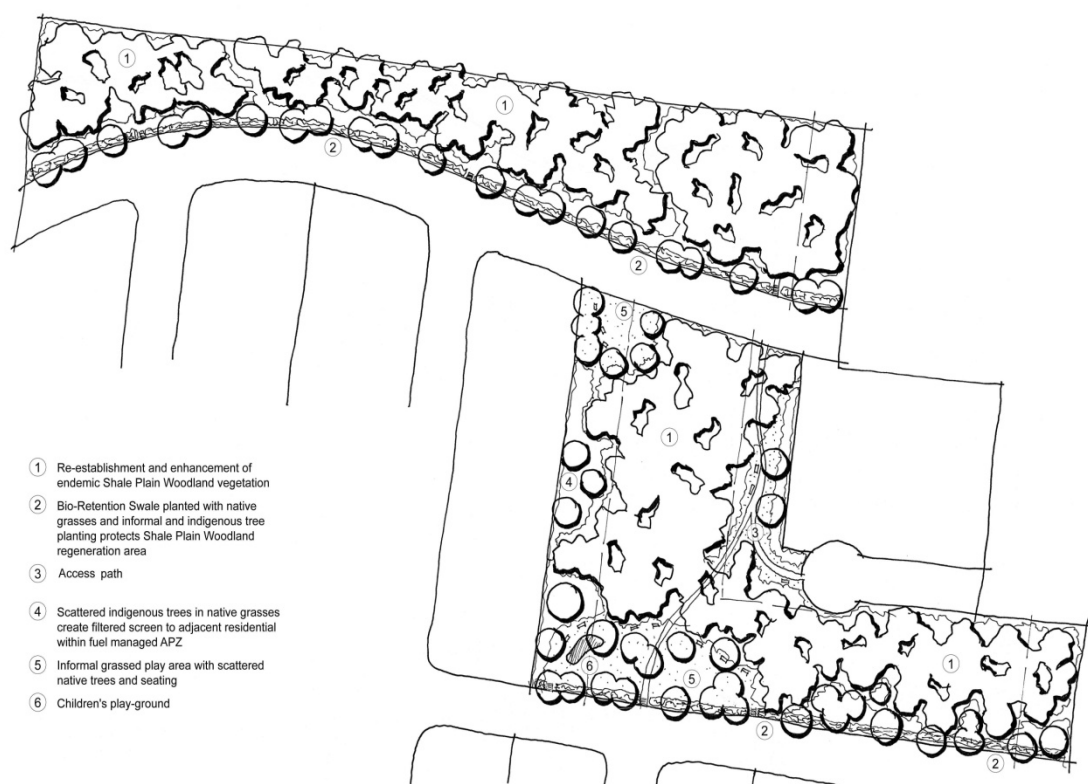
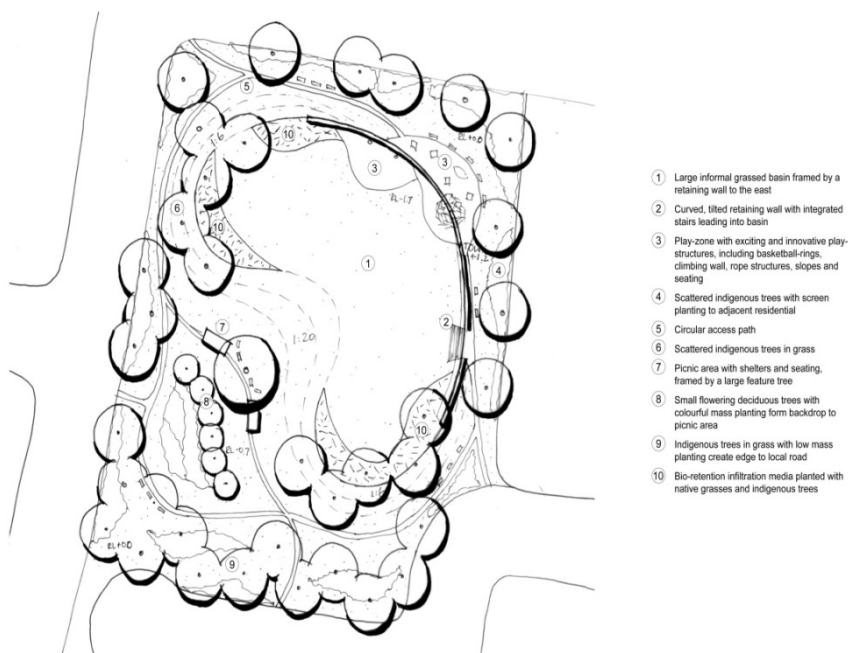


Figure E12.18b: Eastern Local Park Concept Plan and Northern Environmental Conservation Area (private land)



12.8.3.5 Public Facilities

A. Objective

- a) To ensure that facilities to be provided in the public domain can be effectively managed and maintained.

B. Controls

- a) The nature of facilities to be provided in the public domain shall include (but not limited to):
 - i) Seating
 - ii) Bins
 - iii) Lighting
 - iv) Signage
 - v) Drainage facilities
 - vi) Shade structures
 - vii) Public art
 - viii) Fencing
- b) Development applications shall include detailed designs and a management and maintenance plan for all facilities proposed for the public domain. The plan shall include suggested maintenance schedule, outlining the nature and frequency of works required. The purpose of the maintenance plan is to enable Council to properly assess the future maintenance requirements of proposed public domain infrastructure.

12.8.4. Private Domain

12.8.4.1 Subdivision

A. Objectives

- a) To provide block sizes that maximise access to solar orientation.
- b) To provide a subdivision pattern that accommodates a range of dwelling densities and lot sizes.
- c) To provide lot sizes and shape that reflects the broader urban structure.
- d) To promote the most appropriate locations for higher density housing forms.
- e) To ensure development responds to site topography and natural constraints and opportunities.
- f) To ensure lots have total areas and dimensions that allow dwellings, ancillary buildings, private outdoor open space, landscaped areas, vehicle access and parking to be located and constructed appropriately.

B. Performance Measures

- a) Lots are designed to maximise efficiency in house plans and useable external areas by having a regular shape.
- b) Lots are oriented to facilitate siting of dwellings and private open space to take advantage of winter solar access and summer sun deflection.

- c) Lots identified to accommodate higher density housing forms will be around open space areas.
- d) Larger lots frontages provided on street corners to allow development to address both street frontages.
- e) Lot sizes and dimensions take into account site topography and reduce the need for earthworks and retaining wall construction.
- f) Lot sizes and dimensions allow for retention of existing trees as part of subsequent site development.
- g) Lots front streets and overlook open spaces to provide passive surveillance of those areas.

C. Controls

- 1) Minimum lot dimensions for residential development are identified in Section 12.8.5- Residential Development Types.
- 2) Single dwelling lots are to be a minimum of 25m deep.
- 3) North-south oriented lots shall vary in depth to provide longer, narrower lots on the south side of the street and shorter, wider lots on the north side.
- 4) Lots with an east-west axis shall have a minimum width of 12m, unless they are intended for use by attached dwellings.
- 5) On north-south roads, allotments may need to be widened to provide for solar access and prevent overshadowing of dwellings and private open space.
- 6) Where land slopes are generally greater than 5%, road and allotment design should provide for dwellings to be generally parallel with the contours to minimise earthworks. Special care should also be taken in the configuration of roads and allotments to:
 - a) minimise boundary retaining walls, particularly associated with building to boundary
 - b) minimise potential overlooking
 - c) maintain solar access, where slopes face south. A greater distance between dwellings will generally be required to achieve the same solar access as on level sites or north facing slopes.
- 7) Excavations associated with a cut and fill platform for all single dwellings, single dwelling additions and Class 10 buildings are limited to a maximum of 1m.
- 8) Construction on sloping sites where the combined cut and fill will exceed 1m shall incorporate raised floor or split level type construction.
- 9) Lots are to be designed to meet dwelling yields detailed in Table E12.3 and Figure E12.11.

12.8.4.2 Site Planning

12.8.4.2.1 Principal Private Open Space

A. Objectives

- a) To provide a high level of residential amenity with opportunities for outdoor living within the property.
- b) To enhance the spatial quality, outlook, and usability of private open space.

- c) To optimise solar access to the living areas and private open spaces of the dwelling.

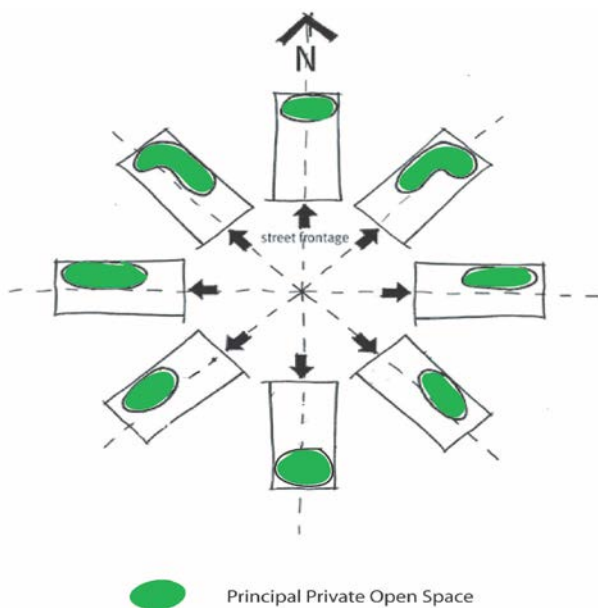
B. Performance Measures

- a) Principal private open spaces are the primary organising element of site planning and dwelling design.
- b) Private open spaces should be located at ground level in rear yard areas that maximise opportunities to obtain solar access for all dwelling types other than apartments.
- c) Development with a northern orientation provides secondary private open spaces area at the street frontages through the use of courtyards and balconies.
- d) The principal private open spaces should have a direct interface with primary internal living area of its dwelling.
- e) Development should achieve the preferred location for open space location as demonstrated at Figure E12.19 – Private Open Space Siting.

C. Development Control

- 1) Dwellings will achieve the minimum standards for Principal Private Open Space as identified at Section 12.8.5 – Residential Development Forms.

Figure E12.19: Private Open Space Siting



12.8.4.2.2 Garages and Parking

A. Objectives

- a) To provide sufficient and convenient parking for residents and visitors.
- b) To reduce the visual impact of garages, carports, and parking areas on the streetscape and improve dwelling presentation.
- c) To promote safe public domain areas.

B. Performance Measures

- a) Garages provide flexible accommodation for vehicles, storage, and covered areas for outdoor recreation.

- b) Studios are provided over garages to rear lanes to provide surveillance, work from home or residential accommodation opportunities.

C. Controls

- 1) Front garages are to be setback behind the front most element of the house and integrated as part of the dwelling façade.
- 2) Garages are to be constructed in materials and colours which blend the garage doors into the main building.
- 3) Double garages are the maximum garage size allowed for single dwelling houses.
- 4) Where a dwelling provides vehicular access to the street the garage will be setback a minimum of 5.5m from the front boundary.
- 5) Stacked parking is an acceptable outcome provided it is accommodated entirely within the property.
- 6) Vehicle crossings between the street and front boundary shall be constructed in plain concrete only.
- 7) Garages are to be provided per AS 2890.1 Off Street Parking, for full door opening including:
 - a) Minimum widths of 3.2m for single garages.
 - b) Minimum width of 5.8m for double garages.

12.8.4.2.3 Building Footprints

A. Objectives

- a) To provide a variety of streetscapes that reflects the character of different precincts.
- b) To create an attractive and cohesive streetscape within local precincts.
- c) To maximise provision of solar access to dwellings.
- d) To minimise the impacts of development on neighbouring properties in regard to view, privacy, and overshadowing.
- e) To encourage the efficient and sustainable use of land.
- f) To allow for landscaped rear yard areas.
- g) To promote public safety of public domain areas.
- h) To manage risk from bushfire events.

B. Performance Measures

Front Setbacks

- a) Front setbacks are site responsive and will be determined for individual lots as part of the Subdivision Approval process given consideration to the following matters:
 - i) Future dwelling type.
 - ii) Orientation of lots.
 - iii) Provision of front yard open space and associated fencing.
 - iv) Availability of direct vehicle access to the street.
 - v) Relevant role of street in local road hierarchy.

- vi) Proximity to open space areas.
- vii) Location within Neighbourhood Centre.
- viii) Requirements to provide Asset Protection Zone.

Rear Setbacks

- a) Landscaping provision that allows trees in the rear yard area to provide a vegetated backdrop to the development.

C. Development Controls

Front Setbacks

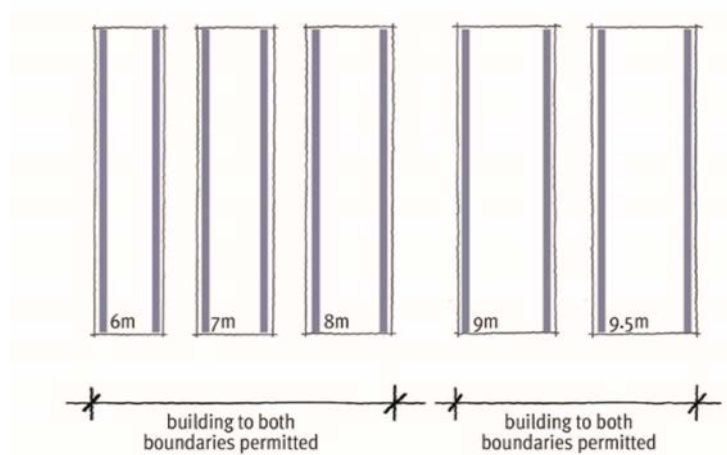
- 1) Front setbacks are identified in Section 12.8.5 – Residential Development Forms, for each dwelling type.

Side Setbacks

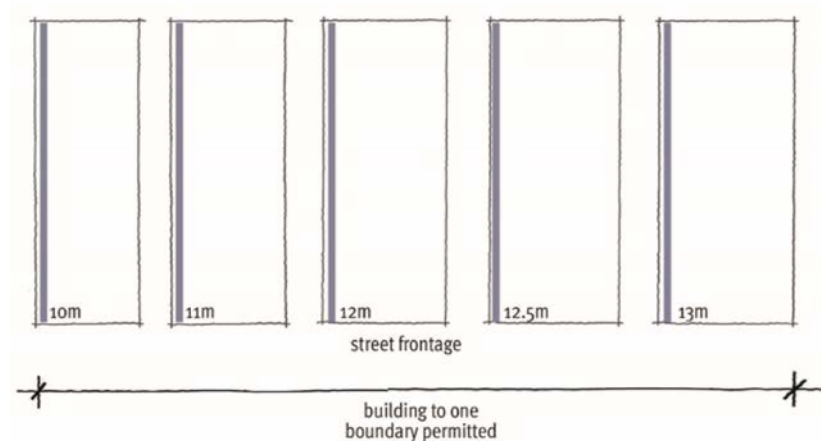
- 1) The width of the lot will determine the ability of the site to provide zero lot lines.
- 2) Where only one side of a lot can provide a zero lot line, then Figure E12.20 – Zero Lot Lines will be used to determine which of those boundaries accommodates that zero lot line.
- 3) A maintenance easement of at least 900 millimetres is to be provided on the boundary adjacent to the zero lot line.
- 4) All other side setbacks will be a minimum of 900mm.
- 5) Fascias, gutters, downpipes, eaves (up to 450 millimetres wide) and chimneys flues may encroach into the side setback.
- 6) No windows are provided in zero lot line walls.

Figure E12.20: Zero Lot Lines (all 3 figures below)

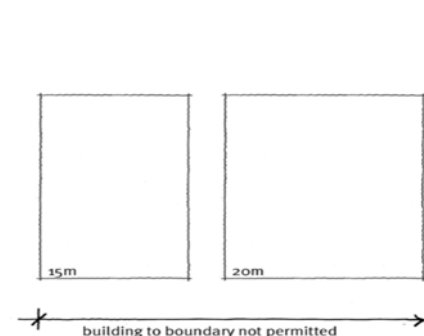
Attached dwellings



Semi Detached dwellings



Detached dwellings



12.8.4.3 Building Envelope

A. Objectives

- a) To ensure development is appropriately scaled to suit the dwellings local context.
- b) To ensure building heights achieve built form outcomes that reinforce quality urban and building design.
- c) To protect reasonable amenity expectations of neighbouring sites.

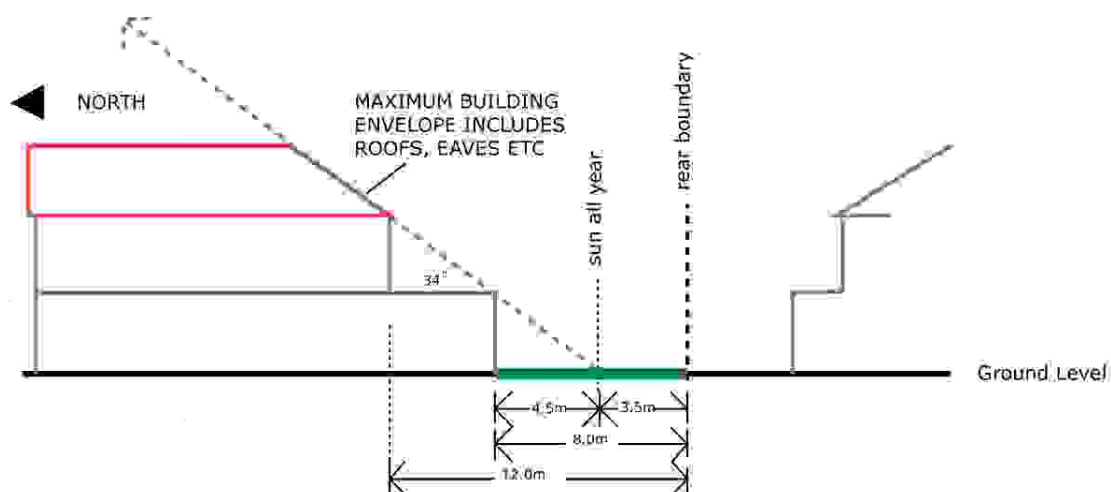
B. Performance Measures

- a) Building heights are site responsive and will be determined for individual lots as part of the Subdivision Approval process given consideration to the following matters:
 - i) Future dwelling type.
 - ii) Orientation of lots.
 - iii) Relevant role of street in local road hierarchy.
 - iv) Site topography.
 - v) Key street intersections.

C. Development Controls

- 1) Areas of Principal Private Open Space should achieve at least 3 hours of sunlight to 50% of the required private open space area between 9am and 3pm on 21 June.
- 2) Buildings should be designed to ensure that 40% of the Principal Private Open Space area of adjoining dwellings sites receives a minimum of 3 hours of sunlight between 9.00am and 3.00pm on 21 June.
- 3) Dwellings with a northern orientation that share a rear boundary with residential development will achieve the building height envelope as identified at Figure E12.21 – Building Envelope from Rear Boundaries.
- 4) Dwellings that share a rear boundary with a private driveway or rear lane is not required to achieve the building envelope.

Figure E12.21: Building Envelope from Rear Boundaries



12.8.4.4 Dwelling Design

A. Objectives

- a) To provide simple and articulated building forms.
- b) To provide a high quality and cohesive streetscape.
- c) To promote an architectural style that is contemporary and innovative.
- d) To promote a safe public domain area.
- e) To promote energy efficient and sustainable development.
- f) To reduce the dominance of garages on the streetscape.
- g) To identify appropriate design responses for corner lots.

B. Performance Measures

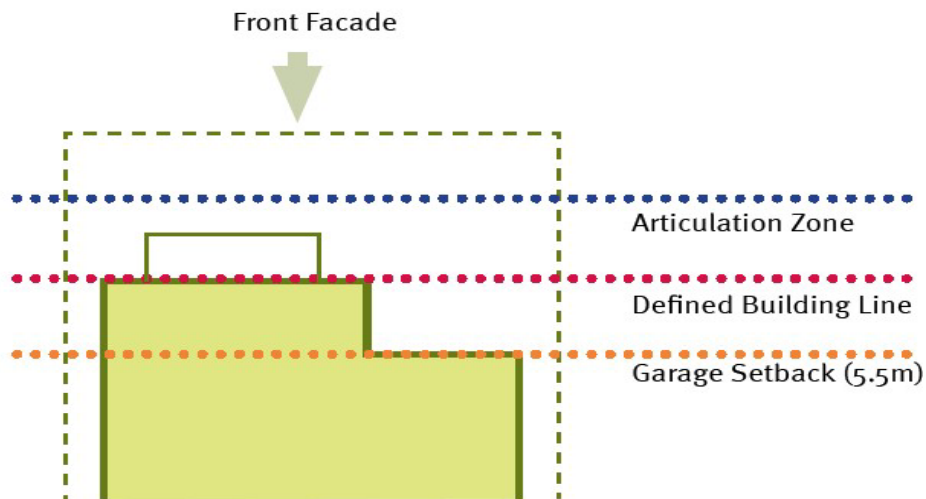
- a) All development addresses the street and is provided with a clear, legible and well lit pedestrian entry.
- b) The street elevation is well articulated by the use of awnings, verandahs, balconies and feature elements on the front facades of dwellings.
- c) Development achieves the principle of three layers of rear setbacks as illustrated at Figure E12.21 Building Envelope from Rear Boundaries.
- d) The finished ground level of development is raised above the street level to improve the outlook and enhance visual privacy from within the dwelling and front verandahs.
- e) Garages will be recessed or capped by overhanging elements that provide shading over the garage opening.
- f) Dwellings orientate living spaces to the north, sleeping areas to the east or south and utility areas to the west or south.
- g) Dwellings provide shading of north, east and west facing windows with pergolas and awnings.
- h) Buildings are to be designed to allow cross ventilation by positioning windows and doors opposite each other within rooms.
- i) Material and external finishes of buildings in bushfire hazard areas comprise appropriate construction standards for those areas.
- j) Built forms on corners provide important place making and way finding elements in the streetscape.
- k) Corner sites provide a frontage to both streets and articulate their corner location with an architectural feature such as, but not limited to a wraparound verandah, bay window, corner entry or roof feature.
- l) Dwellings provide adaptable house floor plans for the inclusion of a home office/business activity area.

C. Development Controls

- 1) Building elements (Verandahs, awnings, etc.) may project forward of the front building setback line by a maximum of 1.5m, as demonstrated in Figure E12.22 – Setbacks and Articulation.

- 2) Building elements projecting forward of the front building setback are limited to a maximum of 60% of the dwelling width.
- 3) Eaves are required over all walls except those on zero lot lines.
- 4) External building materials/finishes are to be varied across front elevations of buildings.
- 5) Retaining walls are to be constructed with appropriate masonry materials.

Figure E12.22: Setbacks and Articulation



12.8.4.5 Visual and Acoustic Privacy

A. Objectives

- a) Ensure buildings are designed to achieve the highest possible levels of visual and acoustic privacy.
- b) Protect visual privacy by minimising direct overlooking of habitable rooms and private open space.
- c) Contain noise within dwellings and minimise the intrusion of noise from outdoor areas.
- d) Ensure that noise generated by adjoining land use such as the proposed Werrington Arterial and Great Western Railway line are adequately addressed in the design and construction of development on the site

B. Performance Measures

- a) Windows to upper storeys are located on front or rear facades where possible.
- b) Offset second storey windows of living areas that face directly to windows, balconies or private open space of adjoining properties.
- c) First floor balconies or living room windows do not directly overlook private open space of adjoining dwellings unless suitable screening is provided.
- d) The design of attached dwellings minimises the opportunity for sound transmission through the building structure, with particular attention given to protection bedrooms and living areas.

- e) Living areas and service equipment are located away from bedrooms of neighbouring dwellings.
- f) Noise sensitive areas are located away from the noise emitting sources.

C. Development Controls

- 1) Habitable room windows with a direct sight line to habitable room windows in adjacent dwellings are to be avoided, however within 9.0m must be obscured by fencing, screens, or sufficient landscaping;
- 2) A screening device is to have a maximum of 25% permeability to be considered effective.
- 3) In attached dwellings, bedrooms of one dwelling are not to share walls with living spaces or garages of adjoining dwellings, unless it is demonstrated that the shared walls and floors meet the noise transmission and insulation requirements of the Building Code of Australia.
- 4) Residential development adjacent the proposed Werrington Arterial and the Main Western Railway will consider the relevant provisions in the Infrastructure SEPP.

12.8.4.6 Fencing

A. Objectives

- a) Creates a clear distinction between public and private domain areas.
- b) To ensure front fences contribute to the streetscape.
- c) Maintain safety in the public domain.
- d) Rear and side fencing provide privacy to open space areas.

B. Performance Measures

- a) Delineation of front property boundaries is achieved through use of landscaping, low fences or changes of site level.
- b) Front fences are open in style or “see through” construction (eg picket fence).
- c) Side property fences in front of the building line shall be treated as the front fence.
- d) Side property fences are terminated at the front building line and returned to finish against the building.

C. Development Controls

- 1) Fences to the street frontage:
 - a) are to be a maximum of 900mm in height.
 - b) may be a maximum of 1.2m in height where they define the primary open space of a dwelling.
- 2) Side property fences are to be a maximum of 1.8m high.
- 3) Fences to corner lots that accommodate single dwelling houses are to be a maximum 900mm high on both the primary street frontage and secondary street frontage to a point 10m from the dwelling frontage where it may then increase to 1.8m in height.
- 4) Solid front fences at 1.8m in height are to provide for a 1.2m landscape strip in front of the fence for its entire length.

- 5) Fences to corner lots that accommodate multi-unit housing forms are to be a maximum of 900mm on the primary street frontage and 900mm in height along the secondary street frontage in areas in front of the built form or 1.2m if they define the primary open space areas.
- 6) Front fencing shall have a minimum opening ratio of 50%.
- 7) Where solid fences are required to satisfy acoustic abatement, these fences shall not exceed 8.0m in length without some articulation or detailing to and must be softened on the street side with a landscaping strip of 1.2m minimum.
- 8) Prefabricated metal fencing is not permitted to the street frontage.

12.8.4.7 Site Facilities

A. Objectives

- a) To ensure that adequate provision is made for site facilities.
- b) To ensure that site facilities are functional and accessible to all residents and are easy to maintain.
- c) To ensure that site facilities are thoughtfully integrated into development and are unobtrusive.

B. Performance Measures

- a) Development demonstrates that the design takes into account garbage bin storage and collection without reducing the amenity of the dwelling or neighbouring lots.
- b) Garbage bin storage and mail box structures are to be integrated with the overall design of buildings and/or landscaping and are not visible from the street or rear lane way.
- c) External clothes drying areas are to be provided for all residential development.

12.8.5 Residential Development Forms

12.8.5.1 All Housing Types

A. Performance Measures

- a) Dwellings are designed to incorporate the option of 'live-work' activities (home-based businesses).
- b) To encourage quality designed dwellings that make a positive contribution to the streetscape and amenity of the neighbourhood.
- c) To provide definition of public domain by ensuring development addresses the streets and open spaces.
- d) To promote housing choice, variety and affordability.

12.8.5.2 Integrated Housing

A. Performance Measures

- a) Proposals where development includes subdivision which results in 3 or more dwellings on separate lots creating lots smaller than the minimum lot size for that type of development is to be considered as an Integrated Housing proposal.

- b) Any proposal for integrated housing shall be designed by an architect registered with The NSW Architects Registration Board.

12.8.5.3 Apartments

A. Performance Measures

- a) Provide more urban orientated development and encourage higher density development in walking distance to Werrington Station.
- b) Be compatible in scale with the future mass and character of adjacent buildings.
- c) Provide parking on site and underground where possible.

B. Controls

Lot Dimensions	
Minimum Lot Size	650m ²
Minimum Lot Frontage	25m
Private Open Space	
Ground floor private open space	
Minimum Area	20m ²
Minimum Dimension	2.5m
Upper floor private open space	
Minimum Area	10m ²
Minimum Dimension	2m
Communal open space	
Per 10 dwellings	10m ²
Building setbacks	
Front	3m
Secondary Frontage	2m
Side	<ul style="list-style-type: none"> • 1.5m without opening to a habitable room • 3m opening to a habitable room
Rear	5m
Garage to rear lane/secondary frontage	0m

Other requirements	
Built Form	Development must utilise multiple entries and circulation cores in buildings with a length greater than 15m.
Adaptable Dwellings	10% of dwellings shall be adaptable per AS1428.1-1998- Design for Access and Mobility.
Vehicle Manoeuvring	Provide turning movements per AS 2890.1-2004.

Figure E12.23: Apartment Design Principles



12.8.5.4 Attached Dwellings

A. Performance Measures

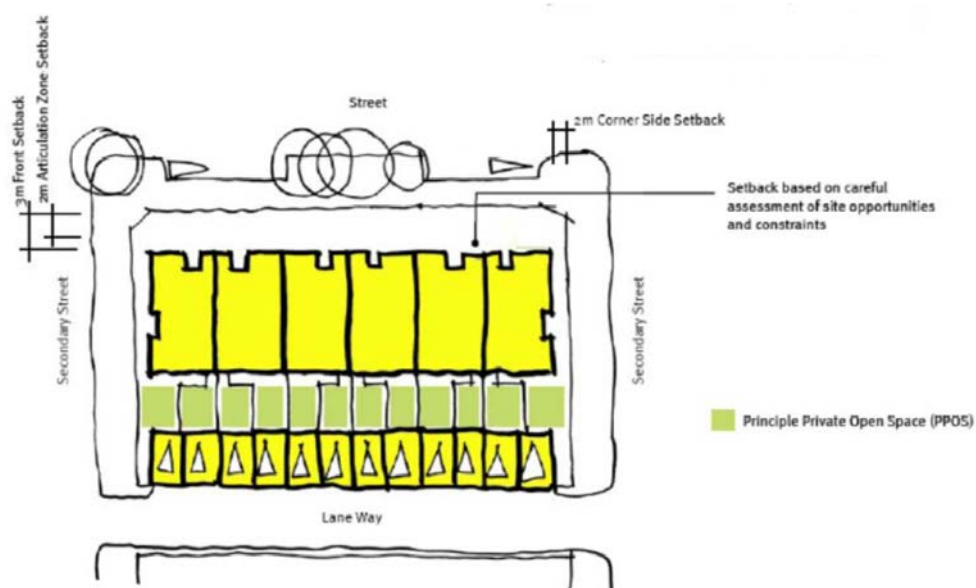
- Provide for parking with a rear loaded garage accessed from a rear lane or shared driveway.
- Integrate studio units located above a ground level garage are at ground level, located at the rear of the site in some locations.
- To encourage medium density development in close proximity to the railway station.

B. Controls

Lot Dimensions	
Minimum Lot Size	195m ² – 230m ²
Minimum Lot Frontage	6m – 9.5m
Private Open Space	
Minimum Area	20m ²
Minimum Dimension	4m
Landscaping Site Coverage**	40%
Building setbacks	
Front	3m
Secondary Frontage	2m
Side	0m
Rear	
Lots with a northern orientation	8m
All other lots:	
- Ground floor	4m
- Upper floor	6m
Garage to rear lane/secondary frontage	0m

** Any landscaped area having a dimension less than 2m shall not be included in the calculations of landscaped areas.

Figure E12.24: Attached Dwelling Design Principles



12.8.5.5 Semi Detached Dwellings

A. Performance Measures

- Have the appearance of a larger home, but comprise of 2 dwellings on separate Titles.
- When located on corner lots, semi-detached dwellings should provide distinct entries for each unit usually located on different street frontages.
- Dwellings have an adaptable design which can incorporate options for home-based business activities.
- When located at a corner provide vehicle access is to be provided off different street frontages.

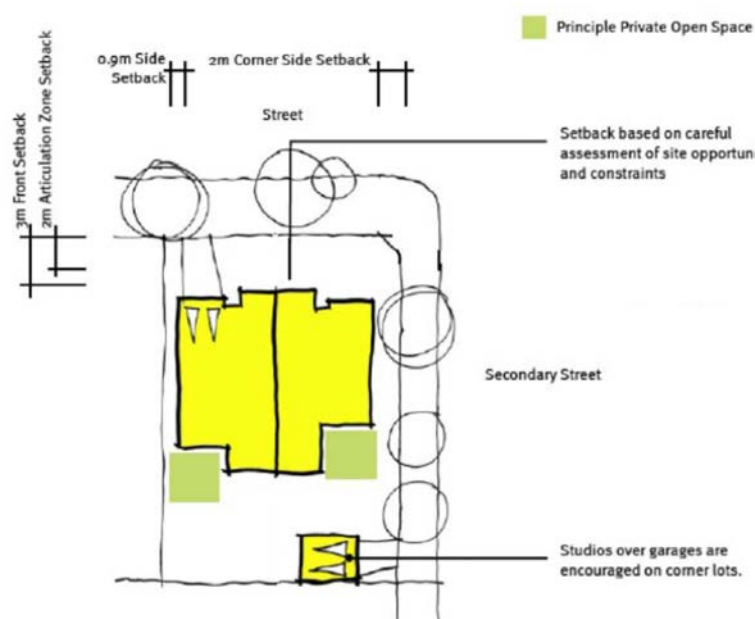
B. Controls

Lot Dimensions	
Minimum Lot Size	230m ² – 450m ²
Minimum Lot Frontage	12m – 15m
Private Open Space	
Minimum Area	30m ²
Minimum Dimension	4m
Landscaping Site Coverage**	40% of total site area

Building setbacks	
Front	3m
Secondary Frontage	2m
Side	0m (defined boundary) 0.9m
Rear	
Lots with a northern orientation	8m
All other lots:	
- Ground floor	4m
- Upper floor	6m
Garage to rear lane/secondary frontage	0m

** Any landscaped area having a dimension less than 2m shall not be included in the calculations of landscaped areas.

Figure E12.25 Semi Detached Design Principles



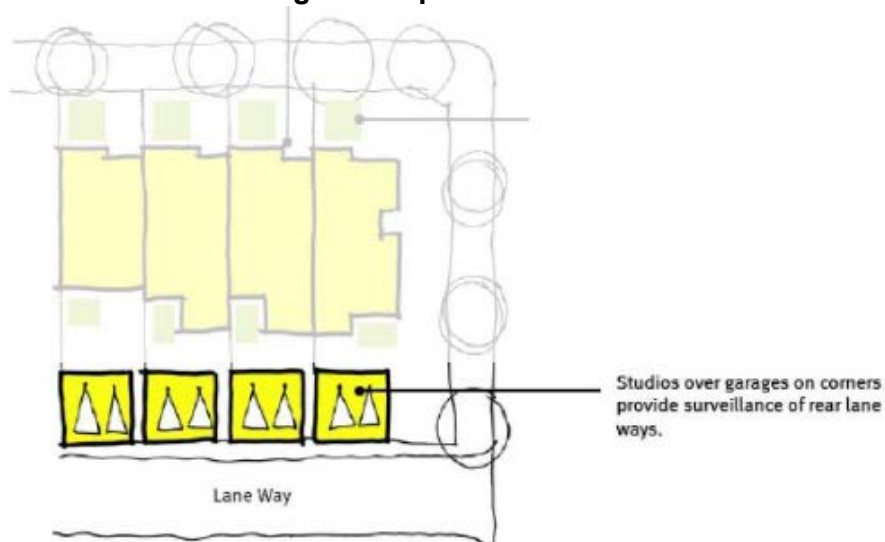
12.8.5.6 Studios

A. Performance Measures

- Be located above garages that are accessed from rear lanes or shared driveways.
- Provide their own sleeping, living, kitchen and bathroom areas.
- Provide casual surveillance over rear lanes or shared driveways.

- d) Windows and private open spaces do not overlook the private space of any adjacent dwellings.
- e) Do not overshadow the private open space of living space of any adjacent dwelling.
- f) Balconies or verandahs do not overhang vehicle access areas.

Figure E12.26 Studio Design Principles



12.8.5.7 Detached Dwellings

A. Performance Measures

- a) Allow for landscaped side setbacks to provide visual separation between dwellings and a more spacious streetscape environment.
- b) To provide for more detached dwellings in the general residential zone which transitions to the medium density zone.

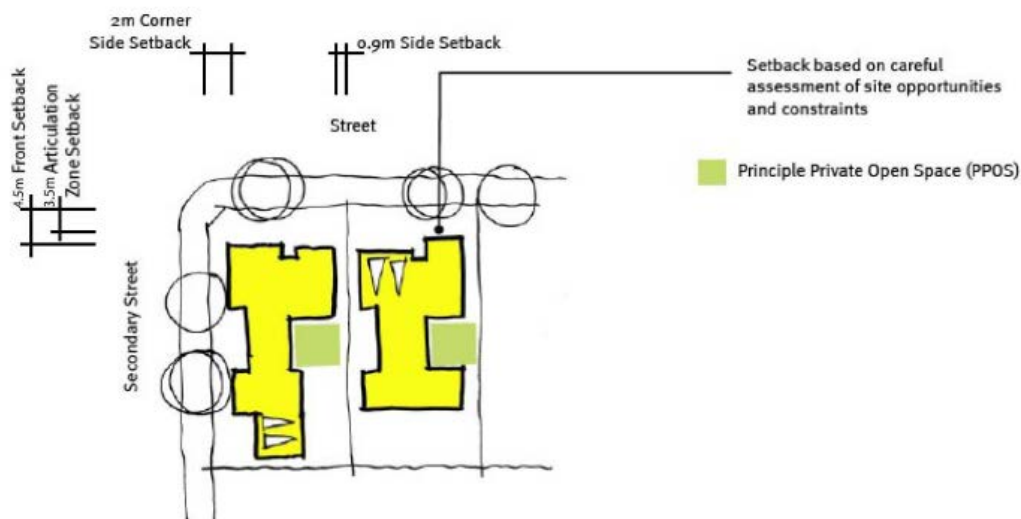
B. Controls

Lot Dimensions	
Minimum Lot Size	450m ²
Minimum Lot Frontage	15m – 18m
Private Open Space	
Minimum Area	50m ²
Minimum Dimension	4m
Landscaping Site Coverage**	40% of total site area

Building setbacks	
Front	4.5m
Secondary Frontage	2m
Side	0.9m
Rear	
Lots with a northern orientation <ul style="list-style-type: none"> - Ground floor - Upper floor 	8m 12m
All other lots: <ul style="list-style-type: none"> - Ground floor - Upper floor 	4m 6m
Garage Frontage	5.5m
Garage to rear lane/secondary frontage	0m

** Any landscaped area having a dimension less than 2m shall not be included in the calculations of landscaped areas.

Figure E12.27 Detached Dwelling Design Principles



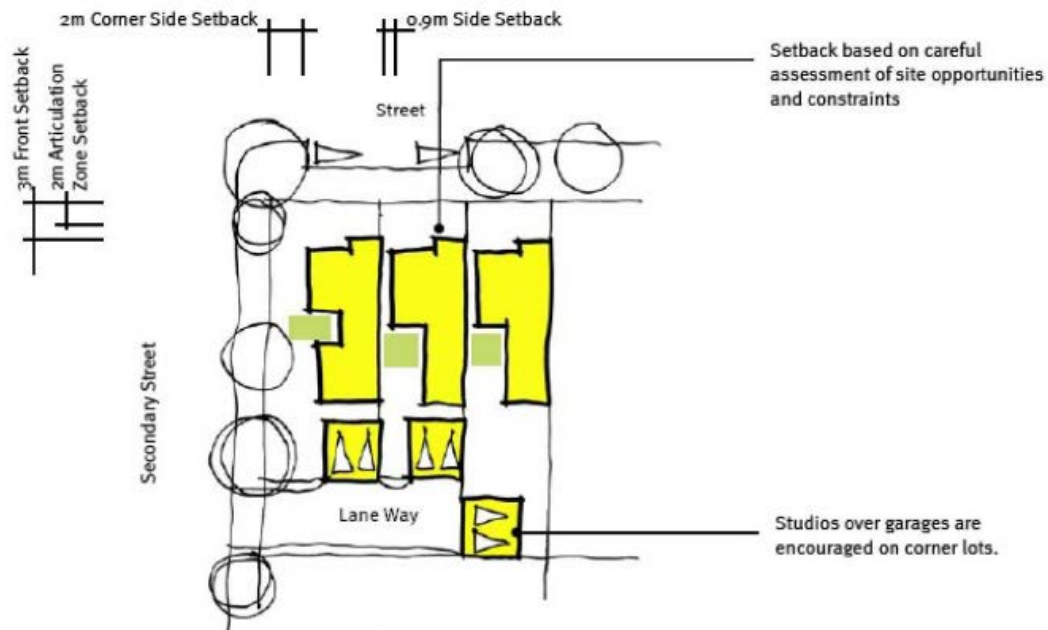
12.8.5.8 Built to Boundary Dwellings

A. Controls

Lot Dimensions	
Minimum Lot Size	230m ² – 450m ²
Minimum Lot Frontage	9.5m – 15m
Private Open Space	
Minimum Area	40m ²
Minimum Dimension	4m
Landscaping Site Coverage**	50% of total site area
Building setbacks	
Front	4.5m
Secondary Frontage	2m
Side	0m (defined boundary) 0.9m
Rear	
Lots with a northern orientation	8m
All other lots:	
- Ground floor	4m
- Upper floor	6m
Garage to rear lane/secondary frontage	0m

** Any landscaped area having a dimension less than 2m shall not be included in the calculations of landscaped areas.

Figure E12.28 Built to Boundary Design Principles



12.8.6 Development for Employment Purposes

A. Performance Measures

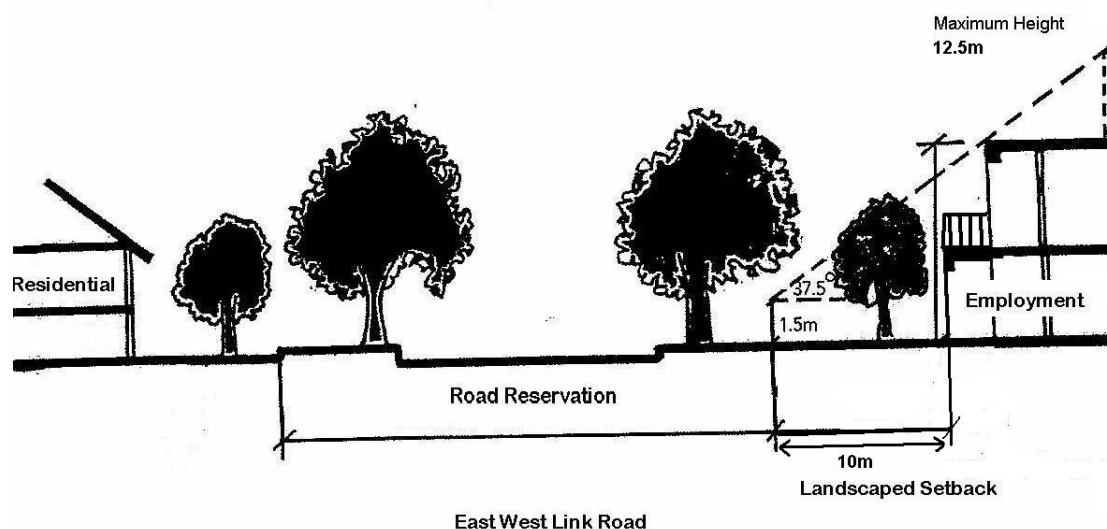
- a) Development for employment purposes should be planned and designed to be compatible with the existing and intended desired character of the locality.
- b) Development for employment purposes shall consider views and vistas to and from Frogmore House.
- c) Particular attention is paid to:
 - i) The development site including setbacks,
 - ii) Urban form including:
 - traditional building design features
 - Building design to incorporate articulation and interest to street frontages and should be of a contemporary and innovative design
 - provide landscaped frontages to the street.
 - orientation of building entrances.
 - continuously occupied rooms facing the street.
 - detailed consideration of significant townscapes or landscapes.
 - Signs.
 - iii) driveways and parking including:
 - provision of on-site parking appropriate to the proposed use, and in accordance with the Access and Parking section of this DCP, the RMS or Australian standards.

- minimise site coverage by paved areas.
 - conceal garages from views available from public parks and streets.
 - locate driveways and parking areas away from any neighbouring residential development.
 - Shared driveways between developments within the employment zones are encouraged
 - All vehicles to enter and leave in a forward direction.
- iv) building envelope and setbacks:
- to achieve a two storey appearance.
 - to provide for effective landscaped separation from adjacent developments.
- v) protect the privacy of adjacent properties.
- vi) sufficient areas are provided for storage and building services to meet requirements generated by the proposed development and located to protect the amenity of adjacent developments. These storage areas are to be suitably screened from nearby streets and the Great Western Highway.
- vii) provision is made for on-site stormwater detention and treatment.

B. Controls

Minimum Lot Size	2,000m ²
Minimum Lot	25m
Minimum Front Building Setbacks	10m
Council may consider a minor variation to the front setback but only where the proposal demonstrates a high level of architectural treatment plus an improved landscaping outcome.	
Height	Development will be carried out within the building height plane demonstrated in Figure E12.29 – Building Height Plan (Cross Section) to a maximum of 12.5m.

Figure E12.29: Building Height Plane - Cross Section of Employment development to Residential Development through proposed East West Link Road



Landscaping

- 1) A detailed landscape plan shall be submitted in accordance with the Landscape Design section of this DCP.
- 2) Landscaping within all setback areas shall be of a similar scale to the buildings on the site.
- 3) All unbuilt areas of the site not required for loading, car parking, or vehicle access should be landscaped.
- 4) 60% of any landscaped area shall provide for trees that grow to a height that exceeds the building height on the site and where possible be endemic to the area.

Drainage

- 1) On site stormwater detention systems are to be implemented to control the rate of runoff from the site to limit or reduce the rate of runoff to existing conditions or better.
- 2) A preliminary stormwater drainage plan is to be submitted with a development application for industrial uses on the site.
- 3) The onsite stormwater detention system must be designed, constructed and maintained in accordance with requirement of Councils OSD technical specifications.
- 4) Rainwater tanks are not to be located in the front setback and shall be integrated into the design of the building.

Fencing

- 1) No front fencing is permitted forward of the building line.
- 2) Security measures are to be integrated into the building design to avoid use of security fencing.
- 3) Should any fencing be required it is to be integrated into the landscaping theme to minimise visual impacts while providing associated site security. Chain wire, untreated metal, prefabricated metal and wooden fencing is not permitted.

Design

- 1) Architectural features shall be included in the design of the industrial buildings to provide for a more visually interesting industrial area that does not detrimentally affect the amenity and visual character of the locality or adjoining residential properties. Such features shall include:
 - a) Distinctive parapets or roof forms,
 - b) Visually interesting facades
 - c) Architectural emphasis on built form,
 - d) Variety of window patterns,
 - e) Variation in unit design within building group
 - f) Entrance areas to be visually prominent within the overall building form
- 2) Additional design features can also include (but not limited to):
 - a) Balcony
 - b) Canopy
 - c) Awnings
 - d) Entrances
 - e) Recesses
 - f) Consideration of external materials and finishes
- 3) Roofing is to be constructed of non-reflective pre-painted metal with mid-tone colouring.
- 4) Buildings located on corner lots need to address both street frontages and reinforce the corner by massing and façade orientation.

Access

- 1) Development fronting the proposed East West Link road shall provide access to the western side of the property to reduce the impacts of cut into the site.
- 2) No parking spaces are to be provided within the front building setback.
- 3) Onsite parking and manoeuvring areas are to be in accordance with AS 2890.1 and AS2890.2. Lots greater than 2,000m² shall cater for articulated vehicles.

PART D – WERRINGTON MIXED-USE AREA 92

12.9 WERRINGTON MIXED-USE AREA	92
12.9.1 PRELIMINARY	92
12.9.1.1 LAND TO WHICH THIS SECTION APPLIES	92
12.9.1.2 AIMS OF THIS SECTION	92
12.9.2 CONCEPT PLANS	93
12.9.2.1 REQUIREMENTS FOR A CONCEPT PLAN	93
12.9.2.2 CONCEPT PLAN STRATEGIES	93
12.9.2.3 ADOPTION OF A CONCEPT PLAN	94
12.9.2.4 FORM OF A CONCEPT PLAN	94
12.9.3 URBAN DESIGN	95
12.9.3.1 LAND USE AND ACTIVITIES	95
12.9.3.2 PATTERN OF STREETS, OPEN SPACES AND COMMUNITY FACILITIES	95
12.9.3.3 PATTERN OF STREET-BLOCKS AND SUBDIVISION	96
12.9.3.4 PATTERN OF BUILT FORM AND LANDSCAPED AREAS	96
12.9.3.5 PUBLIC DOMAIN	97
12.9.4 SUSTAINABILITY	99
12.9.4.1 SOCIAL AND ECONOMIC	99
12.9.4.2 BIODIVERSITY: FLORA AND FAUNA	100
12.9.4.3 WATER CYCLE	101
12.9.4.4 AIR QUALITY	102
12.9.5 PUBLIC TRANSPORT	103
12.9.6 SITE FEATURES	103
12.9.6.1 TOPOGRAPHY AND SOILS	103
12.9.7 INFRASTRUCTURE SERVICES	104
12.9.7.1 STREET NETWORKS	104
12.9.7.2 PRINCIPAL AND SECONDARY SITE ROADS	105
12.9.7.3 PEDESTRIAN AND CYCLE ACCESS	106
12.9.7.4 ENERGY SUPPLIES	107
12.9.7.5 COMMUNITY SERVICES AND RECREATION	108
12.9.7.6 LANDSCAPE DESIGN	108
12.9.8 RESIDENTIAL DEVELOPMENT	109
12.9.8.1 RESIDENTIAL DENSITY	109
12.9.8.2 RESIDENTIAL AMENITY	110
12.9.8.3 CRIME PREVENTION AND COMMUNITY SAFETY	110
12.9.8.4 POPULATION AND HOUSING	111
12.9.8.5 HOME-BASED BUSINESS ACTIVITIES	111
12.9.8.6 RETAIL AND BUSINESS SERVICES	112
12.9.8.7 PARKING	113

Part D – Werrington Mixed-Use Area

12.9 – Werrington Mixed-Use Area

12.9.1 Preliminary

12.9.1.1 Land to which this section applies

The Werrington Mixed-Use Area covers land bounded by:

- The Main Western Railway Line to the north;
- The Great Western Highway to the south;
- French Street and existing residential development to the west and;
- The University of Western Sydney (North Campus) to the east.

This Section does not apply to land zoned B7 Business Park.

12.9.1.2 Aims of this Section

- a) To create an urban environment that optimises residential and employment opportunities that will act as a catalyst for future development for the area, and provides a mix of residential and employment generating land uses.
- b) To optimise employment opportunities on the site presented by its proximity to the Great Western Highway and the University of Western Sydney (UWS).
- c) To optimise the potential for use of public transport by residents, employees and visitors to the site.
- d) To provide a high degree of accessibility that is safe and direct both within the site and between the site and the surrounding residential areas and educational institutions.
- e) To provide a permeable and interconnected street system, with direct access denied to and from the Great Western Highway and a network of public thoroughfares (street and car parking areas), that accommodate the needs of vehicles, bicycles and pedestrians for efficient, convenient and safe access to all areas.
- f) To promote active and vibrant street frontages with a high degree of surveillance, particularly along prominent access routes, streets and or boulevards in both residential and employment areas.
- g) To ensure buildings have a high level of environmental performance consistent with Penrith City Council requirements, particularly with regard to energy efficiency, water management and the control of noise and emissions.
- h) To retain and protect areas of high conservation value and commemorate past uses of the site.
- i) To promote development that achieves best practice in ecologically sustainable development and enhances the natural values of the site.
- j) To require the consideration of social and economic aspects of sustainable development.
- k) To provide a public domain with a high aesthetic quality and appropriate landscaping.
- l) To require the preparation for a Concept Plan for each zone on the site and provide details on the information to be included in that plan.

12.9.2 Concept Plans

12.9.2.1 Requirements for a Concept Plan

Separate Concept Plans may be prepared for each of the zones. Concept Plans can be prepared, considered and adopted independently of one another, provided each demonstrates an appropriate integration and suitable interface between the zones and activities. Each Concept Plan must also demonstrate that development of the site will satisfy the requirements of this Section.

Council must not grant consent to development on land to which this plan applies unless:

- a) a Concept Plan covering the land to be developed has been prepared; and
- b) the development is consistent with the amended DCP;

except in the case where the Council has waived the requirement for a Concept Plan or where the development is exempt from the Concept Plan requirement. Where this occurs, Council will provide the applicant with written notice of the waiver or exemption. In the case of a waiver or exemption, Council must assess development with regard to the provisions of this DCP, and development applications must meet the requirements for Concept Plans as specified in this Section.

Council may waive the requirement for a Concept Plan at its discretion, or where:

- a) the development is of a minor nature and not inconsistent with the provisions of the LEP and this Section; or
- b) development is for a purpose listed in the Penrith LEP 2010.

A Concept Plan is to address, illustrate and explain the matters that the council determines are relevant to the future residential development of the land, and must include the following:

- a) urban design principles derived from analysis of the property and the character of its surroundings;
- b) conservation of cultural heritage and compatibility with the character of established neighbourhoods in Penrith City;
- c) conservation of natural features and biodiversity;
- d) protection of natural hazards, including flooding, bushfire and ground salinity;
- e) distribution of land uses and open space;
- f) provision of access for pedestrians, cyclists, road vehicles and public transport;
- g) controls for private landscapes and built form;
- h) safety and amenity of residential areas and the public domain;
- i) provision of on-site car parking;
- j) provision of service infrastructure;
- k) provision of public facilities;
- l) landscaping and improvements to the public domain;
- m) management of stormwater drainage and minimisation of water quality impacts;
- n) contribution to energy efficiency;
- o) staging of future development; and
- p) proposed patterns of subdivision.

12.9.2.2 Concept Plan Strategies

The Concept Plan(s) must include and be based on the following strategies, prepared for the uses proposed in the relevant zone:

- 1) A transport management plan for the site, which promotes the use of public transport and pedestrian activity and recognises the site's context and surrounds. This study shall include:
 - a) an assessment of the adequacy of the current French Street/Great Western Highway intersection to deal with the traffic volumes which will result from development of the site; and
 - b) development of any necessary traffic measures for O'Connell Street and Second Avenue to address the impacts of traffic interruptions due to greater pedestrian movements in the area.
- 2) An environmental management plan for the site, which promotes the enhancement and protection of the environmental qualities of watercourses, riparian land, remnant bushland and biological corridor linkages in accordance with best practice ecologically sustainable development.
- 3) An integrated economic strategy for the site, that promotes the optimisation of employment opportunities, particularly high technology developments.
- 4) A social plan for the site, which promotes the effective delivery of community facilities, services, and recreation opportunities and provides for community safety.
- 5) An implementation strategy to ensure that the provisions and measures proposed in the Concept Plan can be achieved.

12.9.2.3 Adoption of a Concept Plan

Concept Plans are required to be adopted by Council. Council must not adopt a Concept Plan unless:

- a) The Concept Plan is consistent with the provisions and objectives of this Section and it addresses all matters outlined by this Section.

Council may consider a future application to amend an approved Concept Plan:

- a) Subject to the Penrith LEP 2010, and the provisions of this Section; and
- b) Submitted in the form of a development application or amendment to this Section.

Minor amendments only may be submitted in the form of a development application.

12.9.2.4 Form of a Concept Plan

Concept Plans are to be adopted and will be assessed against the provisions of this Section. Accordingly, it is important that the information is presented in a form that can be easily checked against and assimilated into the structure of this Section.

Concept Plans shall describe details of the design, implementation and management of future development. Those details shall be consistent with the provisions and the sections in this DCP, being:

- a) Urban Design;
- b) Sustainability;
- c) Site Features;
- d) Infrastructure Services; and
- e) The relevant zones.

This Section specifies the information to be provided in the Concept Plan and the provisions that must be complied with. A table will be required to be submitted with the Concept Plan

which lists each requirement contained in this plan and indicates where it is addressed in the Concept Plan. If any provision is considered not relevant to a Concept Plan, the table must indicate why it is not relevant and how the principles covered by the provision will be met (e.g. in a different Concept Plan, at Development Application stage etc.).

Concept Plans must include clear strategies for implementation and monitoring.

The use of tables, diagrams, and maps is encouraged to ensure information is clearly conveyed.

12.9.3 Urban Design

12.9.3.1 Land use and Activities

A. Objective

- a) To ensure that the land uses and activities proposed in each zone comply with the provisions of the relevant planning instruments, and that any negative impacts arising from these activities are minimised.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) a scaled map of the site demonstrating that the R1 General Residential zone has a minimum area of 6ha;
- 2) pictorial depiction of the division of each zone into specified activities, generally in accordance with the proposed land use layout shown in Map 1;
- 3) the nature of specified activities, with reference to likely environmental effects, including (where relevant) information on:
 - a) resident population and number of employees;
 - b) hours of operation;
 - c) likely visitation;
 - d) traffic generation; and
 - e) noise generation.
- 4) compatibility of each activity with neighbouring activities, both on this site and on neighbouring properties;
- 5) measures to achieve an appropriate interface between adjacent precincts and land uses, both on this site and on neighbouring land, including boundaries, buffers and gateways;
- 6) visibility and accessibility of business / retail floor-space; and
- 7) important heritage values identified by any relevant heritage studies.

12.9.3.2 Pattern of Streets, Open Spaces and Community Facilities

A. Objective

- a) To ensure that the design of public areas, including streets, open space and community facilities, considers the needs of future residents and visitors in terms of accessibility, pedestrian movement, public transport use, safety and amenity.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) details of access networks for vehicles, pedestrians and cyclists which are appropriate and effective, and cater for likely pedestrian routes around and through the site, including between the station and the UWS and TAFE campuses;
- 2) provision of a hierarchical structure of open spaces and meeting places;
- 3) provision of a 'central park' which provides meaningful passive and active recreation opportunities;
- 4) walking distances to key destinations, including UWS and TAFE;
- 5) bus routes, bus and taxi set-downs;
- 6) road-safety elements requiring detailed design treatment;
- 7) vistas to key landmarks or features within the future development and beyond;
- 8) interpretation and / or commemoration of particular items of historic or heritage significance;
- 9) location of open spaces and community facilities, and the basis for this;
- 10) any options presented by the site for innovative approaches to the implementation, ownership and management of required "public" infrastructure; and
- 11) a draft management plan prepared in accordance with the Local Government Act for all open space which is proposed to be dedicated to Council.

12.9.3.3 Pattern of Street-Blocks and Subdivision

A. Objectives

- a) To ensure residential density standards can be met.
- b) To ensure design and layout of the site considers principles of ESD, safety and amenity.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Overall dimensions and net area of each street block;
- 2) The climatic orientation of each block, optimising winter solar access;
- 3) Compatibility with accepted principles of planning for safety;
- 4) The identification and reinforcement of significant vistas; and
- 5) Reinforcement of the gateways to the site, in particular at principal road intersections.

12.9.3.4 Pattern of Built Form and Landscaped Areas

A. Objectives

- a) To ensure Concept Plans provide sufficient detailed information on proposed uses of the site to allow Council, the community and other stakeholders to develop an accurate picture of the site's future.
- b) To ensure relevant aspects of urban design are considered in planning the design and layout of the site.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Indicative range of building types;
- 2) Indicative building envelopes expressed in terms of:
 - a) footprint;
 - b) height and rise in storeys;
 - c) overall frontage to the street;
 - d) orientation;
 - e) setbacks;
 - f) articulation and variation of forms;
 - g) articulation and variation of garden areas;
 - h) private open space provision;
- 3) Projections of residential population and / or employment floor space;
- 4) Car parking shall be:
 - a) provided in accordance with the Parking section of this DCP for residential development unless otherwise indicated in the Infrastructure Services part of this Section;
 - b) located appropriately for residents, employees, visitors and/or loading and unloading.
- 5) Landscaping strategy, in accordance with the proposed open space network shown in Figure 12.31 and the provisions of this plan; and
- 6) Recommendations for location, orientation and detailed design of dwellings, buildings, private and public open space that are necessary to meet the solar access provisions of this plan.

12.9.3.5 Public Domain

A. Objective

- a) To ensure that the safety, functionality, and amenity of the public domain is considered in the design and layout of the site.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Location of each activity relative to the public domain;
- 2) Location of on-site parking relative to the public domain and neighbouring occupancies;
- 3) Measures to maximise public domain safety, including accepted Crime Prevention Through Environmental Design (CPTED) principles;
- 4) Integrated design of landscapes and buildings;
- 5) Design responses to the character of surrounding development and heritage items;
- 6) Design responses to achieve an individual character for each precinct;

- 7) Planning and design principles that achieve architectural variation within each street block, particularly with regard to the shape and style of facades and the selection of materials;
- 8) Planning and design principles for landscaping of private areas and the public domain, including:
 - a) vegetation,
 - b) paving,
 - c) lighting,
 - d) signage; and
 - e) street furniture.

Figure 12.30: Map 1 – Proposed Land Use Layout

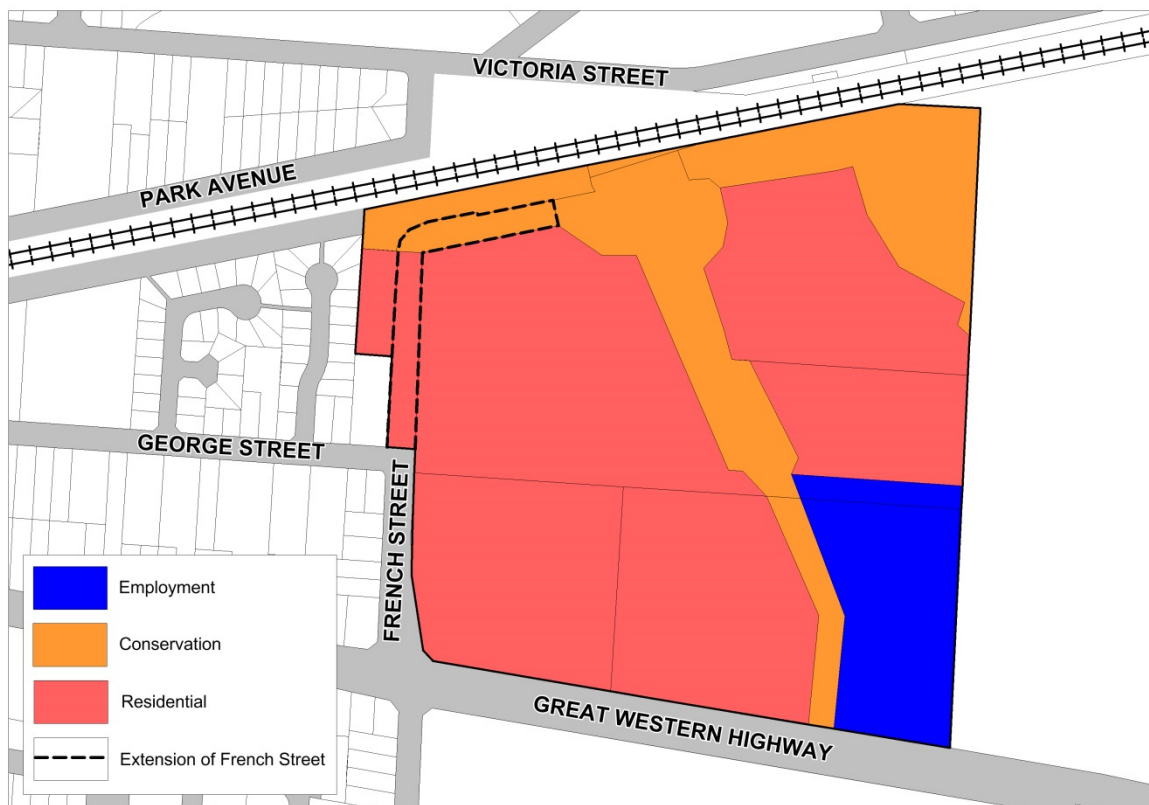


Figure 12.31: Map 2 – Proposed Open Space Layout



12.9.4 Sustainability

Sustainability generally refers to the protection of ecosystems and biodiversity for the benefit of current and future generations as well as in terms of social and economic issues, so that it encapsulates all aspects of community life and wellbeing. This ‘triple bottom-line’ of environmental, social and economic considerations must be considered together if our community is to achieve true sustainability.

Given its location and nature, the Werrington Mixed-Use site presents a unique opportunity to achieve a development with a higher level of sustainability than is generally achieved in Penrith. The implementation of Environmentally Sustainable Development principles is a fundamental tenet for development within the Werrington site. The provisions of this Section of this DCP are designed to maximise this opportunity.

12.9.4.1 Social and Economic

A. Objectives

- a) To ensure that plans for development of the site consider social implications for both future occupants and surrounding residents, and
- b) To optimise the economic contribution development of the site can make, given its location and relationship with surrounding uses, particularly the University of Western Sydney.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Demonstrate that the social needs of future occupants of the site have been considered in the context of the overall development, with particular reference to the social plan required by Concept Plan Strategies of this Part.

- 2) The initiatives developed in the economic plan required under Concept Plan Strategies of this Part are to be incorporated into the overall development plan for the site.

12.9.4.2 Biodiversity: Flora and Fauna

Indigenous vegetation and habitat on the site has been substantially modified by past use. Despite this, remnant native vegetation on the site provides biodiversity and habitat value and should be preserved, including vegetation which has been identified as Cumberland Plain Woodland.

Cumberland Plain Woodland is an endangered ecological community and occurs within the subject lands. The Cumberland Plain Woodland should be viewed as an ecological constraint to development of the site and must be retained and protected. There are additional small pockets of woodland in the south-western part of the site. When designing the layout of the employment area, consideration should be given to preserving these stands and protecting their long-term viability.

A. Objectives

- a) To conserve wildlife habitat and indigenous plant species;
- b) To ensure that development adjacent to areas of existing vegetation identified for preservation is designed to minimise impact; and
- c) To retain indigenous vegetation and wildlife habitat and ensure appropriate buffer zone edge treatment between any development and any adjacent Cumberland Plain Woodland.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Demonstrate what measures will be taken to enhance the biodiversity and habitat value of the site.
- 2) Identify those parts of the site that should not be disturbed and detail strategies to ensure they are protected;
- 3) Include a rehabilitation plan which details measures and strategies for protecting the long-term viability of remnant Cumberland Plain Woodland;
- 4) Identify and demonstrate appropriate edge treatments, including buffer zones, to minimise the impact of development on the Cumberland Plain Woodland present on the site;
- 5) Include a biodiversity strategy for the site which:
 - a) Preserves mature trees within public reserves;
 - b) Preserves the mature stand of trees in the footpath reserves, building setbacks and on-site car parking areas;
 - c) Expands available habitat into corridors or blocks of appropriate configuration;
 - d) Employs predominantly indigenous plant species in site landscaping themes;
- 6) Minimise the number of separate vehicular and pedestrian crossings of the riparian corridor.
- 7) Good quality, durable physical barriers shall be installed (complying with a National Parks and Wildlife Service specification) to prevent vehicular access and discourage pedestrian access into woodland areas;

- 8) Development practices for the site shall provide for the storage and reuse of excavated soils that are not affected by chemical or other contamination, to promote growth of indigenous species; and
- 9) A Management Plan for all native vegetation on the site outlining the ongoing measures needed to properly manage areas required to be conserved.

12.9.4.3 Water Cycle

The Werrington Mixed-Use site drains to South Creek. Studies by the Environment Protection Authority (EPA) and Sydney Water have demonstrated that the water quality in South Creek is significantly impacted by urban runoff. Minimising the pollution contained in urban runoff from this site will have a beneficial impact on the water quality in South Creek and ultimately the Hawkesbury River.

A. Objectives

- a) To achieve an integrated approach to water cycle management on the site;
- b) To control the quantity and quality of runoff from the site to maximise the improvements to downstream receiving waters and minimise the impact on the downstream catchment;
- c) To investigate innovative approaches to water supply to minimise water wastage and reduce the demand for potable water; and
- d) To maximise the ecological, visual and recreational benefits gained from the riparian corridor.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Demonstration that future development will not generate undesirable environmental impacts on receiving waters;
- 2) Identification and incorporation of best management practices to control runoff quantity and quality from the site;
- 3) Provision of information on existing salinity levels on site, including soil and ground water testing, and indicates measures to be taken to ensure that development does not adversely impact on those levels;
- 4) Provision of a stormwater management plan which demonstrates conformity with the EPA guidelines – Managing Urban Stormwater and Penrith City Council applicable development guidelines and the Storm Water Management Plans for South Creek; and
- 5) Incorporation of sufficient runoff detention on the site to ensure peak flow rates do not exceed existing rates for all storm events.
- 6) Adoption of an integrated approach to the management of wastewater, which is consistent with:
 - a) the objectives for a medium-density development incorporating water-sensitive urban design practices;
 - b) capacity of site soils to absorb run-off;
 - c) existing levels of soil salinity;
 - d) the scale and desired density of future development, and the associated cost-benefits of dual supply for irrigation of open spaces and gardens;
 - e) local climate and likely rates of evaporation from open ponds;

- f) potential cost-benefits associated with nutrient polishing for stormwater and treated sewage effluent.
- 7) A surface drainage design shall be prepared, which is designed:
- a) includes any runoff detention and water quality control ponds, swales and channels;
 - b) minimises land-take, consistent with the desired character of future development while still incorporating all major trees and riparian vegetation;
 - c) takes the form of a naturalistic channel with water on the surface;
 - d) limits disturbance to the ground whenever possible;
 - e) utilises landscaped, open space and passive recreational features;
 - f) ensures engineered structures are integrated with the configuration and character of the wider development and its public domain; and
 - g) incorporates ecological habitats in a riparian corridor.
- 8) Requirements for development proposals for the site to evaluate opportunities for the integration of water supply and re-use of stormwater, Greywater and treated effluent:
- a) in consultation with authorities such as Sydney Water, NSW EPA, NSW Department of Health, and Penrith City Council;
 - b) A thorough investigation of opportunities for the reuse on-site of Greywater and treated effluent and recycled stormwater, noting:
 - i) rainfall patterns and the assimilative capacity of the site's soils;
 - ii) landscaped areas available for irrigation with treated effluent;
 - iii) impacts of irrigation on existing soil salinity; and
 - iv) cost and feasibility of dual supply and storage of treated effluent for non-potable purposes.
- 9) Requirement for development proposals for the site to investigate and employ a package of measures that effectively reduces demand for potable water through re-use, including:
- a) dual potable and non-potable supplies; and / or
 - b) appropriate landscape design and selection of species; and / or
 - c) rain-water tanks; and / or
 - d) use of site stormwater; and / or
 - e) the use of AAA rated plumbing fittings and appliances, including shower heads, water tap outlets, toilet cisterns, dishwashers and washing machines. Plumbing fittings shall achieve the following standards:
 - i) shower heads – 9 litres or less per minute,
 - ii) water tap outlets – 9 litres or less per minute,
 - iii) toilet cisterns – 6/3 litre dual flush or equivalent, and
 - iv) separate hot and cold taps in basins and sinks.

12.9.4.4 Air Quality

A. Objectives

- a) To ensure that development does not have an undue adverse effect on air quality; and

- b) To identify appropriate compensatory measures that can be taken to help improve air quality in general.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Stationary pollution sources are to comply with EPA licensing standards;
- 2) Prohibition of the use of solid fuel heaters on the site;
- 3) Identification and promotion of the use of compensatory measures such as the provision of green corridors; and
- 4) Optimisation of the proportion of the site available for soft landscaping.

12.9.5 Public Transport

A. Objectives

- a) To reduce the demand for use of private motor vehicles and maximise the use of public transport through integrated planning of land uses and transportation, and
- b) To provide a dense and interconnected mixture of land uses which include residential, recreational, employment, retail and business services.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) The principles developed in the transport management plan required by Concept Plan Strategies of this Part have been incorporated into the overall development of the site; and
- 2) A safe and convenient pedestrian network formed by a closely spaced grid of streets interconnected with public open spaces.

12.9.6 Site Features

12.9.6.1 Topography and Soils

A. Objective

- a) To protect the site's landscape character, and minimise any environmental effects likely to arise from future development.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Information is to be provided on the soil characteristics of the site and surrounding areas, including salinity and erodability;
- 2) Concept Plans shall demonstrate how this information has been considered in site planning;
- 3) The development layout of the site shall minimise the need for reconfiguration of existing topography, particularly in areas surrounding any mature trees which are to be preserved and in the vicinity of identified Aboriginal sites and artefacts.

12.9.7 Infrastructure Services

12.9.7.1 Street Networks

The network and design of streets has a fundamental influence upon the form and character of development, and the environmental amenity of neighbourhoods. Streets have several roles. They provide:

- a) safe and convenient access for pedestrians and cyclists;
- b) effective distribution and circulation of vehicles;
- c) visitor parking;
- d) routes for reticulated services;
- e) boundaries and separation between dissimilar land uses;
- f) landscaped corridors which contribute to the character of neighbourhoods and overall townscape;
- g) view corridors and vistas to landmarks within the site and beyond;
- h) a public address for dwellings, commercial and employment activities;
- i) establish an appropriate solar orientation for allotments and dwellings;
- j) routing for trunk services; and
- k) overland drainage paths.

A. Objectives

Design a street network that:

- a) is appropriate to environmental design objectives;
- b) is economically efficient;
- c) generates a distinctive character; and
- d) provides high standards of amenity.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) The road network shall be designed to accommodate multiple purposes, including:
 - a) safe and efficient access for pedestrians (including alternative forms of pedestrian activity), cyclists and vehicles;
 - b) underground routing of service infrastructure;
 - c) contribution to traditional townscape character;
 - d) provision of vistas to landmarks within the site and beyond;
 - e) establishment of appropriate solar access for allotments, open spaces, buildings and dwellings; and
 - f) alternative means of emergency access, for example: during flood events.

12.9.7.2 Principal and Secondary Site Roads

The site is situated on the edge of established residential suburbs, with frontages to a main road and the University site. An initial assessment of traffic impacts supports the following configuration for this site's major roads:

- a) hierarchical network which separates residential and employment traffic;
- b) major entrance from French Street.

A. Objectives

- a) To consider multiple objectives for roads including access and circulation, the character of townscape and market appeal of future development; and
- b) To provide safe and effective access to individual properties, contribute to a distinctive neighbourhood character and provide high standards of amenity.

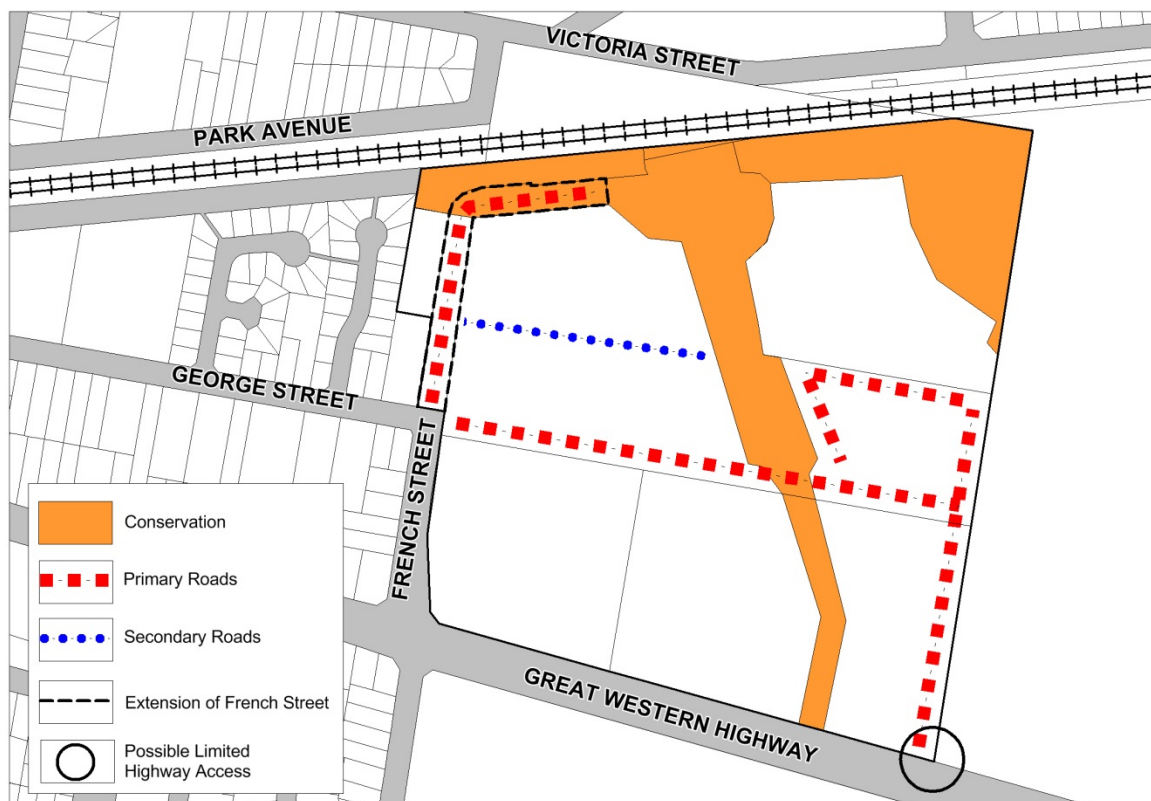
B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) The design and layout of principle and secondary site roads shall:
 - a) be in accordance with relevant Council policy and design standards and be based on forecast traffic flows;
 - b) provide efficient access and circulation for buses and taxis;
 - c) facilitate a configuration of neighbourhood streets appropriate to the desired solar orientation of dwellings;
 - d) provide safe pedestrian access, and vistas towards landmarks and central destinations within the site and beyond; and
 - e) limit the number of four-way intersections and where they occur, indicate their management.
- 2) The configuration of principal roads shall:
 - a) not adversely affect traffic flows along existing arterial and main roads;
 - b) interconnect the residential and employment areas;
 - c) provide for a tightly-spaced grid of secondary streets, designed according to principles of traditional neighbourhood design; and
 - d) provide high-exposure business addresses.
- 3) Principle roads shall be designed:
 - a) to provide adequate capacity to cater for expected traffic flows;
 - b) according to principles of traditional neighbourhood design;
 - c) to control traffic speeds, incorporating safe pedestrian crossings to central destinations;
 - d) as tree-lined thoroughfares which contribute to the overall character of townscape;
 - e) to accommodate kerbside parking for visitors in the residential area and the employment area; and
 - f) to provide access to the Mixed-use employment zone separated from the Mixed-use residential zone.
- 4) The configuration of secondary roads shall:

- a) discourage peak movements of through traffic;
 - b) discourage employment-area traffic from entering residential precincts; and
 - c) distribute local traffic efficiently and effectively without congestion at intersections.
- 5) Secondary roads shall be designed to:
- a) provide a distinctive landscaped address and character for each precinct;
 - b) to facilitate safe and effective circulation, parking and unloading for transport vehicles within employment precincts;
 - c) optimise on-street parking within residential precincts; and
 - d) incorporate designated pedestrian footpaths, dimensioned and finished to service each precinct according to its desired function and character.

Figure 12.32: Proposed Road Network



12.9.7.3 Pedestrian and Cycle Access

A. Objective

- a) To provide safe and effective pedestrian and cycle access to key destinations.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Effective and convenient pedestrian and cycle access along streets, through public parks and drainage reserves, demonstrating that the pedestrian/cycle network has been linked to:
 - a) key destinations on-site:
 - i) the future village centre;
 - ii) residential precincts and employment areas; and
 - iii) community facilities, open spaces and meeting points;
 - b) destinations surrounding the site that have regional, city or district significance, including the UWS and TAFE College.

Figure 12.33: Pedestrian, Cycle Routes and Bus Routes



12.9.7.4 Energy Supplies

A. Objective

- a) To ensure that the site is adequately supplied with energy.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Council is to be supplied with appropriate evidence demonstrating that the site can be adequately serviced.

- 2) Prior to the submission of an application for development of the site, the owner / applicant shall negotiate the planning and design of services with relevant gas and electricity service providers.
- 3) All new services shall be located underground

12.9.7.5 Community Services and Recreation

A. Objective

- a) Determine the range of services required and opportunities for public recreation and community use, consistent with the desired character of development and population projections.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Confirmation of the likely population and social profile of the site's future residents;
- 2) Identification of the range of needs, which may be reasonably attributed to the projected population;
- 3) Identification of innovative means by which these needs can be met, possibly including shared facilities and/or joint ventures;
- 4) A balanced provision of facilities to meet projected needs, having regard to existing facilities within the area;
- 5) An appropriate location, configuration and design for facilities which meets the needs of users and minimises the costs operation and maintenance; and
- 6) Demonstration that local and district needs will be met in accordance with Council's social planning framework.

12.9.7.6 Landscape Design

Effective landscape design is fundamental to traditional neighbourhood design, and makes a significant contribution to the implementation of Ecologically Sustainable Development objectives.

A. Objective

- a) To integrate the planning and design of buildings with the site's landscaping.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Landscapes shall be designed to achieve the environmental, recreational, amenity and townscape objectives of this Section and the Landscape Design Section.
- 2) Design of landscapes shall minimise need for water and nutrients;
- 3) Mature vegetation that has habitat, civic or heritage values shall be conserved;
- 4) Plant species to be in accordance with the Landscape Design Section and the Flora & Fauna study for the site;
- 5) Paving material, lighting, signage and street furniture shall be in accordance with Council guidelines;

- 6) Existing habitat shall be expanded with new plantings configured to provide continuous corridors;
- 7) The design of public streets and parks shall:
 - a) facilitate multiple uses;
 - b) be consistent with Council's current management policies and practices;
 - c) ensure that landmark locations, key thoroughfares and vistas are complemented and reinforced;
 - d) ensure that the public domain is embellished to compensate for smaller residential gardens;
 - e) ensure that drainage reserves are embellished as attractive components within the public domain, as effective adjuncts to wastewater management and as habitat for bird life;
 - f) provide for the identification of individual neighbourhoods and precincts; and
 - g) incorporate appropriate street tree planting.
- 8) Landscape design strategies shall be prepared for each residential neighbourhood and employment precinct; and
- 9) Shelter and shade should be provided for buildings and open spaces, moderating the site's natural microclimate.

12.9.8 Residential Development

A. Objectives

- a) To create a residential environment that is considered vibrant, aesthetically pleasing and safe for residents and visitors;
- b) To provide a safe and competent pedestrian and transport network that links people with activities and places in an efficient manner;
- c) To provide for a range of housing types that should include an affordable housing component;
- d) To integrate with recreational, community and educational facilities;
- e) To provide retail and commercial activities that are not in direct competition with locally based firms; and
- f) To conserve areas of biological diversity, which have heritage significance or are environmentally sensitive.

12.9.8.1 Residential Density

A. Objectives

- a) To provide for a range of residential densities and housing choice.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) A minimum average net density of 30 dwellings per hectare is to be achieved in the R1 General Residential zone. Such density is to be achieved with a mix of housing types, including:

- a) Two storey townhouses; and
- b) Small lot housing.

12.9.8.2 Residential Amenity

A. Objectives

- a) To achieve a high standard of residential and environmental amenity.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) A high standard of amenity appropriate to a medium density and mixed-use environment is to be achieved. This shall include measures to:
 - a) reduce or eliminate potential conflicts between different neighbouring land uses;
 - b) protect visual privacy for dwellings and private open spaces consistent with the Residential Development Section;
 - c) Provide appropriate new communal spaces within the neighbourhoods and the village centre to allow for social interaction of residents.
- 2) Submission of a noise and vibration assessment for any residential development located within 100m of a major arterial road, Transitway environment or rail corridor or in any other area significantly affected by road and/or rail noise and vibration, and appropriate measures to minimise this impact in areas that are significantly affected by noise and vibration.
- 3) Internal noise levels shall accord with EPA noise criteria including:
 - a) Environmental Criteria for Road Traffic Noise, 1 July 2011, Environment Protection Authority;
 - b) Interim Guidelines for Development Near Rail Corridors and Busy Roads, 2008, Department of Planning; and
 - c) NSW Industrial Noise Policy, December 1999, Environment Protection Authority.
- 4) Internal noise levels shall accord with the Noise and Vibration Section;
- 5) Site planning and building design shall consider and address noise mitigation for areas close to significant noise sources including:
 - a) residential development adjoining French Street and the new east/west road link;
 - b) residential development adjoining employment developments; and
 - c) residential development adjoining the railway line.

12.9.8.3 Crime Prevention and Community Safety

A. Objective

- a) To ensure the design of all public areas limits opportunities for crime.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Compliance with the CPTED principles within the Site Planning and Design Principles Section;

- 2) Protection of public spaces shall be demonstrated by:
 - a) designing for high levels of casual surveillance;
 - b) use of effective lighting type and location;
 - c) thoughtful placement of garden areas, trees, street furniture, walling and other structures;
 - d) clear delineation between public and private areas;
 - e) ensuring there are clear sight lines;
 - f) elimination of entrapment and isolated spots;
 - g) provision of safe children's play areas;
 - h) provision of clear signage;
 - i) siting and design of buildings with graffiti management in mind; and
 - j) provision for ongoing maintenance and management strategies that will provide a high level of visual amenity.
- 3) Dwelling security to be demonstrated by ensuring:
 - a) dwellings are designed to have a clear presentation to the street; and
 - b) dwelling entrances being designed to allow the occupant to view persons at the front door without needing to open the door.

12.9.8.4 Population and Housing

A. Objective

- a) To encourage diversification in housing to meet underlying demand from Penrith's existing population.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Demonstration that the development pattern proposed for the site provides housing choice which:
 - a) meets identifiable demand from Penrith's population;
 - b) expands the range of available housing types;
 - c) is within an environmental setting which offers a village lifestyle; and
 - d) complies with the provisions of the Residential Development Section of this DCP.

12.9.8.5 Home-Based Business Activities

A. Objective

- a) To maximise opportunities for residents to establish and operate small-scale business activities from home.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Site planning, housing designs and other physical measures to be included to support home-based business activities, including:
 - a) dedicated rooms for business activities;
 - b) separate entrances for the residences and for business rooms;
 - c) flexible parking and vehicle access for visitors and / or residents – subject to the scale of activity;
 - d) buildings designed according to traditional residential scale and appearance when viewed from the street; and
 - e) 'smart wiring' of homes to enable consumers to access multi telecommunications facilities (internet, e-commerce, cable TV, lighting, audio, security).

12.9.8.6 Retail and Business Services

A. Objective

Provide retail floorspace in the village centre that services the day-to-day needs of local residents and businesses.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Sufficient retail floorspace shall be provided to meet projected local demand of:
 - a) future residents; and
 - b) future businesses.
- 2) The location and design of retail floorspace shall support the desired form and character of the future development:
 - a) in a consolidated form to provide a core of pedestrian activity within the village centre;
 - b) in a location which is central, highly visible and accessible, fronting a principal site road;
 - c) incorporating a civic open space;
 - d) with continuous "active" shop-frontages and all-weather awnings facing wide, tree-lined footpaths;
 - e) with short-term parking at kerbside for visitors and shoppers;
 - f) within buildings designed to preserve a human scale at street-level; and
 - g) retail and commercial facilities are restricted to the ground floor level of buildings only.
- 3) Small-scale retail-type services shall be accommodated on the site:
 - a) in response to demand from local home businesses and other business activities;
 - b) in prominent locations; and
 - c) designed to maximise visibility and accessibility, and to provide distinctive urban design elements.

12.9.8.7 Parking

A. Objectives

- a) To ensure a level of parking provision consistent with the density and form of housing provided; and
- b) To limit parking numbers as a tool to increase the use of public transport.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Applications for residential development shall demonstrate compliance with the relevant parking rates in and the Car Parking section of this DCP.
- 2) A reduction in required parking provision may be considered by Council for any dedicated student housing within the development where a lesser demand is demonstrated.

Table of Contents

PART A - RIVERLINK PRECINCT (EXCLUDING PANTHERS PENRITH SITE)	2
13.1 URBAN FRAMEWORK	5
13.1.1 LANDSCAPE STRUCTURE	5
13.2 CONNECTIVITY	6
13.2.1 PERMEABILITY	7
13.2.2 PEDESTRIAN AND CYCLE NETWORK	8
13.3 BUILT FORM	9
13.3.1 STREET ALIGNMENT AND SETBACKS	9
13.3.2 ACTIVE STREET FRONTAGES	12
13.4 FUTURE CHARACTER STRATEGY FOR SUB PRECINCTS	14
13.4.1 RIVER GATEWAY	16
13.4.2 TOURISM AND RECREATION PRECINCT	19

Part A - Riverlink Precinct (Excluding Panthers Penrith Site)

A. A. Background

The Riverlink Precinct has a rich and diverse history. Originally settled by the local Aboriginal peoples (Mulgowey and Booroonboorongal people), the area was first settled by Europeans in 1803 when land along the east bank of the Nepean River was surveyed. Land lots adjacent to the river were granted by Governor King to free settlers, ex-military men and ex-convicts.

Following further European settlement in the early 1800s, the Nepean River was crossed in 1813 by Gregory Blaxland, William Lawson and William Wentworth, who sought greater grazing lands in the western plains in order to help sustain the growing colony. This resulted in new towns along the river providing a gateway to the west. The construction of a road connecting Emu Plains to Sydney in 1815 resulted in further growth in the area. The construction of the Victoria Bridge in 1867 and the Regentville Bridge (also known as the M4 Bridge) further shaped development of the Riverlink Precinct. Ongoing development in the area over time has resulted in the Precinct's diverse land uses which exist today, such as residential, employment and entertainment facilities.

This section of the DCP applies to development on land known as the Riverlink Precinct as identified in Figure E13.1: Riverlink Precinct Location Map. This section provides specific controls for the Riverlink Precinct and is to be read in conjunction with other parts of the DCP.

Documents which are to be considered in the context of E13 Riverlink Precinct include:

- a) Riverlink Precinct Plan (2008)
- b) Riverlink Precinct Urban Design Study (2009)
- c) Traffic, Transport and Access Study (2009)
- d) Economic Impact and Land Use Analysis (2010)
- e) The Future of Penrith, Penrith of the Future (2012)
- f) 'Our River' Master Plan Report (2013)

The Riverlink Precinct is located within a 2km radius of the city centre and is approximately 370 hectares in area. The Precinct is bounded by the eastern bank of the Nepean River to the west, Mulgoa Road to the east, the M4 Motorway to the south and the Western Railway line to the north. It includes the Penrith Panthers Club and associated lands and facilities as shown in Figure E13.1.

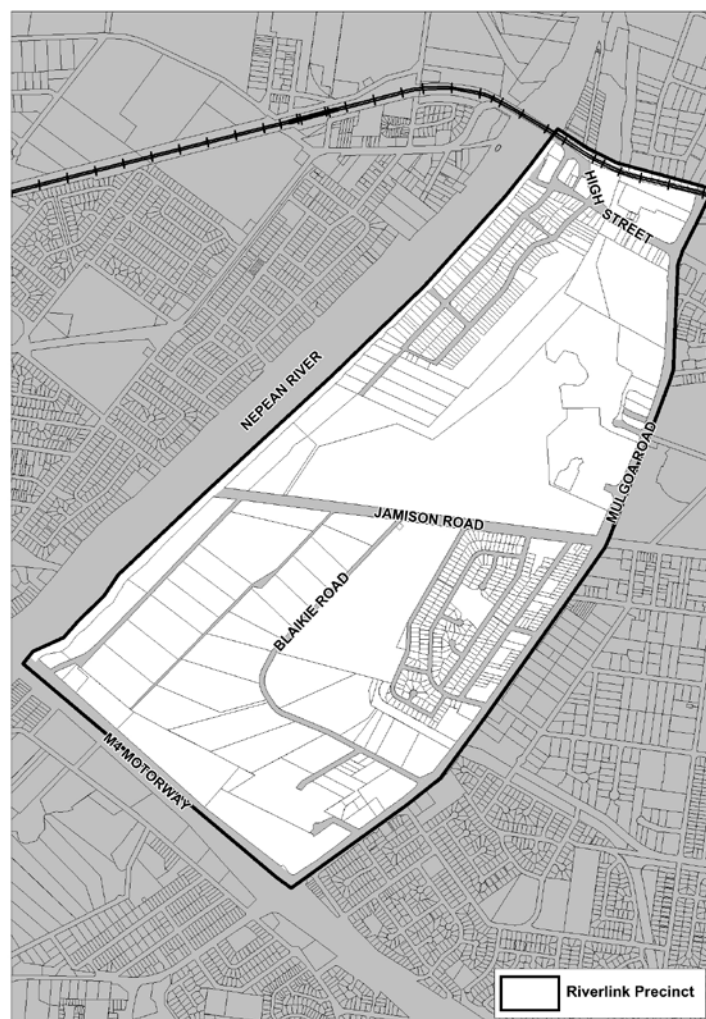
The Precinct comprises a mix of uses including:

- Residential – rural and suburban – single detached houses, townhouses/villas, retirement housing.
- Bulky goods retail/warehousing – large floorplate with at grade car parking.
- Leisure/entertainment – large floorplate commercial buildings with at grade car parking.
- Hotels/motels – large floorplate, 2+ storey commercial buildings with at grade car parking.
- Open space – Tench Reserve, drainage easements, stormwater drainage.

The Precinct has the broad goal of creating a living, entertainment and working hub to link the city centre to the Nepean River. It seeks to create a cohesive and well-connected precinct by:

- Enhancing and activating Mulgoa Road as a significant approach to Penrith City Centre
- Reinforcing key intersections as gateways to the Precinct and the Penrith City Centre
- Creating a clear and legible public domain framework of streets and open space
- Creating a new local north-south access link between Jamison Road and the Great Western Highway
- Extending Ransley Street west through the Panthers site, connecting to the open space corridor
- Creating an exciting core of entertainment, leisure and lifestyle uses around the existing club
- Incorporating sustainability best practice
- Connecting Riverlink pathways with the Great River Walk
- Encouraging views of the Blue Mountains from the public domain
- Encouraging design excellence
- Improving connectivity through the Precinct
- Enhancing Peachtree Creek.

Figure E13.1 Riverlink Precinct Location Map



Riverlink Precinct Vision

The Riverlink Precinct will be a living and working hub providing residential and employment activities with a key focus on the Nepean River. The Precinct will comprise a mix of activity nodes, with a diverse range of land uses and services and a substantial entertainment and leisure-based focus. A range of entertainment activities will be provided which will attract visitors from an extensive catchment in addition to servicing the local community.

Community and cultural needs, including additional cultural facilities will be provided at the Western Gateway to the Penrith CBD and provide a distinctive architectural focus.

The public domain and open space character will be treed and green and relatively open, revealing views and vistas to the Blue Mountains, Peachtree Creek parklands and the Nepean River. View corridors to the Blue Mountains will be reinforced. A series of open space linkages will preserve areas for active and passive recreation, ensure land remains for natural habitats and incorporate water sensitive design. The public domain throughout the Precinct will be permeable and connected to its context and feature design excellence. A series of pedestrian and cyclist pathways will encourage walkability and easy access to the CBD and water activity nodes in the Precinct. Gateways for entering the sites will be strengthened and reinforced from major roads and thoroughfares. Mulgoa Road will be a high quality, urban entry to the Penrith CBD environs.

Built form development in the Precinct will be of a high quality, providing visual and landscape amenity for workers and residents befitting the site's proximity to the Penrith CBD. Development will incorporate best practice in terms of sustainability and urban design outcomes. The heritage significance of all heritage items and the natural landscape features in the Precinct will be recognised, reinforced and valued.

B. B. Precinct Objectives

1) Connectivity and links

- a) To create strong synergies with the Penrith City Centre by optimising the proximity to the centre and complementing its land uses and character areas.
- b) To create the Riverlink by strengthening the relationship to and connection with the Nepean River.
- c) To reinforce transport links and pedestrian connections to the Penrith City Centre and public transport hubs.
- d) To improve links and connectivity across the Precinct and between the various landholdings.

2) Co-operation

- a) To address precinct issues such as flooding and access through collaboration with key stakeholders within the Riverlink Precinct.

3) Local character and regional appeal

- a) To reinforce and enhance local identity and sense of place through public domain and building design.
- b) To create a highly desirable visitor destination.
- c) To create an exciting new entertainment, leisure and lifestyle hub.

4) Design excellence

- a) To meet and exceed sustainability benchmarks, including water quality.
- b) To achieve public domain and architectural design excellence.

13.1 Urban Framework

The Urban Framework focuses on the broad scale and the long term, and sets an overall planning and design context within which more detailed and localised strategies, studies and projects can be coordinated. The Urban Framework provides a physical interpretation of Riverlink's vision and strategies. It helps to ensure that the built environment created reflects the community's vision and Council's strategies, and it underpins an integrated approach to better physical environments.

13.1.1 Landscape Structure

C. A. Background

The largely undeveloped and floodplain nature of the Precinct means that the existing character is predominantly 'green', grassed and open with a rural and undeveloped feel. There is a mixture of public domain and park planting, private domain larger site planting (front and rear), and riparian planting (creek or river vegetation). There are some small neighbourhood parks associated with the residential areas.

The Landscape Structure seeks to integrate the natural and civic areas of the site through strong landscape links from the riparian areas back along the tree linked roadways to the Mulgoa Road frontage. Landscape components and strategies that underpin the Landscape Structure include:

- Landscaping streets, site boundaries and interfaces that contribute to the landscape identity of the Precinct.
- Acknowledging and responding to the site flooding events through landscape, environmental, engineering, built form and site management elements.
- Provision of a green interface with Mulgoa Road.
- Developing an interesting and culturally engaging component to connect the Great River Walk along the Nepean River.
- Enhancing the flood prone areas and riparian areas along Peachtree and Surveyors Creek as open space with a variety of active and passive recreational areas including a pedestrian/cyclist network. Naturalise, rehabilitate, and re-establish indigenous plantings along Peachtree and Surveyors Creeks.
- Maintaining the 'green' character by requiring setbacks for front gardens or plantings.
- Enhancing views to the Nepean River through management of the riparian plantings at Jamison Road and other public streets.
- Creating access points to the water for a wide range of passive and recreational activities.
- Creating shade in summer and solar access in winter.

D. B. Objectives

- a) To create well designed active and passive recreation areas and open spaces;
- b) To ensure the landscape contributes to the amenity of streets, including shade, especially the active streets;
- c) To maintain view corridors to the mountains;
- d) To reinforce the city's ecology by using appropriate species for the area;
- e) To improve urban air quality and contribute to biodiversity;

- f) To ensure landscaping designs incorporates methods for conserving mains water; and
- g) To incorporate WSUD principles and contribute to the reduction of stormwater runoff.

E. C. Controls

1) General

- a) A long-term landscape concept plan must be provided for all landscaped areas including the deep soil landscape zone in accordance with the Landscape Design section of this DCP.
- b) Remnant vegetation and riparian areas in the precinct are to be protected and enhanced where possible.
- c) Any significant stands of mature trees are to be assessed and where the health and vigour of the stand is demonstrated, are to be retained.
- d) Landscaping is to be integrated in the front setback of the development to provide an attractive outlook within buildings, an attractive edge to the footpath, and to screen and breakdown the apparent scale of large areas of façade, bulk of building mass and urban form.
- e) Where the setback area is a deep soil zone, clear-trunk canopy trees shall be planted.
- f) Where an established planting character exists, this is to be continued into adjacent new development sites.
- g) Native or indigenous plants that have lower water requirements are to be incorporated.
- h) Landscaping of balconies, walls or roofs (vertical gardens/pots) should be provided to help visually minimise building mass and help soften the building. These areas should be designed for optimum conditions for plant growth by:
 - i. Providing soil depth, soil volume and soil area appropriate to the size of the plants to be established;
 - ii. Providing appropriate soil conditions and irrigation methods
 - iii. Providing appropriate drainage.
 - iv. The mix of plants in a planter, for example, where trees are planted in association with shrubs, groundcovers and grass.
 - v. Ensuring appropriate long term maintenance will be provided.

2) Street Design

- a) All streets are to provide verge planting in local streets and full width decorative paving in pedestrian areas with high activity.
- b) The street detailing, furniture, lighting and finishes are to be developed to respond to the specific character of the Precinct and are to complement the design palette in the draft Penrith Public Domain Technical Manual.

13.2 Connectivity

Connections for pedestrians, cyclists, public transport, cars, trucks and service vehicles through new and existing links to the Great River Walk, City Centre and surrounding areas ensures key activity nodes are activated. Key links through the Precinct as shown in Figure E13.2 will acknowledge views to the Blue Mountains and connections to the River.

13.2.1 Permeability

A. Background

Within the non-residential areas of the Precinct, there is a limited street network reflecting the large scale building footprint of land uses and activities and lack of development due to flooding. Large blocks reflect existing uses – bulky goods and entertainment. Rural residential, smaller blocks and lots (which are finer grain) reflect smaller scale residential uses.

Through site links provide access connections between the long sides of street blocks for pedestrian and vehicular access at street level. These links provide an important function in the form of lanes, shared zones, arcades and pedestrian ways.

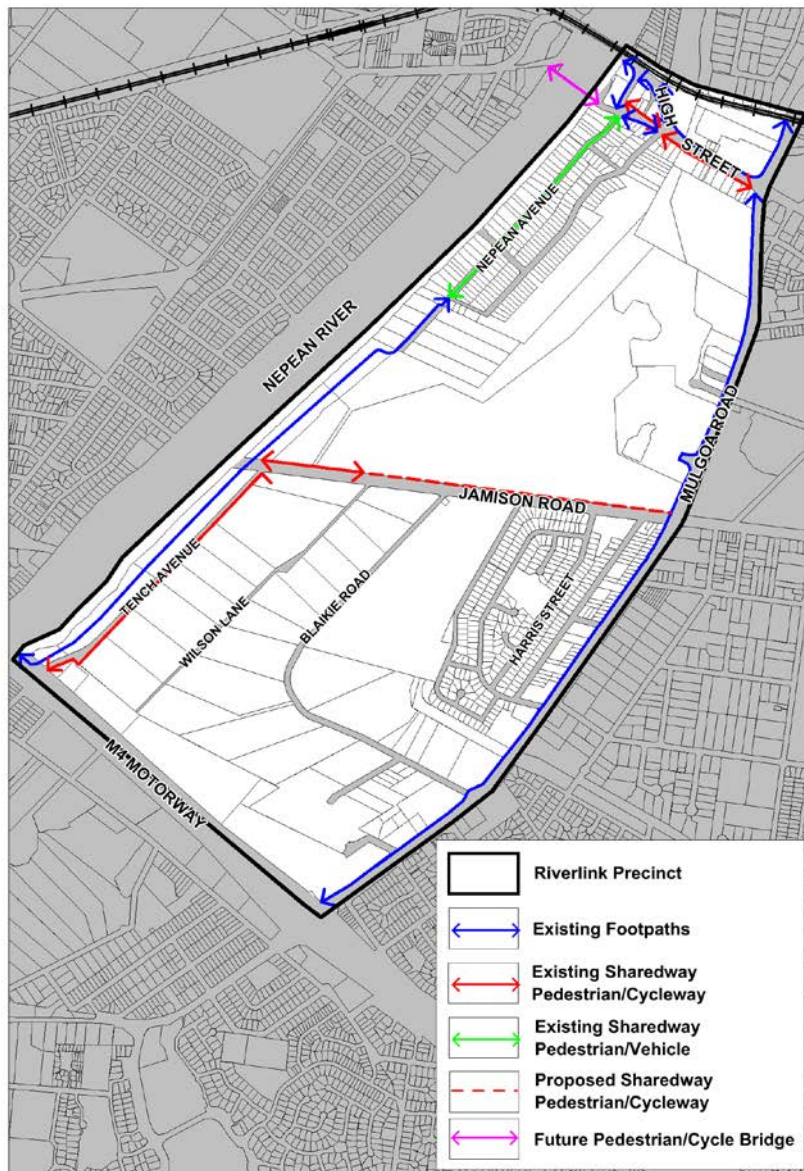
B. Objectives

- a) To retain and enhance existing through site links as redevelopment occurs.
- b) To enhance connections between the Riverlink Precinct and surrounding areas, both along and across the Nepean River and through existing and new street networks.
- c) To take advantage of all possible pedestrian connections to enable the site to function physically as a 'Riverlink' to the City Centre.
- d) To connect the Riverlink pedestrian/cyclist network to the Great River Walk.
- e) To improve the visual connection through the precinct to the river and mountains.
- f) To improve permeability of large sites when they are redeveloped for more intensive uses.
- g) To provide for pedestrian amenity and safety.

C. Controls

- 1) Through site links are to be provided as shown in Figure E13.2: Existing and Proposed Connections with accessible paths of travel that are:
 - a) a minimum width of 4m for its full length and clear of all obstructions including columns, stairs, etc
 - b) Direct and publicly accessible thoroughfares for pedestrians; and
 - c) Open-air for its full length and have active frontages or a street address.
- 2) Ensure new streets and through site links extend and reinforce the existing street and block pattern as shown in Figure E13.2.
- 3) New through site links should be connected with existing and proposed through block lanes, shared zones, arcades and pedestrian ways and opposite other through site links.
- 4) The redevelopment of sites with an extra area of 5 hectares or more are to include new streets, lanes and/or site links to ensure permeability and encourage public access throughout the site.
- 5) Locate vehicular access and entries to parking on secondary streets or at the rear of buildings.
- 6) Existing publicly and privately owned links are to be retained.
- 7) Signage is to be located at street entries indicating public access through the site as well as the street to which the link connects.

Figure E13.2: Existing and proposed connections



13.2.2 Pedestrian and Cycle Network

A. Background

A series of linkages will encourage walkability and easy access to activity nodes in the Precinct as shown in Figure E13.2 Existing and Proposed Connections. Better pedestrian and cycleway connections will be created by new links and connections between existing pathways. Safety will be enhanced by designing buildings that have natural surveillance of pathways, laneways, parks, open space corridors or other elements of the public domain.

B. Objectives

- a) To provide safe and easy access to buildings to enable better use and enjoyment by people regardless of age and physical condition, whilst also contributing to the vitality and vibrancy of the public domain

- b) To provide a safe and accessible public domain
- c) To create an extended and enhanced pedestrian and cycling network.
- d) To provide continuous trafficable footpaths to all streets.
- e) To provide opportunities for casual surveillance, places to enjoy views, and place to sit and rest along the off road pedestrian and cycle network.
- f) To ensure adequate provision for expansion of the cycle network.

F. C. Controls

- 1) Paved surfaces are to be designed to delineate between different uses including pedestrian areas, car parking spaces and driveways.
- 2) Signage is to be located at street entries indicating public access through the site as well as the street to which the link connects.

13.3 Built Form

The development provisions in this section are intended to encourage high quality design for new buildings, balancing the character of the Riverlink Precinct with innovation and creativity. The resulting built form and character of new development should contribute to an attractive public domain and produce a desirable setting for its intended uses.

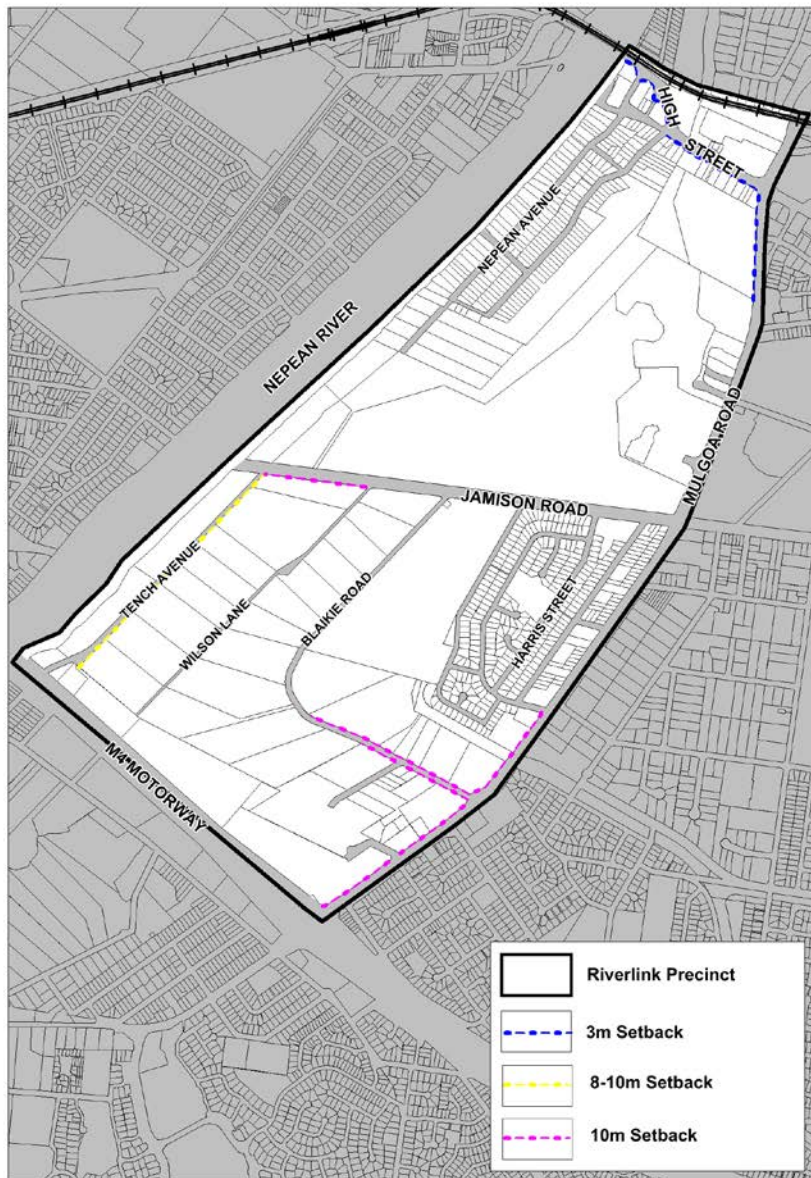
13.3.1 Street Alignment and Setbacks

G. A. Background

Street setbacks and building alignments establish the front building line. They help to create the proportions of the street and can contribute to the public domain by enhancing streetscape character and continuity of street facades.

Street setbacks can be used to enhance the setting and address for the building. They provide for landscape areas, deep soil zones and entries to ground floor apartments. Setbacks allow ventilation, daylight access and view sharing and increase privacy.

Figure E13.3 Street Setbacks



B. Objectives

- To establish consistent building alignments to the street.
- To provide street setbacks appropriate to building function and character.
- To establish the desired spatial proportions of the street and define the street edge.
- To create a transition between public and private space.
- To locate active uses closer to pedestrian activity areas.
- To maintain solar access to the public domain.
- To protect important views to the Blue Mountains escarpment.
- To ensure an appropriate level of amenity for building occupants in terms of daylight access, outlook, view sharing, ventilation, wind mitigation, and privacy.

- i) To achieve usable and pleasant streets and public domain areas in terms of wind mitigation and daylight access.
- j) To provide building separation for visual and acoustic privacy
- k) To provide deep soil zones within sites and maintain mature/significant vegetation where possible.

C. Controls

- 1) Street setbacks are to be in accordance with those shown in Figure E13.3. Where an area is not identified in Figure E13.3 applicants should refer to other sections of this DCP for minimum setback requirements.
- 2) Provide slender buildings aligned to the street or pedestrian walkways where possible.
- 3) Minor projections into front building lines and setbacks for sun shading devices, entry awnings and cornices are permissible.
- 4) Buildings must demonstrate that views to the Blue Mountains escarpment are maintained through the provision of technically accurate perspectives to the satisfaction of Council officers.
- 5) The following development is permitted and preferred within the 8-10m setback along Tench Avenue:
 - a) Outdoor dining and awnings, including upper storey dining, where appropriate, to maximise views to the river;
 - b) Landscaping, including shade trees; and
 - c) Limited signage and parking.

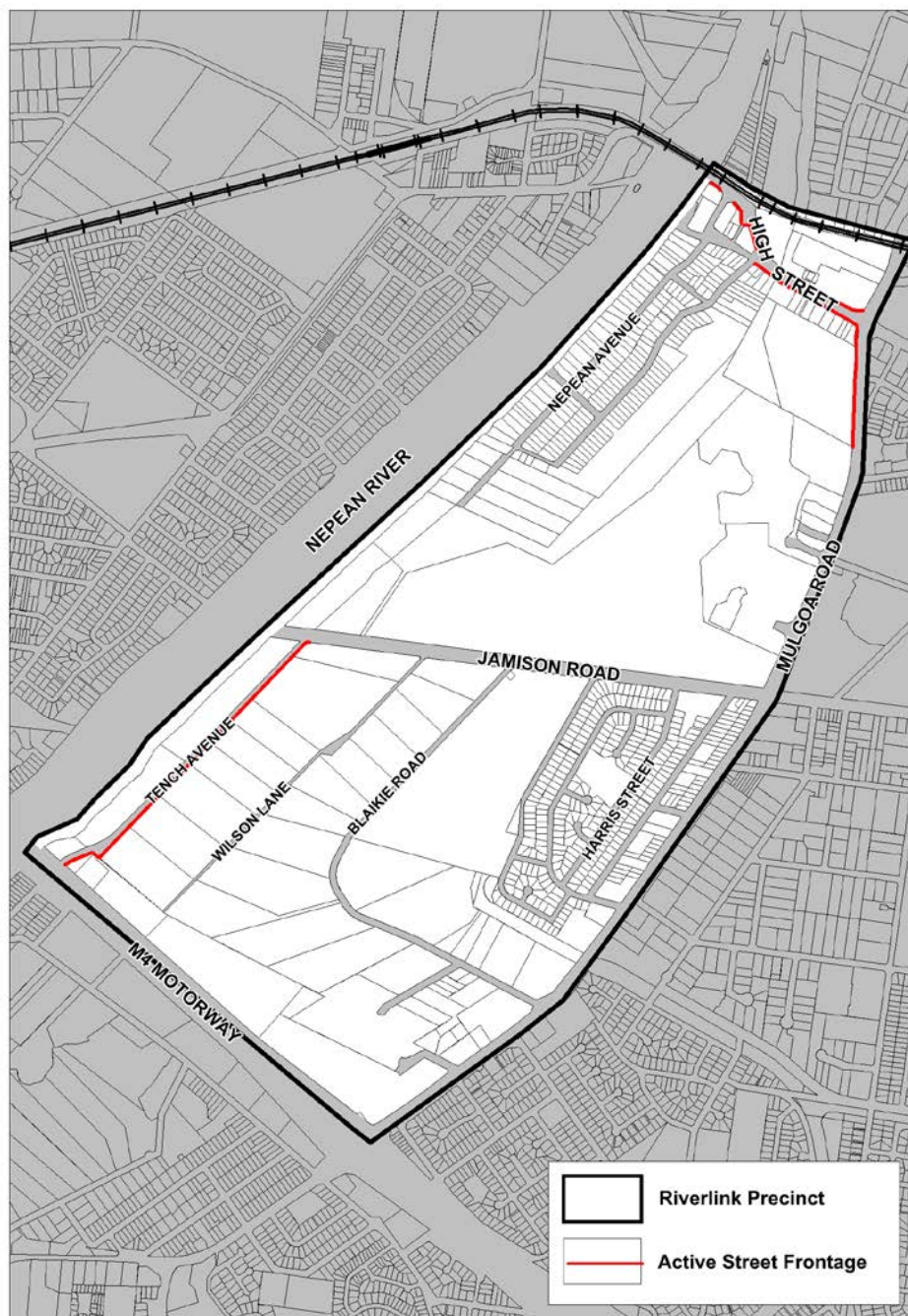
A cross section of preferred development within the 8-10m setback along Tench Avenue is illustrated in Figure E13.4 below.

Figure E13.4: Cross section of preferred development within 8-10m setback along Tench Avenue



13.3.2 Active Street Frontages

Figure E13.5: Active Street Frontages



A. Background

Active frontages promote an interesting and safe pedestrian environment. Due to the size of the area, it is recognised that not all streets will develop as active pedestrian areas. As shown in Figure E13.5 Active Street Frontages have been identified where active ground level uses are to be consolidated, creating vibrant streetscapes in areas with high pedestrian traffic and possibly located close to public transport and public open space.

Active uses include:

- Shop fronts

- Retail/service facilities with a street entrance
- Cafe or restaurants with street entrance
- Community and civic uses with a street entrance
- Recreation and leisure facilities with a street entrance.

B. Objectives

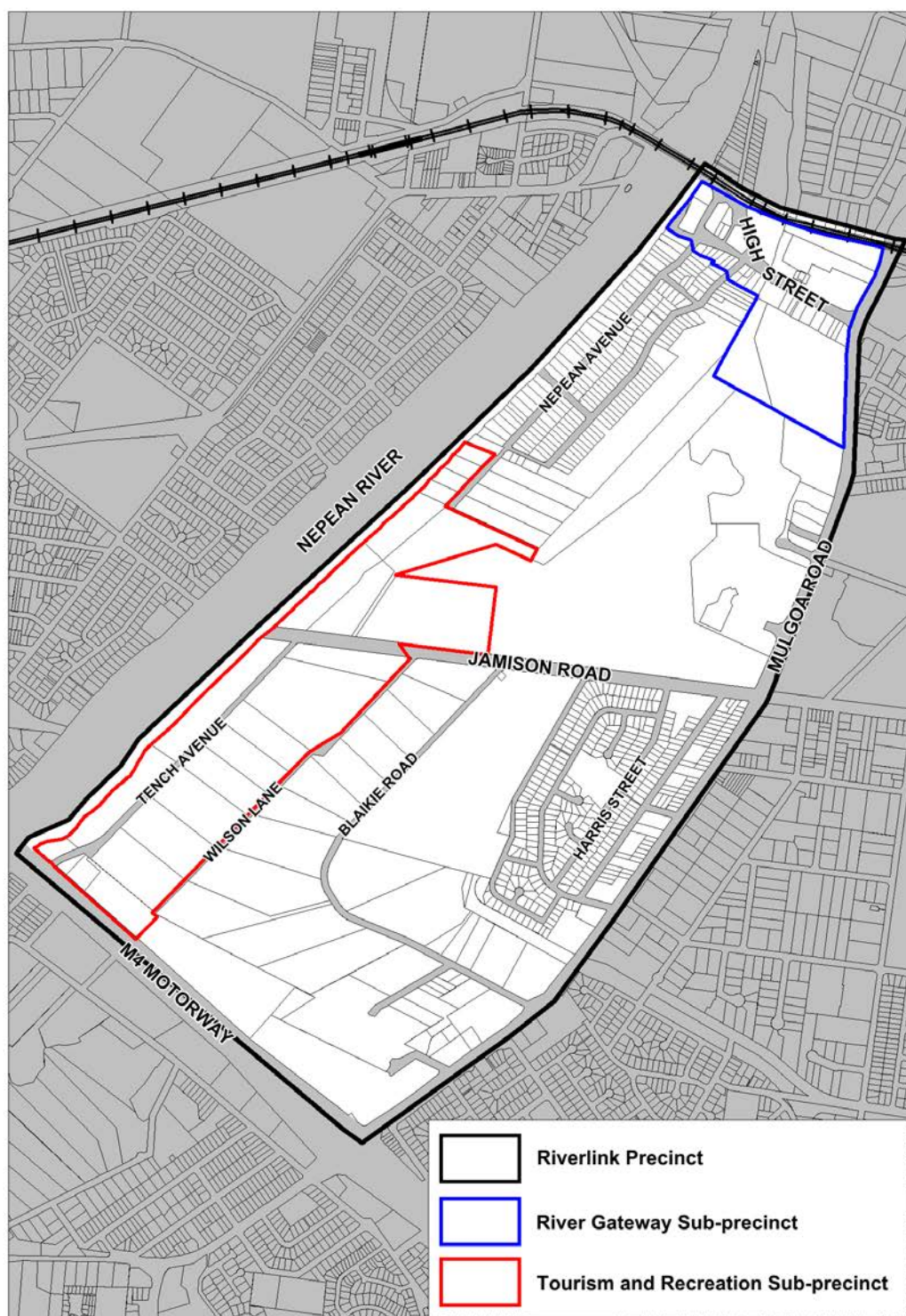
- a) To promote pedestrian activity and safety in the public domain.
- b) Achieve active street frontages with good physical and visual connections between buildings and the street
- c) To create vibrant streetscapes around areas of high pedestrian traffic.
- d) To encourage activity within the site outside commercial business hours.
- e) To provide a mix of uses to support an increasing employment and visitor population over time.
- f) To enhance pedestrian safety, security and amenity.

C. Controls

- 1) Active ground level uses are to be located as shown in Figure E13.5.
- 2) Entries to active frontage tenancies are to be accessible and at the same level as the adjacent footpath.
- 3) Vehicular access points should not be located at primary active frontages or adjacent to building entry points.
- 4) Ground level uses at active frontage zones are to be located at or close to street level.
- 5) Transparency and openings to the street are to be maximised and blank walls, fire exits and building services elements are to be minimised.
- 6) Locate primary pedestrian entries to buildings on the street frontage.
- 7) Design setback areas to provide interest and maximise opportunities for casual surveillance.
- 8) Design openings, including main entries, to the street to activate the street and to provide passive surveillance and overlooking of the public domain
- 9) Development on High Street may be built to the street frontage to encourage active uses including restaurants and cafes.

13.4 Future Character Strategy for Sub Precincts

Figure E13.6: Sub Precincts



A. Introduction

Character is determined by the differing combinations of physical elements that give an area a distinctive quality. These elements refer to the physical setting, the economic and land use patterns over time, and the social and cultural history.

Due to the size and strategic importance of the Riverlink Precinct, specific design principles and development outcomes have been identified for sub precincts. Large parts of the Precinct are in transition and will have a different character in time to what currently exists.

This part seeks to encourage urban design and architectural excellence as well as environmental sustainability in both the public and private domain for these key precincts.

Built form and public domain controls need to retain positive character elements such as built form and landscape elements and control future development to achieve a desired future character. Development within sub precincts as shown in Figure E13.6 is to consider the desired character of that precinct.

Architectural excellence is particularly important where the building is highly visible from the public domain outside the Precinct. Good building design should positively contribute to the overall architectural quality of the city and provide buildings appropriate to their context. In some circumstances, this contribution may be as an iconic or landmark building, but more typically it is as a well-mannered building that fits sensitively into the streetscape.

The maintenance and improvement of the public domain is dependent on a high quality approach to the design of new development including the articulation and finish of building exteriors. Careful consideration must be given to the built form, quality of materials, integrity of the design concept and its contribution to the public domain.

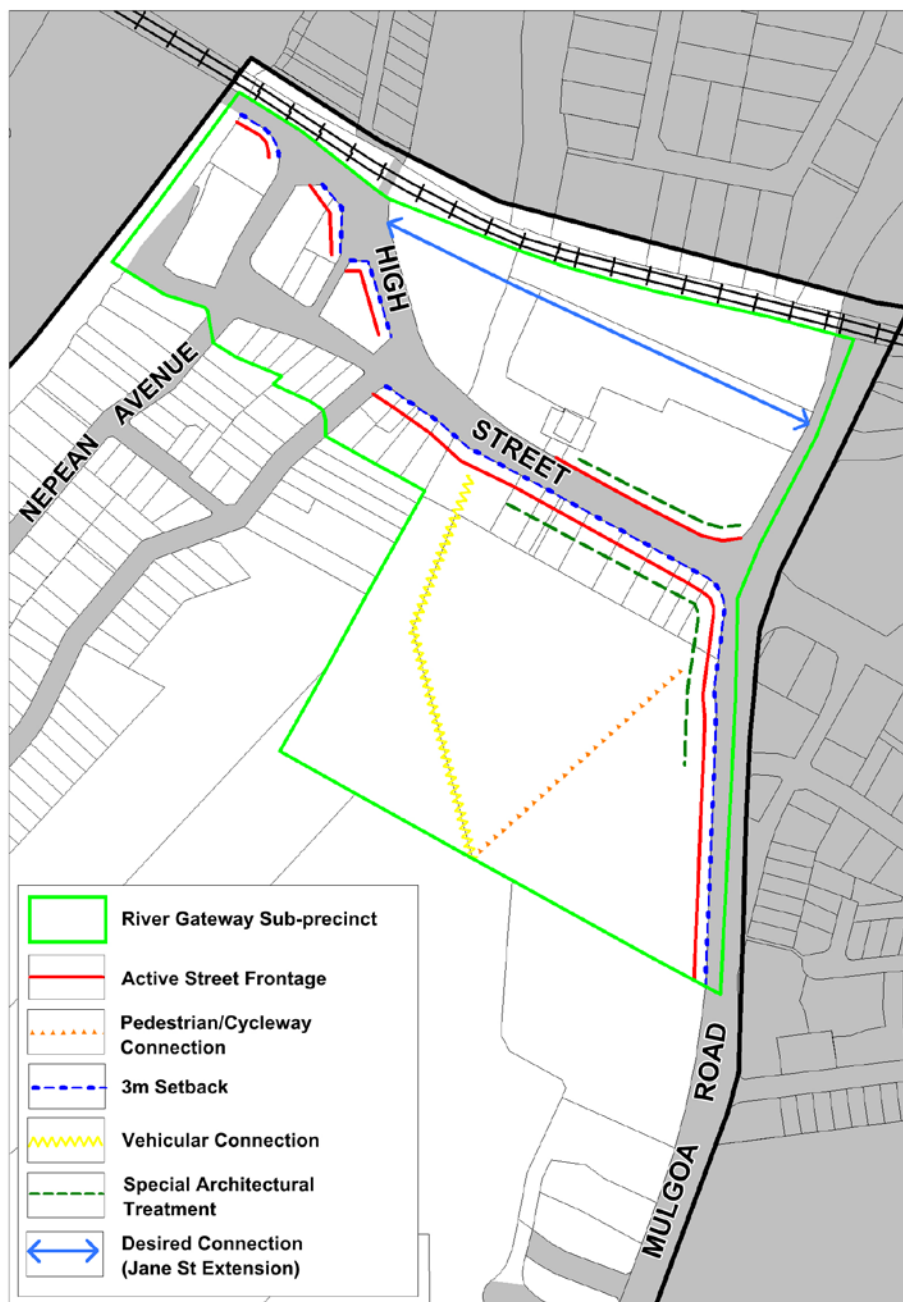
Sub precincts are also rich in panoramic and focused street views to the Blue Mountains escarpment. These views are fundamental to the identity of the region and characterise this area of Penrith. Views are regarded as significant when they terminate at places of architectural, landscape, or cultural significance. This may include views of the Nepean River, public open space areas or heritage buildings. It is important that views to the Blue Mountains be maintained from as many points as possible at street level. In the redevelopment of key sites consideration should be given to opening up new significant views.

B. Objectives

- a) To create a framework that is flexible enough to accommodate a changing range of uses over time and respond to market opportunities
- b) To facilitate the orderly development of key precincts
- c) To create distinctive places activated by a mix of uses
- d) To ensure that development contributes to the overall creation of a destination within Penrith
- e) To retain and enhance panoramic views to the Blue Mountains escarpment and the Nepean River from existing streets and the public domain
- f) To retain and enhance views to natural and cultural landmarks and heritage items

13.4.1 River Gateway

Figure E13.7: River Gateway sub-precinct



A. Background

The River Gateway sub precinct as shown in Figure E13.7 is an integral part of the 'Riverlink', the reconnecting of the City Centre with the River, to better link the beauty of the City's natural landscape with its urban environments. This Precinct, along with the Carpenters site and Woodriff Gardens, proposes the re-visioning of public transport, stronger pedestrian and cycling networks, green spaces and a pedestrian bridge. In addition, there has been identified a community desire for an activated river frontage, as well as a strategic mix of indoor and outdoor areas which encourage people of all ages to come together to build a sense of community.

B. Objectives

- a) To connect the Penrith City Centre with the River and Penrith Lakes
- b) To create multi-modal opportunities for people to engage with the River
- c) To optimise views of the Victoria Bridge, Nepean Valley and the Blue Mountains eastern escarpment
- d) To connect Penrith, Emu Plains and the Blue Mountains
- e) To respect the historic setting and place
- f) To provide an iconic bridge, dedicated to pedestrians and bicycle riders, over the Nepean River
- g) To ensure buildings and structures are iconic and regionally significant, and which distinguish Penrith from other places
- h) To integrate with a green network that connects the Penrith City Centre with the River and environs – the 'Riverlink'

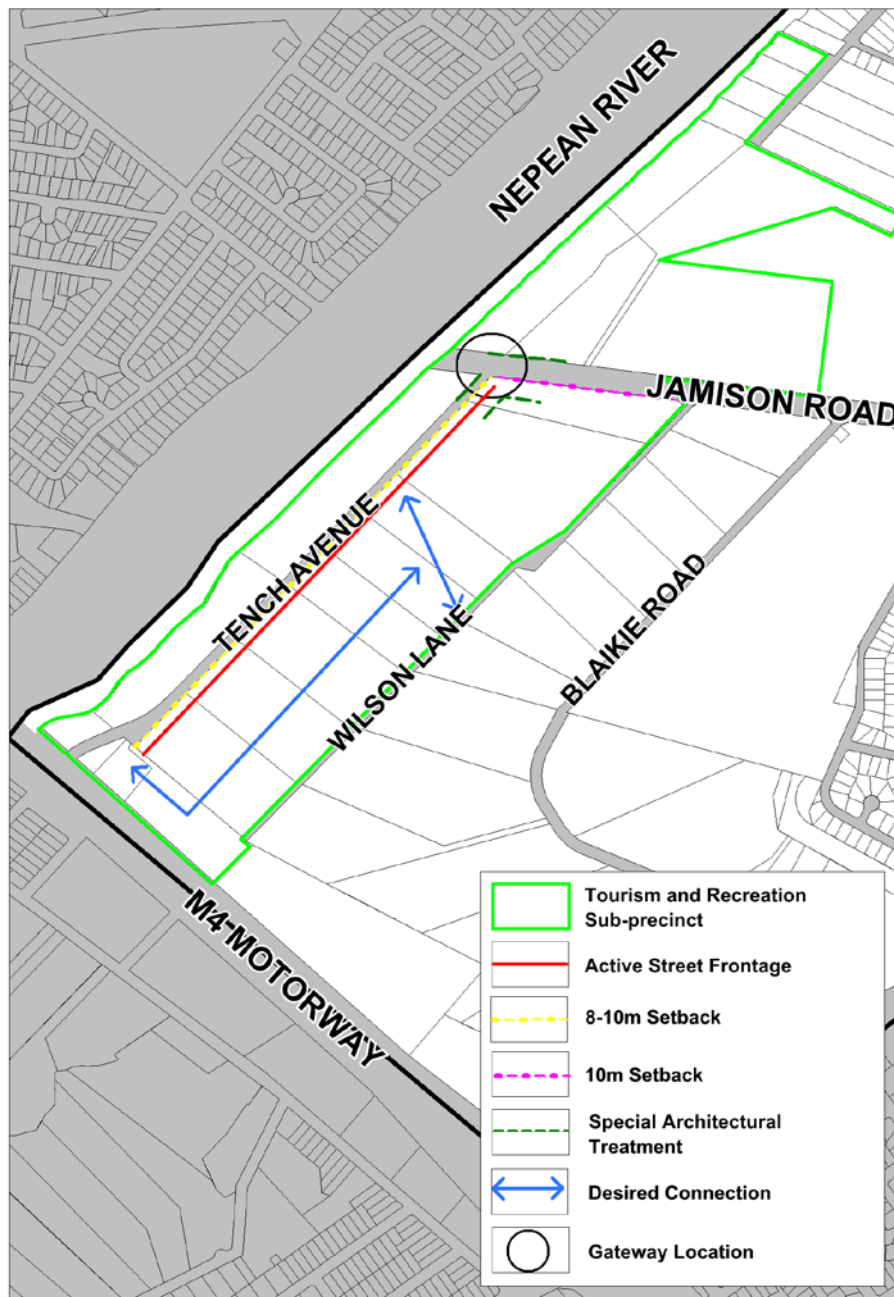
C. Controls

- 1) The built form within this sub precinct must provide a transition from the City Centre to the active, recreational edge of the Nepean River and the lower density residential surrounds.
- 2) Development should be massed to the High Street corners at Mulgoa and Castlereagh Roads to mark the City Centre Western Gateway.
- 3) Development must provide an active edge to High Street, street address and continuation of High Street to the water.
- 4) Power lines are to be located underground.
- 5) Where power lines cannot be located underground, development may need to be set back from the corridor to allow for an appropriate buffer zone (may require up to 30 metres each side – with exact dimensions to be confirmed by utility authorities).
- 6) Civic and cultural elements of the City Centre should be incorporated and extended through to the Nepean River via High Street.
- 7) Landmark and gateway locations are to have buildings that demonstrate architectural excellence in the following ways:
 - a) How the building reinforces and enhances significant vistas and view corridors.
 - b) How the building will enliven the public domain it adjoins.
- 8) Particular attention is to be paid to detailing of materials. In general:
 - a) Painted surfaces are not appropriate especially at street 'level'.
 - b) External walls should be clad with high quality and durable materials and finishes.
 - c) Architectural form/design uniqueness is to be considered.
- 9) Provide an architecturally distinctive, high quality, unique and well-designed building, which responds to the character of the region and establishes the site as a special place.
- 10) Buildings are to be simple, elegant and well proportioned.

- 11) Balconies and terraces should be provided, particularly where buildings overlook parks and on low rise parts of buildings. Gardens on the top of setback areas of buildings are encouraged.
- 12) Façades are to be articulated so that they address the street and add visual interest.
- 13) To assist articulation and visual interest, large expanses of any single material are to be avoided.
- 14) Adjoining buildings (particularly heritage buildings) are to be considered in the design of new buildings in terms of:
 - a) datum of main façade and roof elements,
 - b) appropriate materials and finishes selection,
 - c) façade proportions including horizontal or vertical emphasis.
- 15) Parking areas must not dominate the street frontage.
- 16) Mixed use buildings are to provide pedestrian friendly, active street edges.
- 17) A street should be provided on the boundary of the Mountain View Retirement Village complex to activate this edge.
- 18) A north-south vehicular link should be provided through the sub precinct from Great Western Hwy/High Street to the southern boundary (Panthers Precinct).
- 19) A view connection should be created from Penrith Civic Centre through the sub precinct on the corner of Mulgoa Road and High Street in the form of a pedestrian through link.
- 20) A landscaped public domain is to be provided with water features and public art incorporated at street level.
- 21) The city edge should be defined through the use of formal structured plantings, banners on light poles, and street treatments in line with the City Centre.
- 22) Environmental and sustainable initiatives are to be incorporated into new buildings.

13.4.2 Tourism and Recreation Precinct

Figure E13.8: Tourism and Recreation Precinct



A. Background

The Nepean River has a long cultural history, dating back thousands of years. As a spectacular natural and cultural landscape setting, the river provides the opportunity for a series of memorable spaces and places each with their own focus and character, a place to celebrate the community's culture and diversity.

The Tourism and Recreation Precinct as shown in Figure E13.8 is focused around the River and provides a sequence of foreshore open spaces of different sizes, shapes and characters that contribute to a rich and varied promenade experience that draws people along the

waterfront. The river is a significant and important recreational asset in the region. An active and vibrant river should provide a wide range of recreational opportunities both on and off the water, making the river a place to be enjoyed by all.

B. Objectives

- a) Be a destination – provide a river park for the people
- b) Provide a strong sense of arrival along Jamison Road
- c) Create a connected, active and vibrant river with a wide range of recreational opportunities at hubs both on and off the water
- d) Create spaces and places for people to celebrate the community's culture and diversity

C. Controls

- 1) Facilitate access and areas for casual spectator vantage points for river based events
- 2) Facilities for water related uses should be provided at major points along the River such as pontoons, wharf structures, boardwalks and viewing decks.
- 3) Improved vehicle circulation and parking should be provided, including trailer parking near boat launch areas.
- 4) Improvements to the public domain are to be implemented such as street lighting and continuous street planting.
- 5) Vehicular access points and entries to parking areas are to be located on secondary streets or at the rear of buildings.
- 6) Landmark and gateway intersections are to be reinforced with buildings and structures and are to demonstrate architectural excellence in the following areas:
 - a) How the building reinforces and enhances significant vistas and view corridor
 - b) How the building will enliven the public domain it adjoins.
- 7) Materials are to be selected for durability and quality. In general painted surfaces are not appropriate especially at street 'level'.
- 8) Particular attention is to be paid to detailing of materials.
- 9) Balconies and terraces should be provided, particularly where buildings overlook parks and on low rise parts of buildings. Gardens on the top of setback areas of buildings are encouraged.
- 10) Facades are to be articulated so that they address the street and add visual interest.
- 11) To assist articulation and visual interest, large expanses of any single material are to be avoided.
- 12) External walls should be clad with high quality and durable materials and finishes.
- 13) Adjoining buildings (particularly heritage buildings) are to be considered in the design of new buildings in terms of:
 - a) datum of main façade and roof elements,
 - b) appropriate materials and finishes selection,
 - c) façade proportions including horizontal or vertical emphasis.
- 14) Buildings are to be simple, elegant and well proportioned.
- 15) Environmental and sustainable initiatives are to be incorporated into new buildings.

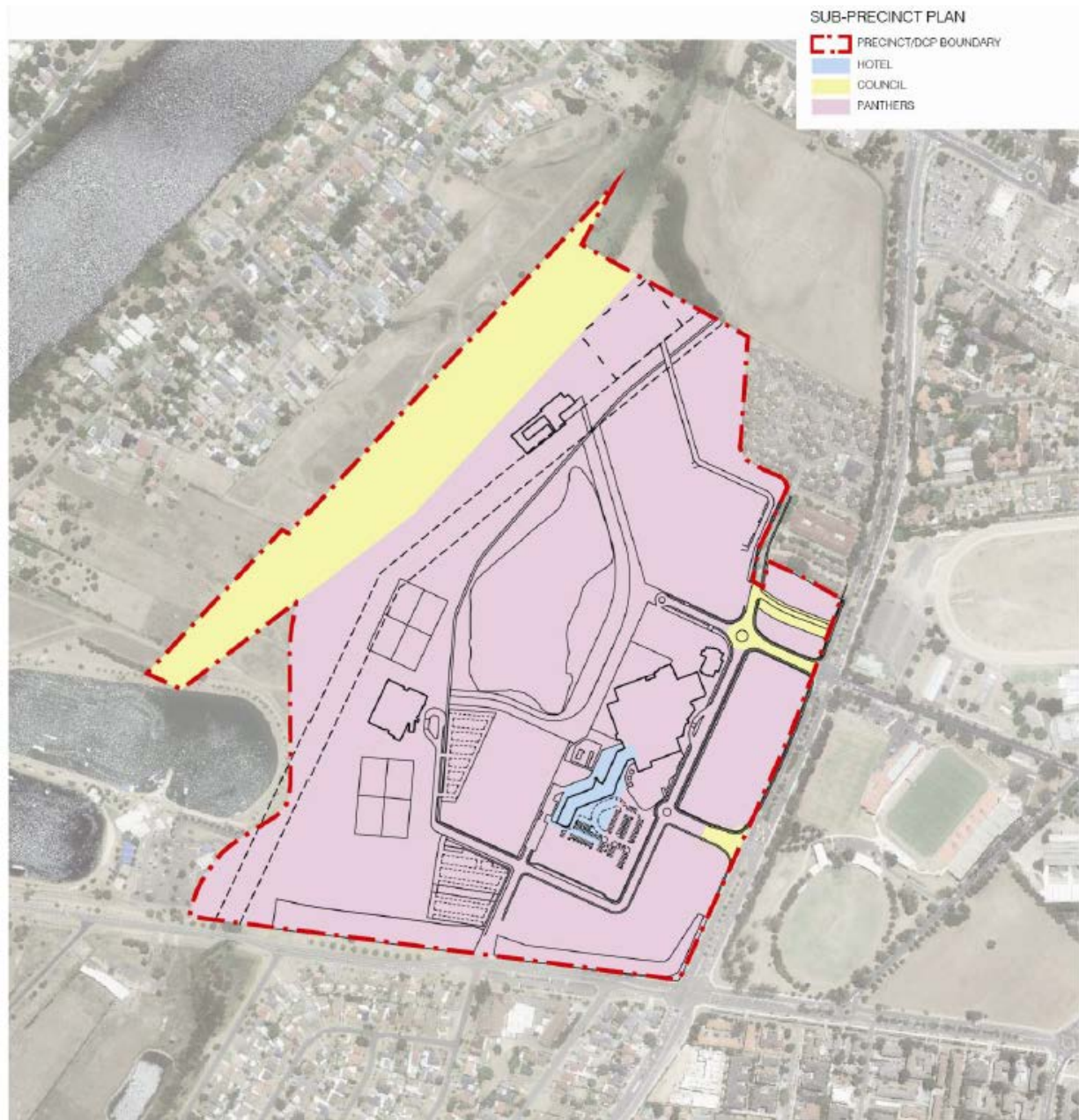
Table of Contents

PART B – PANTHERS PENRITH PRECINCT	22
13.5. PANTHERS PENRITH SITE	22
13.5.1. BACKGROUND	23
13.5.2. RIVERLINK PRECINCT PLAN	24
13.6 PANTHERS PENRITH PRECINCT VISION	26
13.6.1. PANTHERS PENRITH PRECINCT VISION	26
13.6.2. PRECINCT OBJECTIVES	28
13.7 URBAN FRAMEWORK	30
13.7.1. STRUCTURE PLAN	30
13.7.2. LANDSCAPE STRUCTURE	32
13.7.3 SUB PRECINCTS	37
13.7.4 VIEWS	44
13.7.5 PUBLIC ART STRATEGY	45
13.8 CONNECTIVITY	47
13.8.1. STREET DESIGN AND CHARACTER	47
13.8.3. PUBLIC TRANSPORT	54
13.8.4. TRAFFIC, PARKING AND SITE ACCESS	56
13.9 BUILT FORM	59
13.9.1. STREET ALIGNMENT, WALL HEIGHT AND SETBACKS	59
13.9.2. ACTIVE STREET FRONTAGES	66
13.9.3. AWNINGS	68
13.9.4. BUILDING DEPTH AND BULK	69
13.9.5. BUILDING ARTICULATION	70
13.9.6. ARCHITECTURAL EXCELLENCE	71
13.10 DELIVERY	73
13.10.1. FLOODING AND DRAINAGE	73
13.10.2 UTILITIES	75
13.10.3 STAGING	76

Part B – PANTHERS PENRITH PRECINCT

13.5. Panthers Penrith Site

Figure E13.9: Ownership - Panthers Penrith Precinct Area



13.5.1. Background

This section applies to development on land known as Panthers Penrith Precinct as identified in Figures E13.9 and E13.10. This section provides specific controls for Panthers Penrith in addition to the general controls elsewhere in this DCP. Where there is an inconsistency between this section and the rest of this DCP, the requirements of this section prevail.

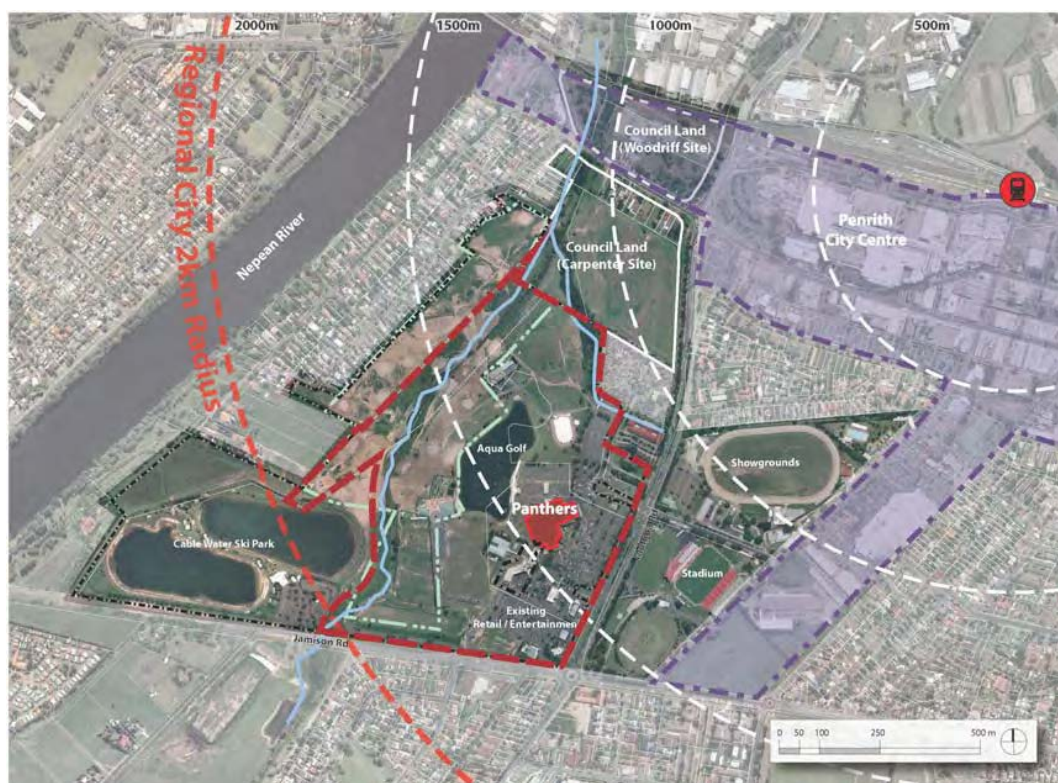
The Panthers Penrith Precinct is located within a 2km radius of the City Centre and is approximately 68.1ha in area. It is bounded by Mulgoa Road to the east, the Nepean River, Nepean and Ladbury Avenue residences to the west, Council's 'Carpenter's site' to the north and Jamison Road to the south. It includes the Panthers Club and associated lands and facilities.

The agglomeration of land uses, within an entertainment core east of Peachtree Creek that incorporates the existing Panthers Club will be revitalised, as an entertainment, leisure, lifestyle and sporting precinct. Possible uses include cinemas, bowling, restaurants, cafes, limited retail, health, wellness and aquatic facilities, sporting facilities, accommodation and a multi-use events/exhibition centre. It will be surrounded by a mix of residential offerings and campus style business park accommodation. Recreational opportunities will be enhanced with green parks and open spaces, as well as walking and cycling tracks. The part of the precinct that has been identified for entertainment, retail, business and residential use in the Panthers Penrith Planning Proposal is 51.11ha in area.

The aim of the controls in this section of the DCP is to provide more detailed provisions for development in the Panthers Penrith Precinct that will:

- a) Contribute to the growth and character of Panthers Penrith Precinct as a cohesive and active entertainment, leisure, lifestyle (including sporting) precinct that will contribute to Penrith as a regional city;
- b) Deliver a balanced social, economic and environmental outcome; and
- c) Protect and enhance the public domain.

E13.10: The Panthers Penrith Precinct relationship to Penrith City Centre



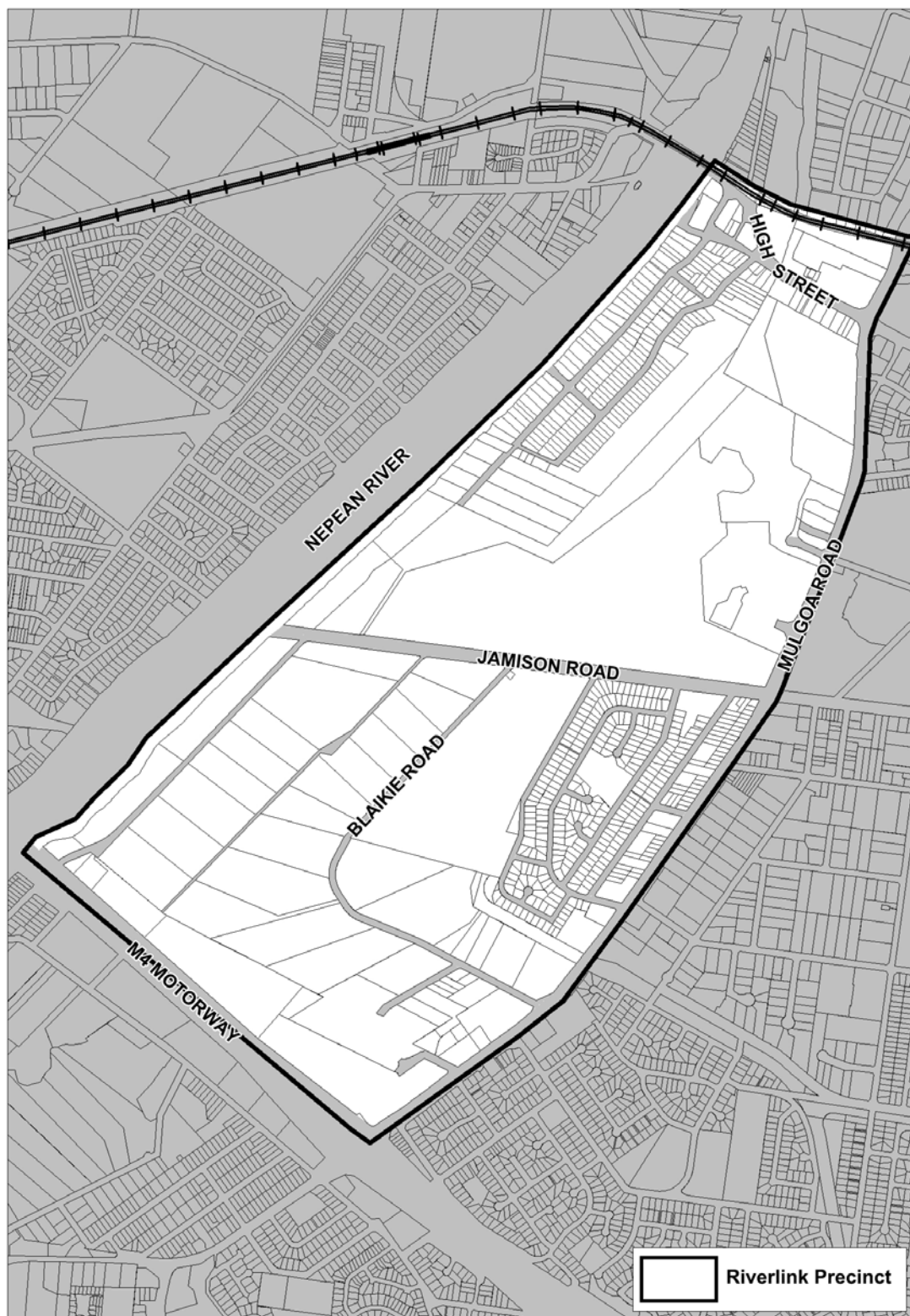
13.5.2. Riverlink Precinct Plan

The Panthers Precinct lies within the area considered in the Penrith Riverlink Precinct Plan (adopted by Council 5 May 2008) – a vision plan for the area on the eastern bank of the Nepean River between the Main Western Railway Line and the M4 Motorway (Figure E13.11). It includes the area known as Blaikie Road and Tench Avenue, south of Jamison Road and identifies locations and types of future activity nodes, view corridors, key gateway locations and connections for the precinct including the Concept Plan area.

The Riverlink Precinct Plan has the broad goal of creating a living, entertainment and working hub to link the City Centre to the Nepean River. It seeks to create a cohesive and well-connected precinct by:

- a) Enhancing and activating Mulgoa Road as a significant approach to Penrith City Centre
- b) Reinforcing key intersections as gateways to the Precinct and the Penrith City Centre
- c) Creating a clear and legible public domain framework of streets and open space
- d) Creating an exciting core of entertainment, leisure and lifestyle uses around the existing club
- e) Incorporating sustainability best practice
- f) Connecting Riverlink pathways with the Great River Walk
- g) Encouraging views of the Blue Mountains from the public domain
- h) Encouraging design excellence
- i) Improving connectivity through the Precinct
- j) Enhancing Peachtree Creek with the planting of indigenous riparian vegetation.

Figure E13.11: The Riverlink Precinct



13.6 PANTHERS PENRITH PRECINCT VISION

13.6.1. Panthers Penrith Precinct Vision

Figure E13.12: Panthers Penrith Illustrative Concept Plan showing indicative land uses





1. Entertainment Uses



2. Outlet Retail



3. Multi Use Facility



4. Commercial Uses



5. Cafes and Restaurants



6. Medium density housing

The Panthers Penrith vision is to create a vibrant entertainment, leisure, lifestyle and sporting precinct that offers a range of activities to attract a diverse mix of locals and intrastate, interstate and international visitors.

Panthers Penrith Precinct will be a dynamic and sustainable place, providing a new workplace, day and night-time entertainment, a new and different shopping experience, food and beverage opportunities, conferencing and accommodation. It will be linked to the Penrith City Centre by public transport, pedestrian and cycle pathways.

In addition to building on the Panthers Penrith Precinct as a core entertainment, leisure and lifestyle offer for the region, the plan aims to provide open space and access that will benefit the wider community and to contribute to Penrith's role as a regional city. The illustrative plan developed for the precinct (Figure E13.12) shows the proposed concept with the anticipated building footprint.

The Panthers Penrith Precinct will enable better integration with and connection to neighbouring lands and will facilitate improved management of precinct-wide issues such as flooding. The regionally important Riverlink will be incorporated into the structure, providing a key missing pedestrian and cycle connection between the Nepean River and the city centre. In addition, the needs of adjoining sites have been taken into account.

The Panthers Penrith Precinct is to be a pedestrian oriented, quality-landscaped and urban public domain with equitable access throughout the precinct for pedestrians, public transport, cyclists and cars. The new landscaped public domain is to improve amenity for workers and residents of the nearby areas in addition to providing convenient and logical internal linkages.

13.6.2. Precinct Objectives

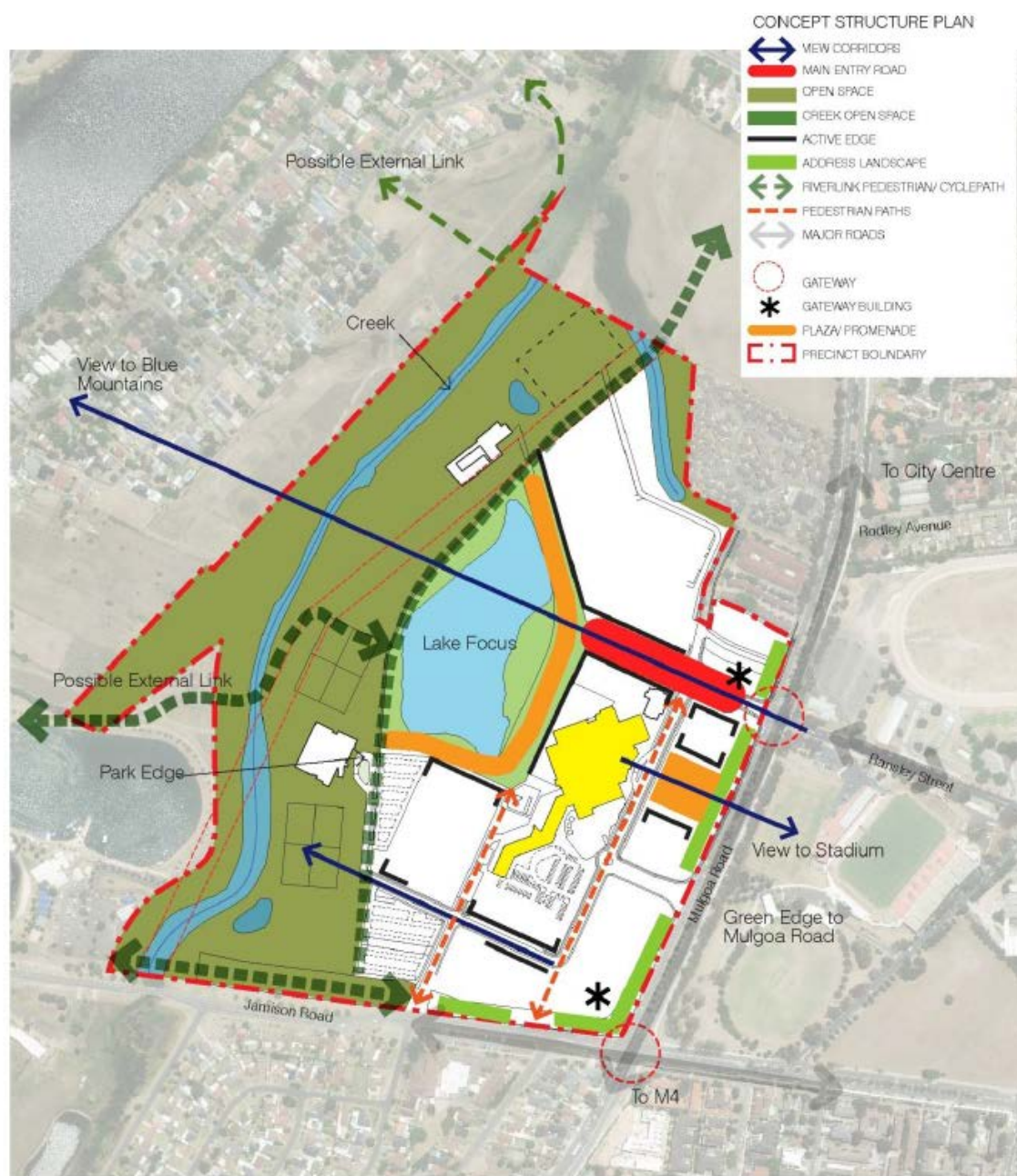
- a) To facilitate the development of the place by promoting redevelopment and urban sustainability;
- b) To promote quality urban design, architectural excellence and environmental sustainability in the planning, development and management of the place;
- c) To create a high quality public domain and ensure development integrates and relates to the public domain;
- d) To provide for mixed use development (entertainment, limited retail, hotel, campus style office development, residential, seniors living, multi-use events /exhibition) which provide high levels of amenity for occupants and visitors;
- e) To provide high levels of accessibility within Panthers Penrith, connecting significant activity nodes, public open space and surrounding residential and mixed use areas;
- f) To encourage development within Panthers Penrith that gives primacy to the public domain and creates an attractive and vibrant centre;
- g) To encourage integration of the existing Panthers Club with residential and non-residential land uses and improved access to transport facilities;
- h) To ensure that development at Panthers Penrith is consistent with the desired future character of the precinct and sub-precincts as described in the following section;
- i) To provide clear connectivity through the site and to the surrounding neighbourhood;
- j) To ensure that view corridors are maintained to the lake and Blue Mountains escarpment;
- k) To provide the framework to facilitate and encourage the use of public transport, safe pedestrian and cycle movement and vehicular movement;

- l) To create a sensitive buffer between the development within the precinct and neighbouring properties, where required; and
- m) To maximise opportunities for pedestrian activities around the lake at the centre of the precinct to create an active promenade and waterside edge and allow for lakeside circulation.

13.7 URBAN FRAMEWORK

13.7.1. Structure Plan

Figure E13.13: Panthers Penrith Structure Plan



A. Background

A new public domain defined by streets and blocks and interface between buildings and the lakeside will create new site connectivity, links to existing surrounding areas and safe and legible access for pedestrians, cyclists, public transport, cars, trucks and service vehicles.

The Structure Plan is based around the creation of a new integrated street network that will be designed to Penrith Council standards. Cycle paths will be provided in appropriate

locations in the open space network. The creek open space corridor will be activated by the construction of a new road along the western edge of the site known as the Riverlink.

The plan has been developed to accommodate a range of flexible uses within a new framework of roads and open space opportunities. It allows for a variety of complementary uses to be developed on the site over the next 20 years.

The landscaped public domain will improve amenity for workers, visitors, patrons and residents of the nearby areas in addition to providing convenient and clear internal linkages. Key links through the site will acknowledge views to the Blue Mountains and connections to the River.

- **B. Objectives**

- a) To create a new entertainment, leisure, lifestyle (including sporting) precinct that contributes to Penrith's role as a regional city;
- b) To create a well defined and accessible public domain that is connected to the CBD, river and recreation system;
- c) To achieve active street frontages with good physical and visual connections between buildings and the street;
- d) To provide for pedestrian comfort, amenity and protection from weather conditions;
- e) To provide for quality landscape to contribute to user amenity and a sustainable urban environment;
- f) To maintain and enhance important views to surrounding natural landscape features, including the lake and the Blue Mountains;
- g) To establish the scale, dimensions, form and separation of buildings appropriate for the setting;
- h) To develop a built form and density that reflects the location and proximity to the city centre;
- i) To protect and enhance the amenity of residents in the vicinity of the development; and
- j) To create an active and well defined lake's edge that is accessible and provides a central focal point for the site.

C. Controls

Future development is to be consistent with Figure E13.13 and is to:

- 1) Develop a public domain based on the lake's edge, new streets and blocks.
- 2) Extend key streets from the existing network.
- 3) Facilitate access to the Peachtree Creek corridor.
- 4) Create view corridors that open views to the Blue Mountains.
- 5) Focus activity around the lake's edge and Ransley Street.
- 6) Create a high quality address to Mulgoa Road.
- 7) Develop high quality buildings that in particular respond to gateway locations.
- 8) Create new pedestrian and cyclist links along the Riverlink corridor.

13.7.2. Landscape Structure

Figure E13.14: Landscape Structure



A. Background

The plan seeks to create a vibrant new destination with integrated public domain, streetscapes, built form and sophisticated coordinated range of finishes, furniture, lighting, street trees and landscaping. Water Sensitive Urban Design (WSUD) features, signage systems, canopies and other public domain elements will add to the detailed resolution of the public domain.

The Landscape Structure seeks to integrate the natural and civic areas of the site through strong landscape links from the riparian areas back along the tree lined roadways to the Mulgoa Road frontage. Proposed landscape components and strategies that underpin the Landscape Structure include:

- a) Enhancement of the linear north-south open space and riparian corridor that links Penrith and the Riverlink Precinct Plan structure of pedestrian and cycleway connectivity, and strong integration of the surrounding area with the Panthers precinct.
- b) Reinforcing the central lake as a focal landscape element, and creating an active lakeside that provides a high level of amenity within the precinct.
- c) Create a civic identity through a parkland and playing fields area that extends west of the lake to integrate and transition between the developed eastern portion of the site, and the open space and riparian zone to the west of the site.
- d) Acknowledgement of and a response to the site flooding events through landscape, environmental, engineering, built form and site management elements.
- e) Framing western views to the mountains.
- f) Creation of shade in summer and solar access in winter to key public spaces.
- g) Provision of a landscaped interface with Mulgoa Road.
- h) The creation of defined site entries that integrate with new public domain areas and open spaces to the north, south and west.
- i) Development of an interesting and culturally engaging component to connect to the Great River Walk along the Nepean River.
- j) Create a landscaped precinct that integrates with the precinct's surrounds.
- k) The detail design response of all landscape areas is to be the subject of on-going consultation with Council in order to develop a specific Panthers precinct identity and landscape character, while also referencing the existing open space and urban design palette of Penrith.

B. Objectives

- a) To ensure landscaping is integrated into the design of the precinct and development sites;
- b) To ensure landscape design is flood compatible so that works proposed improve safety and do not adversely flood impact others;
- c) To reinforce and enhance the entries and gateways to the precinct from Mulgoa and Jamison Roads;
- d) To create well designed active and passive recreation areas, open spaces, and lakeside promenade;
- e) To create a well defined high amenity and active lakefront;
- f) To ensure that landscape contributes to the amenity of streets, including shade, particularly to the active streets;
- g) To maintain select view corridors to the mountains and the lake;
- h) To reinforce the city's ecology and biodiversity by using appropriate species for the area;
- i) To improve urban air quality;
- j) To ensure that the use of potable water for landscaping irrigation is minimised;
- k) To incorporate WSUD principles and contribute to the reduction of stormwater runoff; and

- l) To improve the microclimate within the development.

C. Controls

1. General

- a) A detailed landscape/public domain design is to be submitted with a development application. In addition to this section refer to Section C6 of this DCP.
- b) The landscape treatment of precincts within the site is to be developed based on the following controls for open space uses, landscape character and the Landscape Principles for the precinct. Remnant vegetation and riparian areas in the precinct are to be protected and enhanced where possible.
- c) Any significant stands of mature trees are to be assessed and where possible, are to be retained.
- d) The vegetation within the area identified as “Landscape Buffer” on Figure E13.14 is to be retained.
- e) Water management principles are to be incorporated as per the Water Management Section of this DCP.

2. Street Design

- a) Verge planting is to be provided in local streets and full width paving in pedestrian areas with high activity.
- b) New streets in the precinct are to have a strong landscape character with planting of trees consistent with Council policy. East-west street trees are to be predominantly native and north-south streets deciduous.
- c) The street detailing, furniture, lighting and finishes are to be developed to respond to the specific character of the Panthers precinct and its sub-precincts and are to complement the design palette in draft Penrith Public Domain Technical Manual.

3. Lake Edge

- a) The lake edge is to be developed as a pedestrian promenade that links that retail outlet centre to the north, club and club expansion to the east, and multi-purpose facility to the south. The promenade will become a key focus for activity in the precinct and will allow for adjacent land uses to ‘spill out’ to the lake frontages.
- b) The lake edge treatments will appropriately include trees, shade structures, seating and other amenity elements that will encourage gathering and active uses at the water edge. The design is to vary to respond to the adjoining conditions including roadways, the promenade, passive and active recreational areas, development zones and the parkland interfaces:
 - Western edge - predominantly a soft landscape interface with easy transition of slopes back to the adjoining Riverlink pathway and open space areas. The edge provides a future north-south link through the precinct.
 - Eastern and northern edge – a formalised promenade edge to the lakeside that will be the primary focal point of the site, drawing activity from the various uses across the eastern portion of the site.
 - Southern edge – An edge defined by the multi-use facility that allows interaction with the waterfront.
- c) Views of mountains and access to the water are to be key elements in the landscape/public domain design.

- d) The promenade and lake edge is to provide sufficient area to accommodate a range of uses such as festivals, markets, passive and active recreation and interaction with the lake.
- e) The lakefront open space and promenade will accommodate spill over from any multi use facility to the south and is to integrate food, beverage and outdoor dining and recreational opportunities provided by the club expansion and retail outlet centre at the eastern and northern edges of the lake.
- f) Provide pedestrian connectivity from the active eastern part of the precinct to the western edge of the lake.

4. Ransley Street

- a) The Ransley Street character is to be designed as the main entry to the precinct. It is to be lined with active land uses, and lead to the active promenade at the lake frontage.
- b) Wide pavements are to be provided to allow for active adjacent land uses. In particular the southern side is to allow for generous pedestrian circulation and outdoor eating areas. These pavement areas will connect to a lakefront promenade and to parkland to the west and are to be suitable for active uses.
- c) The view corridor is to be maintained along the street to the mountains.
- d) Provide a focal point at the end of Ransley Street to draw visitors to the lake edge and to activate the precinct.
- e) A well designed urban space at the end of the Ransley Street activity zone is to be provided.
- f) The street should be characterised by active uses at ground floor level.

5. Recreational Open Space

- a) Detailed design is to allow parkland areas to transition from high amenity and useable trees-in-grass style parkland, to more densely vegetated areas with strong riparian character and content.
- b) The central visual axis along Ransley Street is to be extended to a visual element across the lake and the parkland.
- c) Areas for services and associated uses should not impact on the functionality or amenity of the recreational precinct.
- d) Parking areas serving the active recreation areas are to be suitably located and are to incorporate suitable landscaping and tree planting.
- e) A plan for the landscape treatment of Peachtree Creek is to be developed by the owners of the creek - Penrith City Council and Panthers Penrith.
- f) Any development application in the Recreational Precinct in regards to Peachtree Creek rehabilitation must take into consideration conditions of previous approval for a golf course on the site.

6. Mulgoa Road Frontage

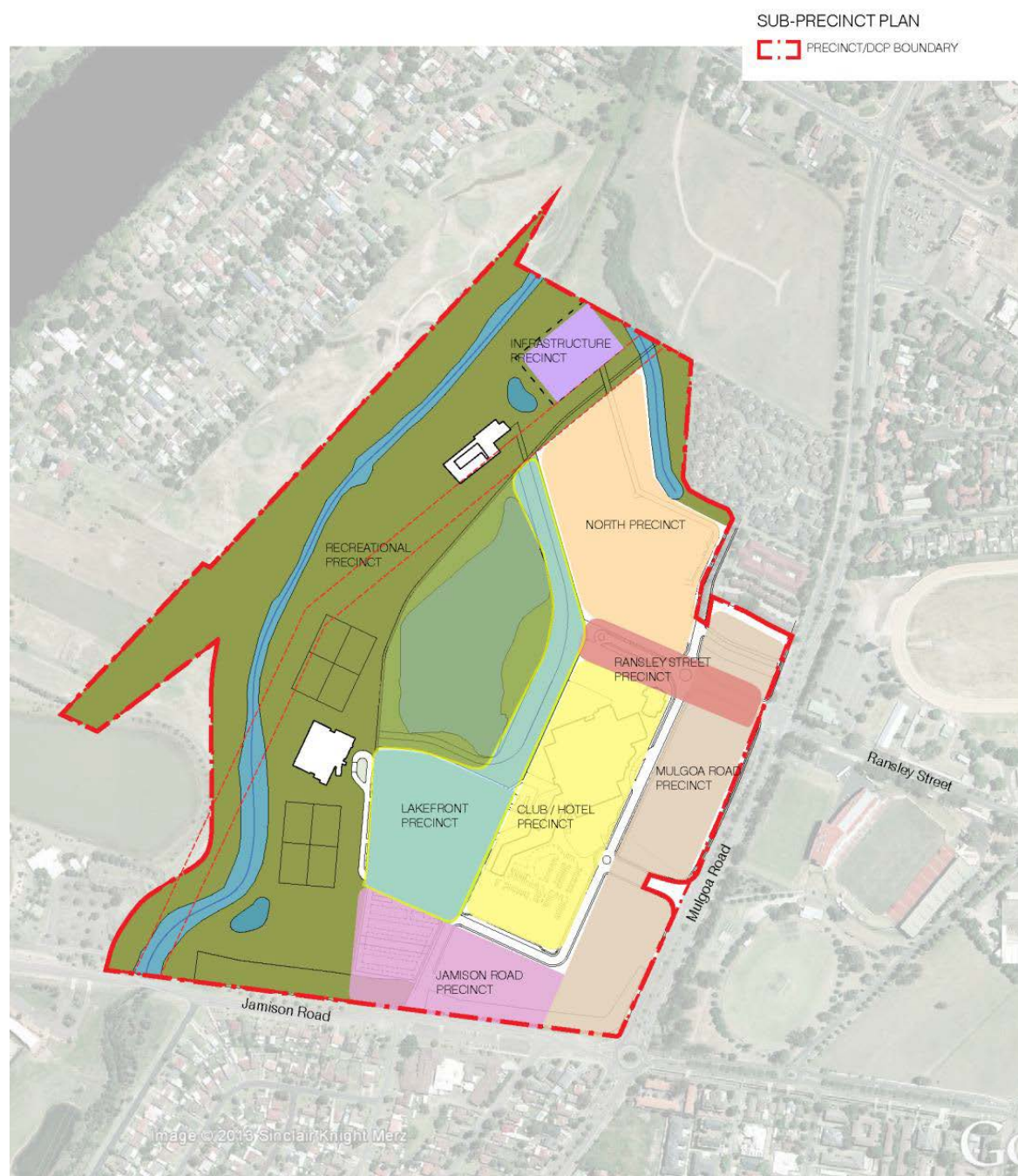
- a) Acknowledging the importance of this major regional roadway, the landscape treatment along Mulgoa Road is to be high quality design and is to be well maintained in the future.
- b) A 5m landscape setback along this frontage is to continue the nearby character of lawns, grasses and low native planting and retain the existing native canopy trees.
- c) Planting is to provide framed and filtered views and exposure to the new buildings along this frontage.

7. Jamison Road Frontage

- a) Jamison Road is to provide a transitional landscape character, continuing the Mulgoa Road landscape character with scattered canopy trees east of the new Harris Street intersection, and a more open parkland landscape character to its west.
- b) A landscape setback is to accommodate overland flow from land to the east.
- c) Landscape east of the overflow at-grade car park along the Jamison Road frontage is to successfully interface with adjoining playing fields and Peachtree Creek open space.

13.7.3 Sub Precincts

Figure E13.15: Sub Precincts



A. Background

The Panthers Precinct comprises a series of integrated sub precincts, each with a distinctive character and role. The sub precincts are defined by varying uses and built form, which are interconnected through the key focal points, being the lake's edge, Ransley Street and the site's street network.

Within each sub precinct there are a wide range of uses possible. These uses are not necessarily limited to a particular sub precinct however development must address the

envisaged character of each sub-precinct. It is the mix of these uses that provide a net community benefit to Penrith in delivering an entertainment, leisure and lifestyle precinct.

The following is the envisaged character and range of indicative uses for each sub precinct:

1. Ransley Street sub precinct

Ransley Street links the main entry from Mulgoa Road west to the Lakefront and Recreation precinct. This sub precinct, centred on Ransley Street will be a pedestrian oriented place, is linked by a range of active uses on both sides at street level.

The Ransley Street alignment and the alignment of buildings on either side provide a vista to the mountains, visible on entry to the Panthers Precinct as well as from Ransley Street to the east of Mulgoa Road. It will be an active street that will become a destination and strong entry to the precinct.

Indicative land uses within this sub precinct include a mix of uses comprising staged retail (limited to 12,500m² GFA), entertainment and possibly residential uses above. These sites are seen as having active edges that encourage both a vibrant street life and a rich public domain. Cafes, restaurants and ground level retail will generate activity through the day and into the evening as the Precinct becomes a unique urban environment.

2. Mulgoa Road sub precinct

Mulgoa Road is one of the major entries to Penrith City and therefore the sub precinct fronting it is an important 'front door' and gateway to the city itself.

This frontage is currently characterised by a 'green' landscaped edge to both sides of Mulgoa Road. It is proposed to strengthen this frontage with a well defined built form that reinforces the landscape setback.

While buildings within the Mulgoa Road precinct will not have direct vehicle access off Mulgoa Road, the buildings are to address this frontage, not 'turn their backs' on Mulgoa Road.

Open space between the Club and Mulgoa Road is to enhance the clubs address to the street. This open space is to be defined by a strong built edge to the north and south and will open up the site to its surrounds.

The north-west corner of the Jamison and Mulgoa Road intersection will be highly visible and will require high quality architectural and landscape design.

Indicative land uses include:

- a) Campus-style office development that is differentiated from, but complements, office space in the Penrith City Centre.
- b) A mix of uses that attract and sustain a vibrant and active day and night time economy.
- c) Sporting and recreation uses.

3. Club/Hotel sub precinct

There are existing buildings and facilities associated with the Club and Hotel within this sub precinct.

A key objective of the Panthers Precinct, and reinforced in this sub precinct, is to create a series of connections between this core and its surroundings including east to Mulgoa Road, west to the open space and recreation facilities as well as to the north towards the city.

Future development and/or expansion of the existing Club and existing Hotel should take advantage of views over the lake and towards the Blue Mountains.

It is proposed that new buildings will improve the activation of the public street edges of this precinct including the relationship with new Ransley Street area and the western edge.

Indicative land uses may include:

- a) Extension to the existing Club.
- b) Indoor/outdoor dining will be a vibrant and exciting new destination for Penrith.
- c) Food and beverage outlets and live entertainment venues.
- d) Hotel uses with synergies with conference and meeting events.
- e) A mix of uses that attract and sustain a vibrant and active day and night time economy.
- f) An aquatic centre.

4. Lakefront sub precinct

This sub precinct sits between the existing club core and recreation and open space area to the west. It is therefore an important linking sub precinct as well as the primary focus for pedestrian activity and active uses that 'spill out' to the lake, and the precinct's open space corridor. The Lakefront should also provide good pedestrian amenity.

The sub precinct will activate both the open space generally and the Lakefront in particular providing an excellent outlook to open space and the mountains.

Indicative uses may include:

- a) A Multi use events/ exhibition centre which would be a significant asset for Penrith and the region. The facility would host conferences, exhibitions, sporting events and concerts. Associated uses may include a gymnasium, sports medicine facility, café, community services and supporting facilities.
- b) Serviced apartments/ hotel uses with synergies with conference and meeting events.
- c) Café/restaurants to activate the Lake edge.

5. Jamison Road sub precinct

This Precinct is the southern edge of the Panthers site and is immediately north of Jamison Road and the largely residential areas to the south.

The precinct also addresses the open space recreational area to the west and a range of precincts to the north and east.

Indicative land uses may include:

- a) Residential development to provide additional activity and year round activation of the Precinct. A range of options exists on the site for medium and higher density residential and aged housing. Planning will take advantage of water and open space views with residents enjoying the range of uses and facilities within the precinct.
- b) Car park to support adjoining development.

6. North sub precinct

This sub precinct sits immediately north of Ransley Street and is located adjacent to the open space recreational area and lake.

The sub precinct creates a transition from the Panthers site to the Council owned 'Carpenter's site' that sits to the north which then connects to the Penrith City.

Retail uses within the zone will contribute to the activation of the Ransley Street precinct and the lakefront.

Indicative land uses may include:

- a) A retail outlet centre (limited to 25,000m² net usable floor area) which focuses on discounted and discontinued retail lines has been proposed in concept planning for the

precinct. The scale of the centre and its parking requirement will be subject to feasibility studies and traffic assessment. Rather than an internalised mall, there is an opportunity for the centre to explore the provision of outdoor dining and lakefront retail and take advantage of views over the lake and to the Blue Mountains.

- b) A mix of uses such as cafes, restaurants and ground level retail will generate activity through the day and into the evening as the Precinct becomes a unique urban environment.

7. Recreational sub precinct

The recreational sub precinct is the largest precinct on the Panthers site, occupying almost half the entire area. The precinct includes Peachtree Creek and the Riverlink which connects green space from Jamison Road northwards to Penrith City Centre via Council's 'Carpenter's site'.

This sub precinct will be characterised by landscaping, creek, lake and outdoor playing fields. The fields will be integrated into the landscape design to create distinctive linear parkland with a water focus at the termination of Ransley Street.

Indicative land uses may include:

- a) Sports facilities available to the wider Greater Western Sydney community as well as to elite training to allow promotion of excellence and participation.
- b) A range of active and passive recreation uses are to be accommodated including playing fields for a range of sporting codes.
- c) Temporary markets and community events.

8. Infrastructure sub precinct

Major services on the site will be located on land in the north of the precinct. High tension lines run through the site and it will be the location for substations and other service uses. Landscape buffers to the road, creek and adjoining site will be provided as necessary. This sub precinct can accommodate site maintenance facilities as required.

B. Objectives

- a) To create distinctive places activated by a mix of uses compatible with each sub precinct;
- b) To create a framework that is flexible enough to accommodate a changing range of uses over time and respond to market opportunities;
- c) To facilitate the orderly development of the precinct;
- d) To encourage high quality urban design, architectural excellence and environmental sustainability;
- e) To minimise potential conflicts and achieve compatibility between different uses;
- f) To guide development of sub-precincts across the site;
- g) To ensure that development contributes to the overall creation of a destination within Penrith;
- h) To plan uses in the most appropriate locations; and
- i) To preserve views to surrounding places where identified.

C. Controls

1. General

- a) A development application within each sub precinct is to consider the desired character of that sub precinct and the Panthers Precinct.

2. Mulgoa Road sub precinct

- a) Any proposed residential uses are to be located at the southern end towards Jamison Road and north of Ransley Street within this sub precinct.
- b) Development is to take advantage and respond to the high visibility of the Mulgoa Road frontage. A high quality architectural response is required for development along the Mulgoa Road frontage and is to address this road.
- c) Campus style office development is to complement office space within the City Centre through features such as low rise, large floor plate development.

3. Club/Hotel sub precinct

- a) Future expansion of the existing club is to take advantage of views to the lake and Blue Mountains and allow for associated outdoor areas for club use.
- b) Pedestrian linkages through the sub precinct are to be provided.

4. Ransley Street sub precinct

- a) Ransley Street is to be developed as the main street to the Precinct with a range of active street level uses including restaurants and cafes. The sub precinct is to support uses to the immediate north and south of Ransley Street.
- b) A focal point is to be provided at the lakefront end of the street to create a sense of arrival.
- c) Development is to facilitate connectivity between Ransley Street and the Stadium to connect patrons between the two sites and generate activity by providing an attractive pedestrian environment.
- d) Development in Ransley Street is to take into consideration views towards the lake and the Blue Mountains.

5. Mixed Use Controls (not limited to Ransley Street sub precinct)

- a) Developments with a mix of uses must have flexible building layouts which allow greater adaptability of the floor area of, or tenancies on, the first floor of a building above the ground floor.
- b) Development with a mix of uses is to have a minimum floor to floor height of 3.6m in order to provide for flexibility of future use.
- c) The commercial and residential activities of the building are to have separate service provision, such as loading docks and residential access and servicing needs.
- d) Residential pedestrian and vehicular entries shall be clearly marked and provide direct access to the street. Pedestrian entrances are to address the main streets.
- e) Commercial and residential uses should have clearly separate pedestrian and vehicular entries and internal vertical circulation.
- f) Security access controls must be provided to all entrances into private areas, including car parks and internal courtyards.
- g) Buildings are to front onto major streets with active uses.
- h) Blank building walls with frontage to streets or open space are to be avoided.

6. Lakefront sub precinct

- a) A landmark building (up to 32m) is to be located on the lake adjacent to the Ransley Street termination.
- b) Develop an accessible frontage to the lakefront. Ensure shade through the provision of trees and shade structures.
- c) A well designed landscaped promenade is to be developed on the lakefront, connecting the retail outlet centre, the Club and the multi-use facility.

7. North sub precinct

- a) Large scale retail outlet centre use in the sub precinct is to explore the possibility of open air shopping and must develop a strong relationship to the lake and Ransley Street activity zone.
- b) Any uses within this sub precinct are to consider the privacy and amenity of adjoining residences.
- c) A landscape buffer is required at the interface with existing adjoining residential development.

8. Recreational sub precinct

- a) On-grade parking areas are to be located adjacent to sports fields with suitable landscaping so as to minimise visual impact and to provide shade.
- b) Development within the Recreational sub precinct will be required to demonstrate compatibility and flood conveyance and must not adversely affect the existing flood conditions.

9. Jamison Road sub precinct

Residential (not limited to Jamison Road sub precinct)

- a) In addition to other controls in this DCP, State Environmental Planning Policy No.65 – Design Quality of Residential Flat Development (SEPP 65) and the accompanying Residential Flat Design Code apply to residential development in the Panthers Penrith Precinct including flats, multi dwelling housing, any residential component of a mixed use development, and serviced apartments that are strata titled.
- b) In particular, Parts 2 and 3 of the Residential Flat Design Code will apply to the precinct and include provisions for the following:
 - Site configuration including deep soil zones, fences and walls, landscape design, open space, orientation, planting on structures, and stormwater management
 - Site amenity including safety and visual privacy
 - Site access including building entries, parking, pedestrian and vehicle access
 - Building configuration including apartment layout, balconies, ceiling heights, flexibility, ground floor apartments, internal circulation, mixed use and storage
 - Building amenity including acoustic privacy, daylight access and natural ventilation
 - Building form including awnings, facades and roof design
 - Building performance including energy efficiency, maintenance, waste management and water conservation.
- c) In addition to controls for apartment mix in Part 3 of the Residential Flat Design Code, the following controls apply:

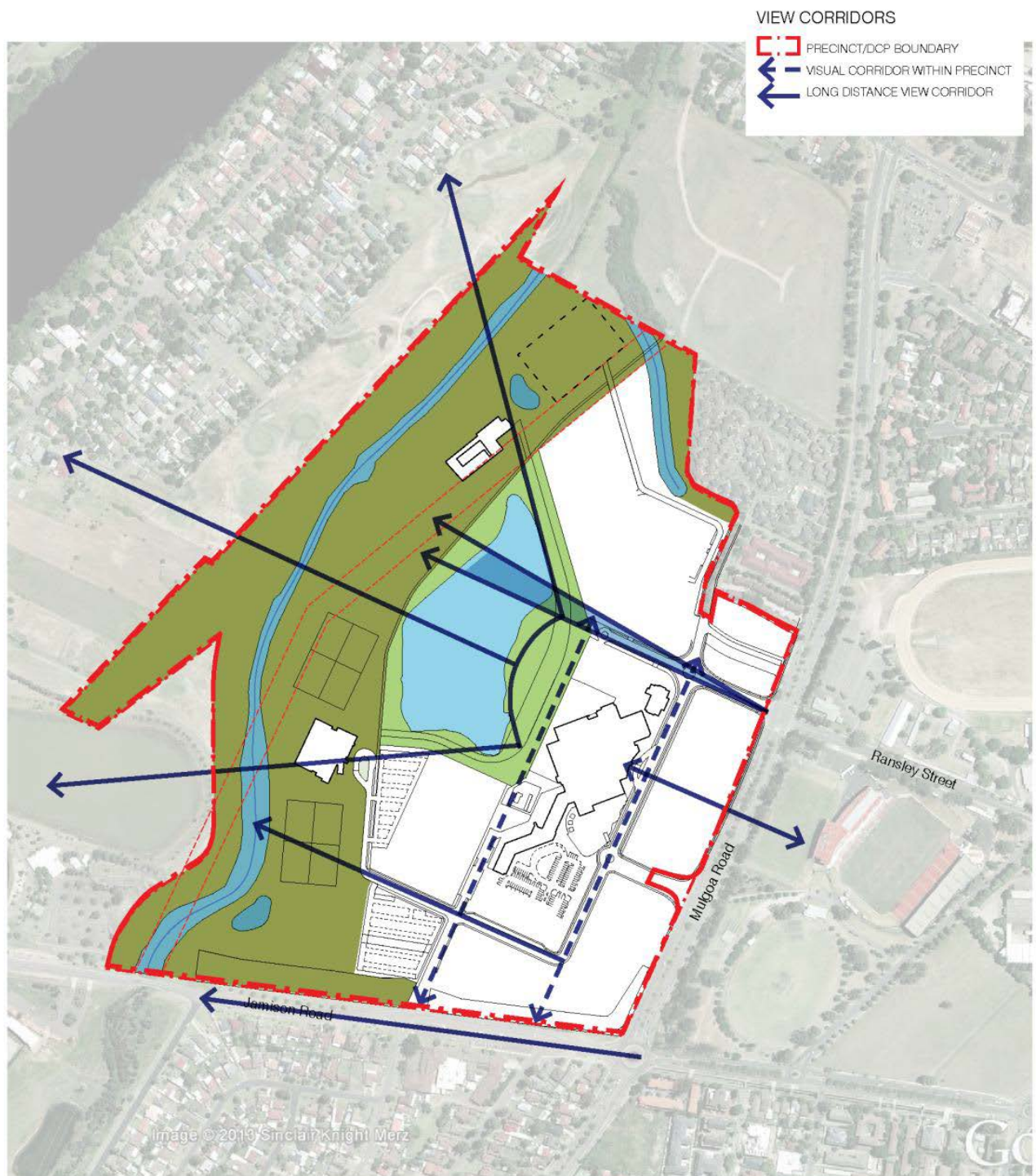
- i) Where residential units are proposed at ground level in a zone nominated as an Active Frontage, a report must be provided with the development application demonstrating how future non-residential uses can be accommodated within the ground level design. The report must address:
- Access requirements including access for people with a disability;
 - Any upgrading works necessary for compliance with the Building Code of Australia; and
 - Appropriate floor to ceiling heights.
- ii) 10% of all dwellings or a minimum one dwelling, whichever is the greater, must be designed in accordance with the Australian Adaptable Housing Standard (AS 4299-1995), to be capable of adaptation for people with a disability or elderly residents.
- iii) Where possible, the mandatory adaptable dwellings shall be located on the ground floor. Adaptable dwellings located above the ground level of a building may only be counted towards the minimum required where lift access from the basement is available within the building.
- iv) The development application must be accompanied by certification from an accredited Access Consultant confirming that the adaptable dwellings are capable of being modified, when required by the occupant, to comply with the Australian Adaptable Housing Standard (AS 4299-1995).
- v) Car parking and garages allocated to adaptable dwellings must comply with the requirements of the relevant Australian Standard regarding parking for people with a disability.

10. Infrastructure sub precinct

- a) Development must preserve amenity of existing adjoining residences and a landscape buffer must be maintained.
- b) Landscaped setbacks shall be provided from the river walk edge to screen and minimise visual impacts from any utilities locating within this sub precinct.
- c) Development application for infrastructure is to consider any visual impacts.

13.7.4 Views

Figure E13.16: Views



A. Background

There are a number of existing distant views, especially from the eastern edges, looking west across the site. These views are important to the identity of the region and characterise this area of Penrith.

The Blue Mountains can be seen from various points along Mulgoa Road and along the Ransley Street alignment at the Panthers site. There are important views between the Panthers Club and the Penrith Football Stadium across Mulgoa Road. Figure E13.16 shows the views corridors on the Site to the mountains and between the Panthers Club and the Penrith Football Stadium.

B. Objectives

- a) To maintain identified views and vistas;
- b) To reinforce the visual connection between Mulgoa Road and the mountains;
- c) To protect and provide visual connectivity between sub precincts and towards the site recreational areas;
- d) To improve legibility and sense of place from within the site;
- e) To visually connect the Precinct to the wider area; and
- f) To create new view corridors where possible, to maximize views over the lake and towards the Blue Mountains.

C. Controls

- 1) Development is to preserve major views /vistas as identified on Figure E13.16.
 - a) Extension of Ransley Street view corridor to the Blue Mountains
 - b) The view from the Club entry to the Stadium
 - c) Views from the eastern edge of the lake to the Blue Mountains.

13.7.5 Public Art Strategy

A. Background

Panthers Penrith is an entertainment, leisure, lifestyle and sporting precinct with a unique sense of place. It is a key destination for the Penrith Community and the Western Sydney region that will be further realised by the vision of the master plan. The provision of public art within open space is an important step in contributing to this sense of place in the precinct and the creation of an enlivened public domain.

Public art should be developed with the engagement of professional artists, and reflect and interpret matters of local significance.

An art strategy for the precinct is to be developed that responds to the architectural character and environment of the Panthers Penrith precinct through the staged integration of public art with public spaces as the precinct is delivered.

B. Objectives

- a) To integrate urban art within the public domain and property development;
- b) To position Penrith as an internationally renowned arts destination;
- c) To encourage excellence in the development of urban art initiatives;
- d) To create opportunities for landmark statements in the Penrith landscape; and

- e) To enrich the public domain through the installation of artworks in the open space network, particularly around the lakeside promenade.

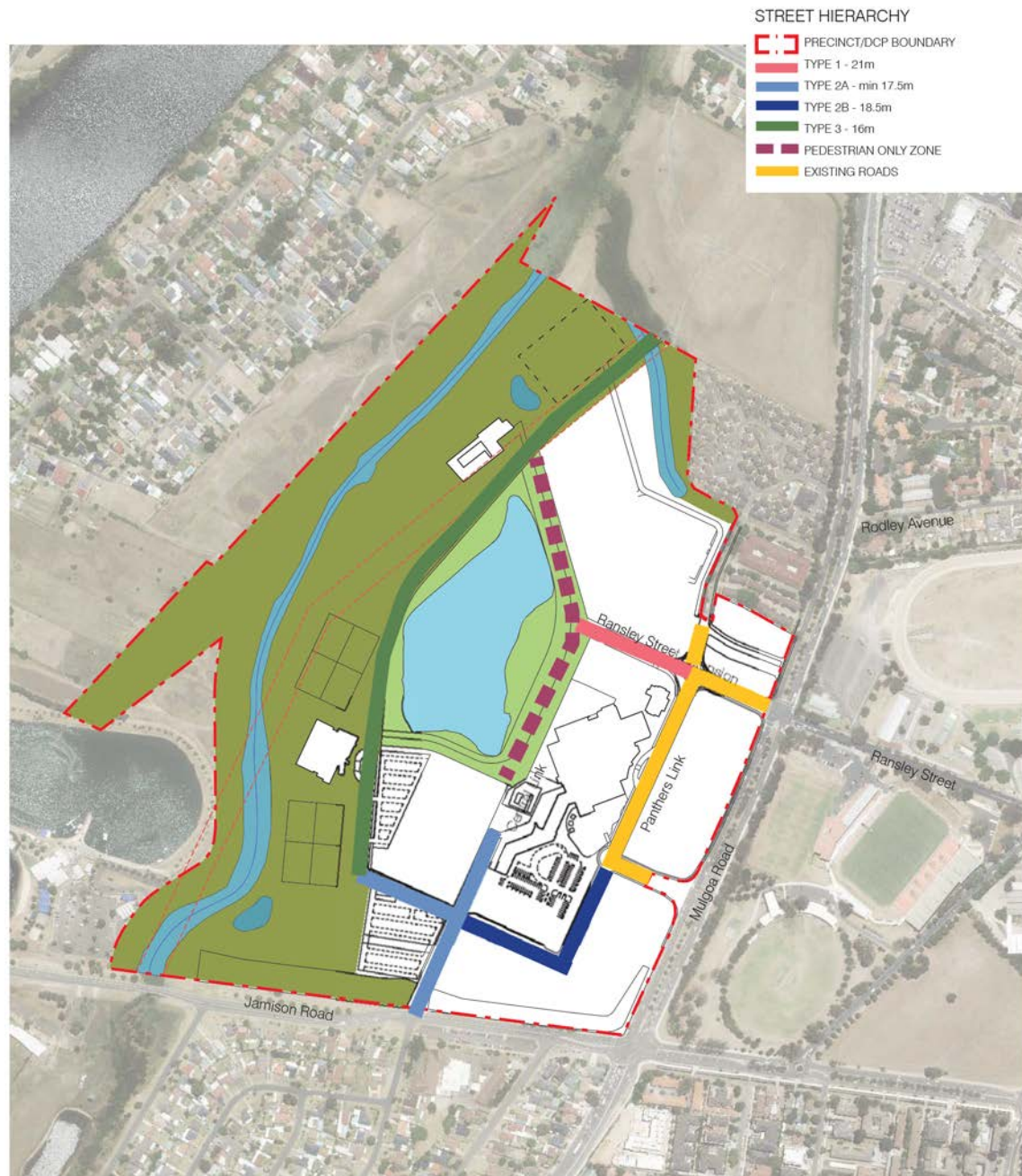
C. Controls

- 1) A Public Art Strategy is to be prepared by a specialist art consultant for the whole Precinct prior to approval of the first major building development application \$5 million in value.
- 2) The Public Art Strategy is to be relevant and site specific for the precinct and is to address:
 - a) Context of precinct within Penrith and the Penrith Community
 - b) Community / public artist engagement
 - c) Location of installations/art work
 - d) Themes and narrative
 - e) Procurement strategies
 - f) Maintenance strategies
 - g) Decommissioning strategies.

13.8 CONNECTIVITY

13.8.1. Street Design and Character

Figure E13.17: Street Hierarchy



A. Background

The Panthers Penrith Precinct currently has three existing streets: Ransley Street, Panther Place and the road between Ransley Street and Panther Place in front of the Club. The expanded street network encourages pedestrian permeability, public transport, cycle and local vehicle and service access and movement across the Site and to adjoining places.

A clear hierarchy of street types is proposed throughout the site.

The street character is local in nature with street tree planting used to reinforce the character of the street. Generous footpaths and setbacks allow for cafes and outdoor seating opportunities. Consistently spaced street tree planting will create a generous landscape treatment framing the street, providing shade to the street and complementing the green corridors of Mulgoa Road and the north-south open space green corridor.

It is anticipated that Panthers Penrith will have a variety of new streets:

Ransley Street extension (Type 1 - Primary Street)

The Ransley Street extension provides the primary point of address to the Site, linking Mulgoa Road physically and visually to the Site and to the mountains beyond. The opening up of this link will also create a memorable sense of arrival. The interface and intersections of this link create the most important address points to the Site. Its character will be active with some outdoor seating, and with buildings built to the boundary. It will provide an appropriate prelude to the vibrancy of the lake promenade and adjacent uses.

Panthers Link (Existing Road to remain)

The Panthers Link is currently the primary north-south vehicular link within the Site. This road will be maintained with public domain improvements. The public bus will use this street with the front entry to Panthers the main stop within the Site.

Central Link (Type 2 Secondary Street)

The Central Link roads will provide vehicular access within the Site, from Jamison Road at the south to Panthers Link. They will be designed to accommodate events and exhibition traffic and service vehicles.

Peachtree Creek Edge & Riverlink (Type 3 - Park Edge Street)

The Peachtree Creek edge will be defined by a low volume north-south vehicular link through the Site from Jamison Road at the south, past the western edge of the existing lake to the northern boundary of the site. A footpath and cycleway will be developed the full length of the north-south corridor providing an essential part of the link from the CBD leading to the Nepean River. The street will be strongly pedestrian focussed but it will accommodate slower vehicular traffic with the ability to close the street if required for events or at other times.

B. Objectives

- a) To create a quality public domain that provides legible, safe and comfortable street environments, in terms of daylight, scale, sense of enclosure and wind mitigation;
- b) To ensure good circulation within the site;
- c) To encourage sunlight access to new public spaces; and
- d) To facilitate view corridors to the Blue Mountains.

C. Controls

- 1) All streets will be constructed in accordance with Council's standards.

2) The dimensions of each road as noted in Figure E13.17 will be:

Road Type	1	2	2a	3
	Primary Street	Secondary Street (without parking)	Secondary Street (with parking)	Park Edge Street
Total width	21.0 m	17.5m	18.5m	16m
Road width	7.0 m	10.5m	6.5m	6.5m
Parking	2 x 2.5 m	NA	2 x 2.5 m	1 x 3.0m
Footpath & verge	2 x 4.5m	2 x 3.5m	2 x 3.5m	1 x 6m

3) Street sections are illustrated in Figures E13.18-21.

Figure E13.18 Primary Street – Type 1

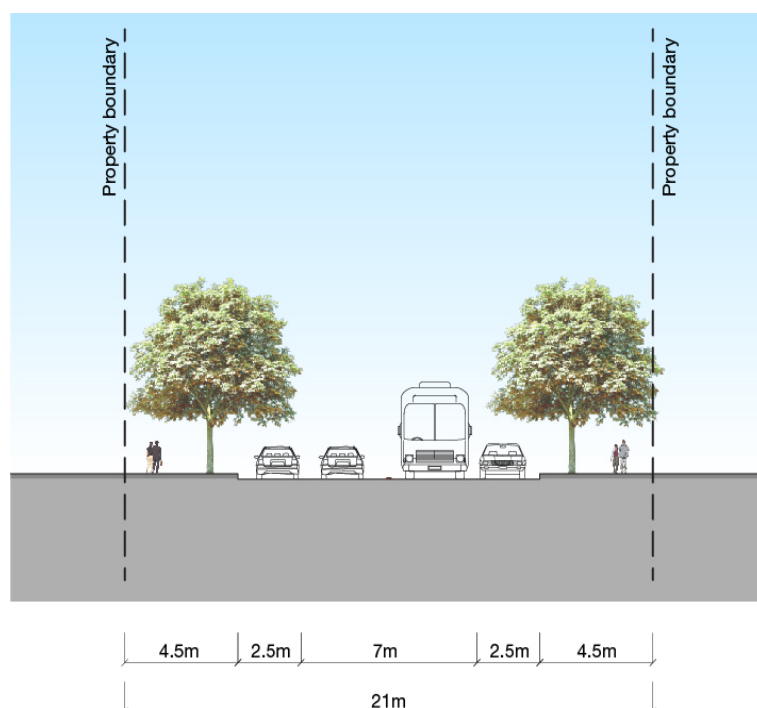


Figure E13.19 Secondary Street (without parking) – Type 2

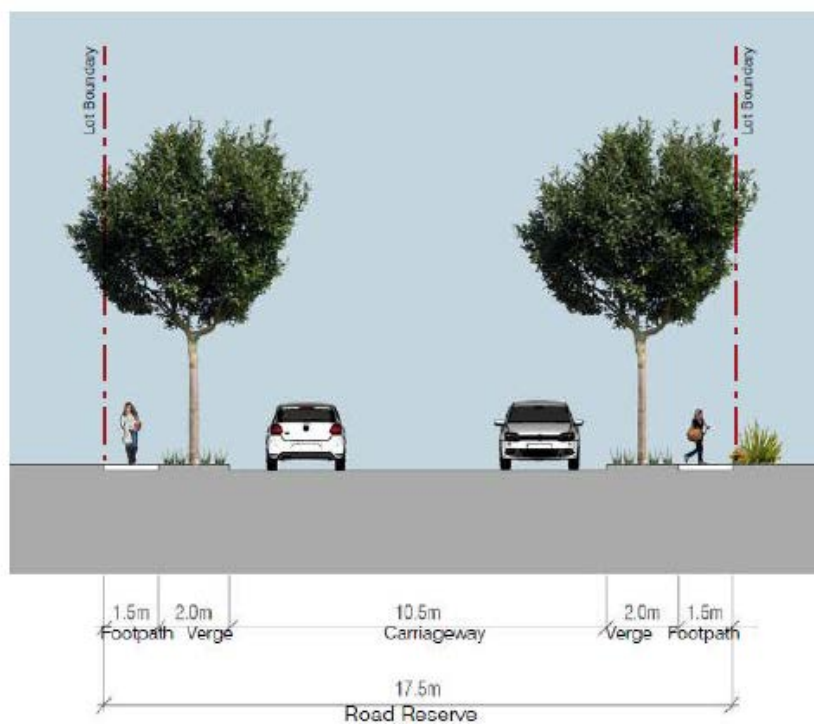


Figure E13.20 Secondary Street (with parking) – Type 2a

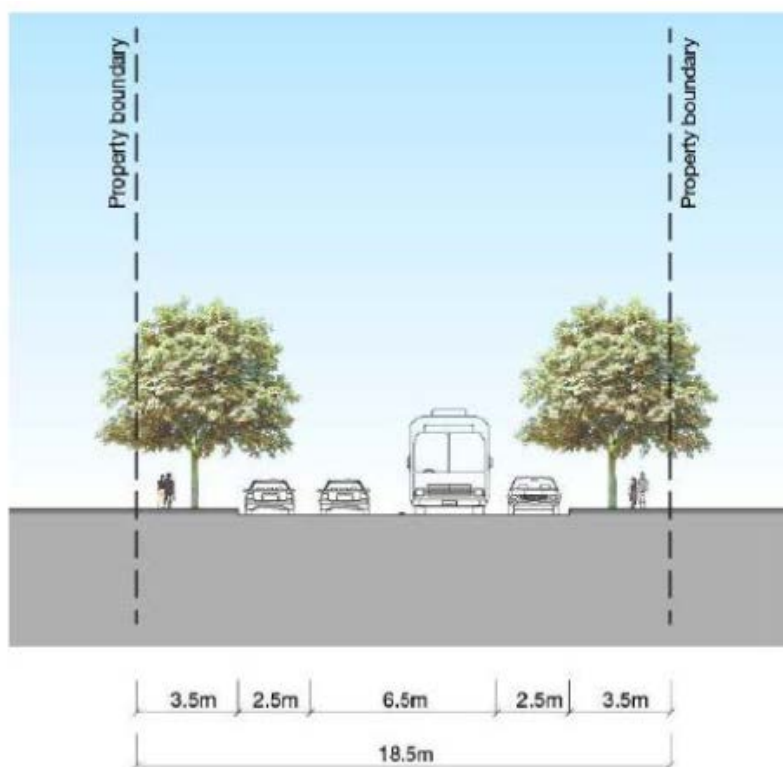
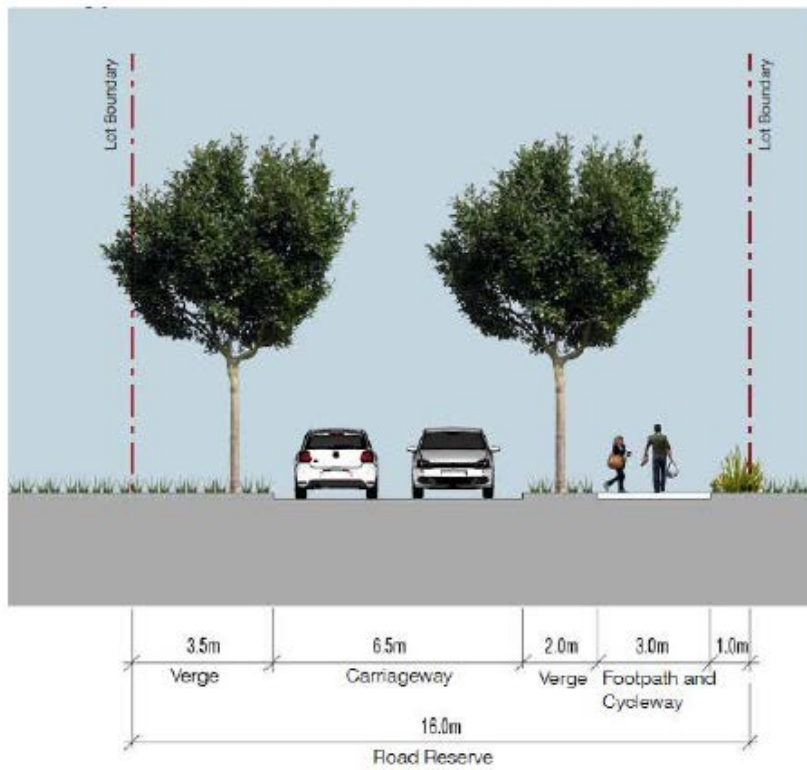
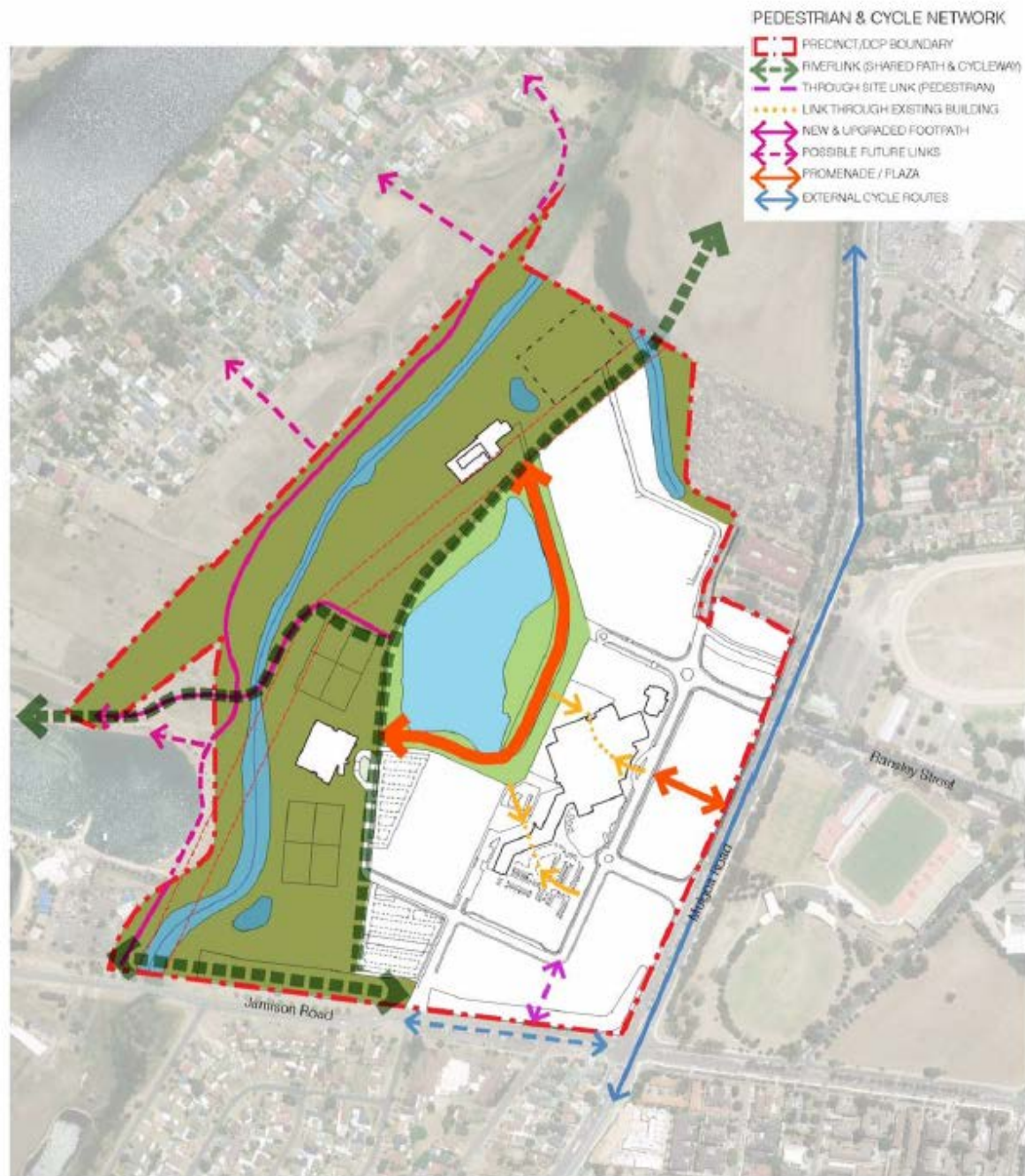


Figure E13.21: Park Edge Street – Type 3



13.8.2. Pedestrian and Cycle Network

Figure E13.22: Pedestrian and Cycle Network



A. Background

The new road network forms the basis of both pedestrian and cycle access within the site. Generous footpaths accommodate pedestrian movement and wide lanes and in some areas dedicated cycleways facilitate bicycle movement around the precinct.

B. Objectives

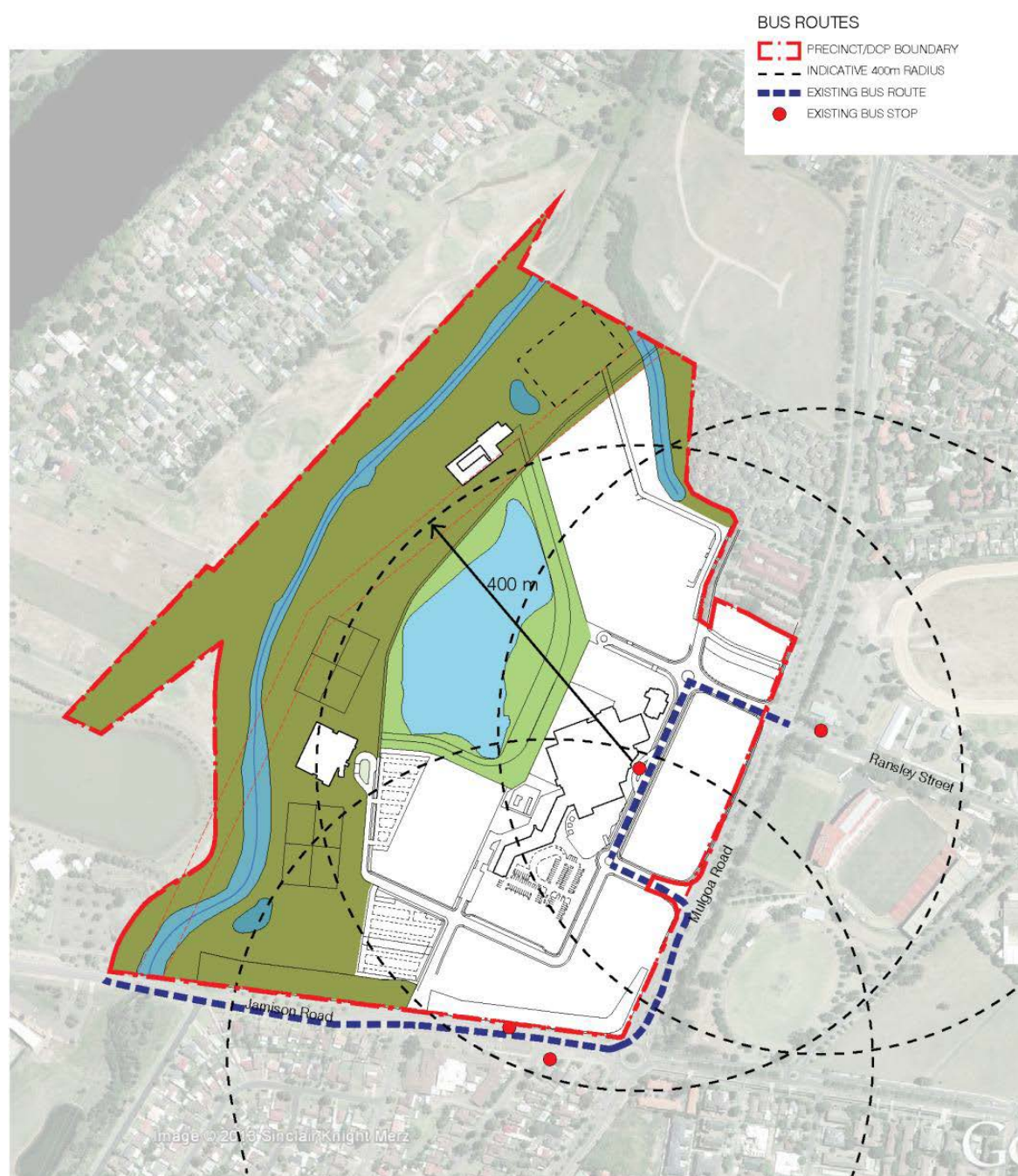
- a) To improve access in the Panthers Penrith by providing through site links as development occurs;
- b) To retain and enhance existing through site links as redevelopment occurs;
- c) To encourage active street fronts along the length of through site links where possible;
- d) To provide for pedestrian amenity and safety;
- e) To improve the permeability of large sites when they are redeveloped for more intensive uses; and
- f) To provide a lakefront promenade that provides a central pedestrian connection to the various lakeside sub precincts.

C. Controls

- 1) Pedestrian and cycle access within the site is to be provided as indicated in Figure E13.22.
- 2) A dedicated cycle lane is to be provided to the park edge.
- 3) Pedestrian links are to make use of existing crossings within the Peachtree Creek zone.
- 4) Pedestrian links are to facilitate future connections from outside the site.
- 5) Through site links are to be provided as shown in Figure E13.24 with accessible paths of travel that are:
 - a) A minimum width of 4m for its full length and clear of all obstructions including columns, stairs, etc.
 - b) Direct and publicly accessible thoroughfares for pedestrians.
- 6) Signage is to be located at street entries indicating public access through the site as well as the street to which the link connects.

13.8.3. Public Transport

Figure E13.23: Public Transport Nodes



A. Background

The Site benefits from its relatively close proximity to Penrith railway station – the station is within 20 minutes casual walking distance to the north of the precinct.

A number of bus routes travel north-south along Mulgoa Road, providing access to the railway station and Penrith city centre. Jamison Road has a weekday bus service. Panthers has a bus stop for public buses serving Penrith and the Blue Mountains.

B. Objectives

- a) To locate higher density development near public transport opportunities;
- b) To explore extension of bus services into the site; and
- c) To ensure adequate infrastructure for pedestrian amenity and safety.

C. Controls

- 1) The public transport route is shown as per Figure E13.23.
- 2) New development is to respond to public transport opportunities within and adjacent to the site.
- 3) Ensure adequate infrastructure for bus users such as seating and shelters are provided at bus stops within the site.

13.8.4. Traffic, Parking and Site Access

Figure E13.24: Restricted Vehicular Access



A. Background

The Panthers Penrith Precinct will accommodate a range of uses and traffic generation and parking needs will differ from traditional single use sites.

Panthers have entered into a Voluntary Planning Agreement with the roads and Maritime Services and Council to deliver local and State road infrastructure as result of traffic generated by the development within the Precinct.

B. Objectives

- a) To ensure that traffic generation of development on the Panthers Penrith Precinct does not exceed agreed limits;
- a) To integrate adequate car parking and servicing access without compromising street character, landscape or pedestrian amenity and safety;
- b) To ensure that adequate parking to serve development is provided on site;
- c) To encourage shared use of parking;
- d) To allow flexibility in parking rates to reflect shared use or best practice;
- e) To ensure that parking structures do not dominate the public domain; and
- f) To control site entry points to encourage the active use of street frontages.

C. Controls

Traffic and Access

- 1) Development applications for major development proposals should be accompanied by an appropriate Traffic Report that details the assessed impact of projected vehicular traffic associated with the proposal. Traffic on the site is not to exceed limits identified in the Voluntary Planning Agreement supporting Traffic Management Report.
- 2) Any Traffic Report or Traffic Impact Statement is required to address the following issues:
 - a) The objectives of this section relating to transport and land use;
 - b) The objectives of this section relating to traffic management and safety; and
 - c) The objectives and controls of this section relating to traffic generating developments.
- 3) A Traffic Plan that addresses Special Event traffic conditions is to be submitted with any DA for event or major sporting facilities on the site.
- 4) Vehicular access is not permitted in zones nominated in Figure E13.24 and where practicable, vehicle access is to be from secondary streets.
- 5) A new median in Jamison Road is to be provided.
- 6) Potential pedestrian/vehicle conflict is to be minimised by:
 - a) Limiting the width and number of vehicle access points;
 - b) Ensuring clear site lines at pedestrian and vehicle crossings;
 - c) Utilising traffic calming devices; and
 - d) Separating and clearly distinguishing between pedestrian and vehicular accessways.

Parking

- 1) The appearance of car parking and service vehicle entries is to be improved by locating or screening parking, garbage collection, loading and servicing areas visually away from the street.
- 2) Structured parking that extends above ground where viewed from the public domain is to be architecturally treated or where possible sleeved with development.
- 3) Any development application within the Mulgoa Road sub precinct is to submit a car parking strategy that details the location and provision of the displaced existing parking as a result of any development within this sub precinct.

13.9 BUILT FORM

13.9.1. Street Alignment, Wall Height and Setbacks

Figure E13.25: Setbacks

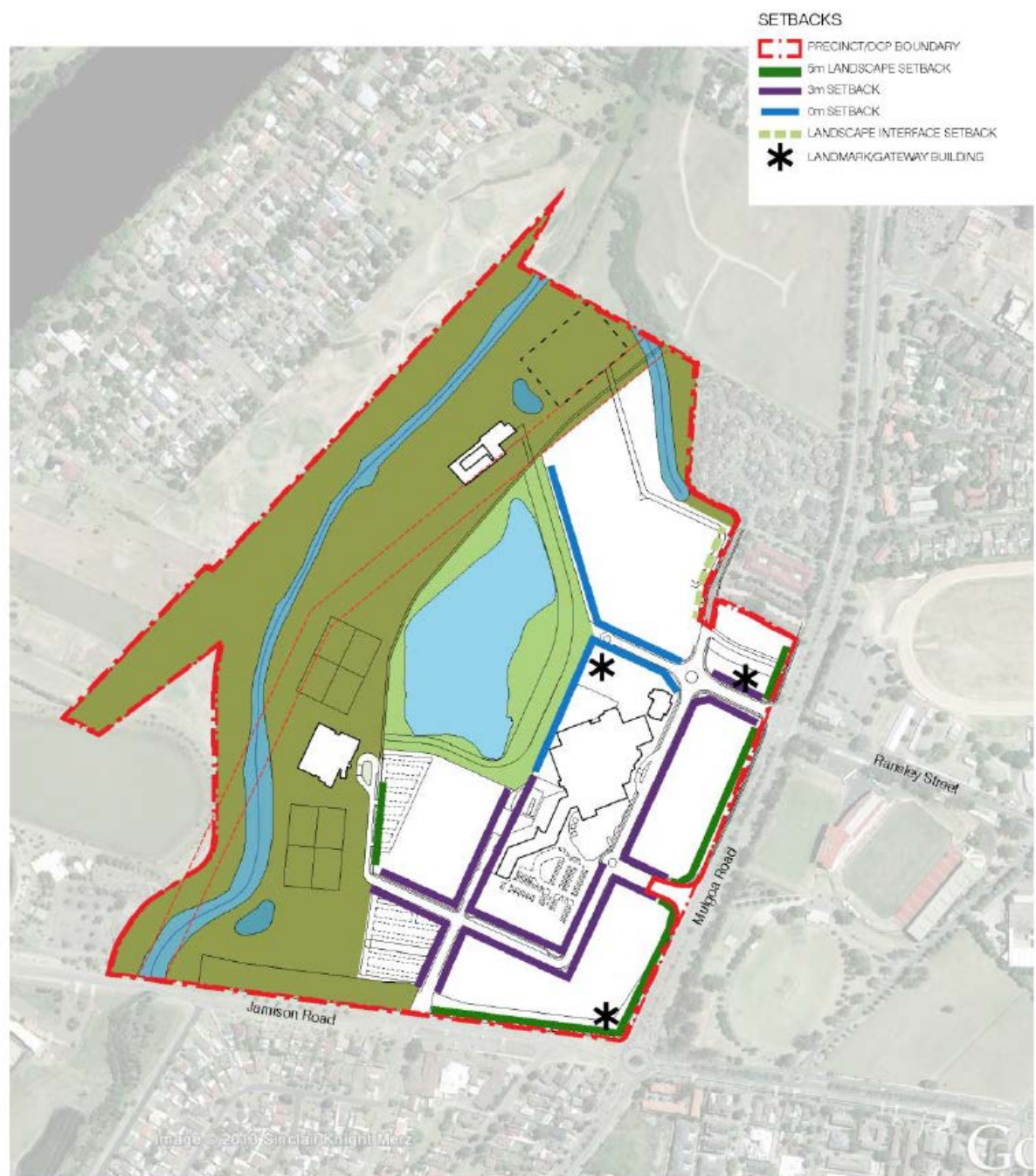


Figure E13:26 Street Wall Height



A. Background

Zoning of the site allows for heights up to 24m with a landmark building site of 32m. The establishment of a clear and cohesive built form framework allows for flexibility of building use.

Street setbacks and building alignments establish the front building line. They help to create the proportions of the street and can contribute to the public domain by enhancing streetscape character and continuity of street facades.

Street setbacks can also be used to enhance the setting and address for the building. They provide for landscape areas, entries to ground floor apartments and deep soil zones. Setbacks allow ventilation, daylight access and view sharing and increase privacy.

Buildings should be built up to the street alignment to reinforce the urban character and improve pedestrian accessibility amenity and activity at street level. Above street frontage height, buildings are to be set back to provide sunlight access to streets, pedestrian areas and lower levels of other buildings. These setbacks allow view corridors, an appropriate building scale for pedestrians, and good growing conditions for street trees.

B. Objectives

- a) To establish consistent building alignments to the street;
- b) To provide street setbacks appropriate to building function and character;
- c) To establish the desired spatial proportions of the street and define the street edge;
- d) To create a transition between public and private space;
- e) To locate active uses closer to pedestrian activity areas;
- f) To maintain sun access to the public domain;
- g) To protect important views to the Blue Mountains escarpment;
- h) To ensure an appropriate level of amenity for building occupants in terms of daylight access, outlook, view sharing, ventilation, wind mitigation, and privacy;
- i) To achieve usable and pleasant streets and public domain areas in terms of wind mitigation and daylight access;
- j) To provide building separation for visual and acoustic privacy; and
- k) To provide deep soil zones within sites, and maintain mature/significant vegetation where possible.

C. Controls

General

- 1) Street building alignment and street setbacks are specified in Figure E13.25 and Figure E13.26.
- 2) Balconies may project up to 600 mm into front building setbacks, provided the cumulative width of all balconies at that particular level totals no more than 50% of the horizontal width of the building façade, measured at that level.
- 3) Minor projections into front building lines and setbacks for sun shading devices, entry awnings and cornices are permissible.
- 4) The minimum height of development built to the side boundary should comply with the maximum street frontage height requirement as shown in Figures E13.27-31. Exceptions

to this control can occur for parts of a building's frontage provided it is not more than 40% of that buildings frontage and such exemption is justified on architectural merit.

- 5) Where 0m side and rear boundary setbacks are permissible, it must be demonstrated that 0m setbacks provide amenity in terms of day light access and ventilation.

Gateway Buildings

- 1) Gateway sites have been nominated at the corner of Jamison and Mulgoa Roads and at the site entry off Mulgoa Road at Ransley Street. Special emphasis through architectural quality and detailing is required.
- 2) These buildings are to be iconic in form and will denote and provide emphasis to the main Blue Mountain view corridors from Mulgoa Road.
- 3) Buildings are to address the corner condition with an emphasis on the approach along Mulgoa Road.

Figure E13:27 Setbacks on existing North/South Street

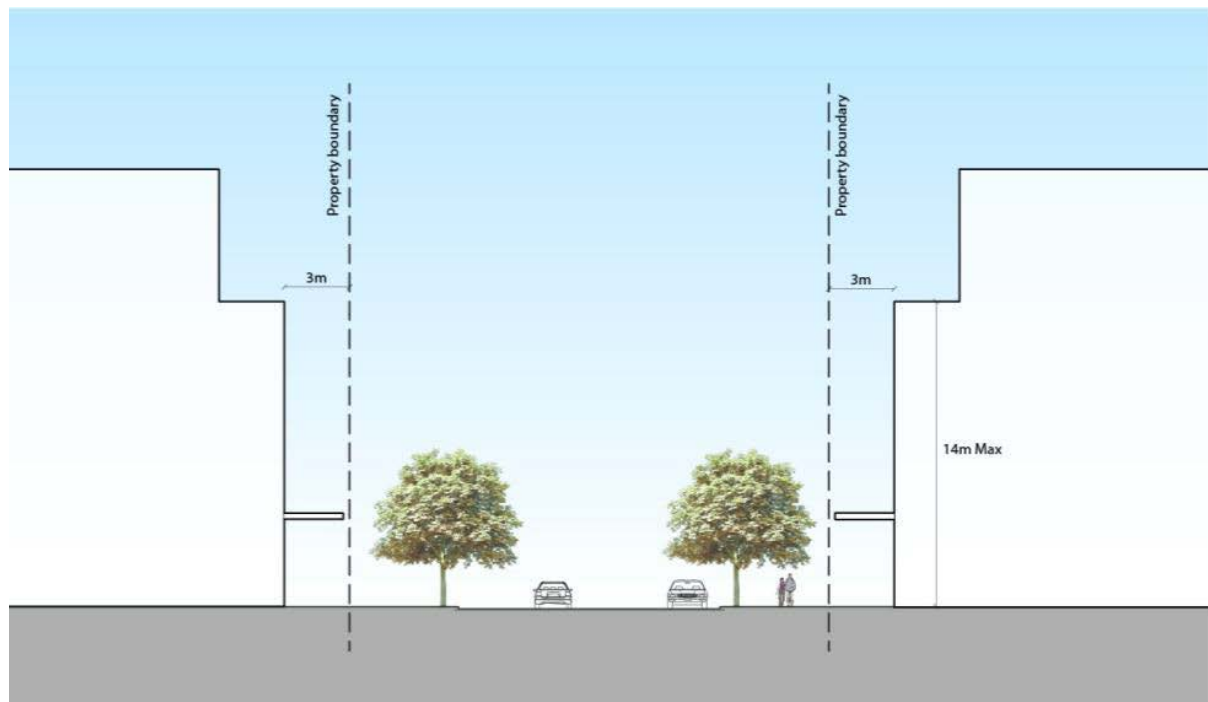


Figure E13:28 Setbacks West of Existing Hotel

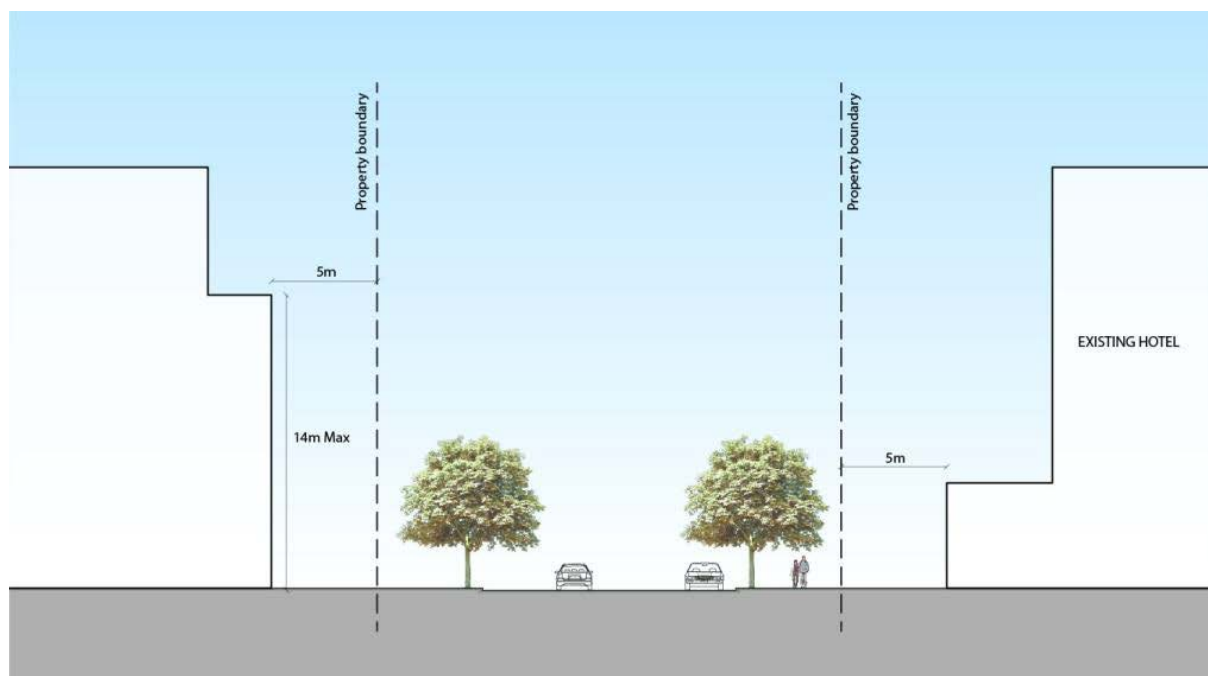


Figure E13:29 Setbacks on Ransley Street

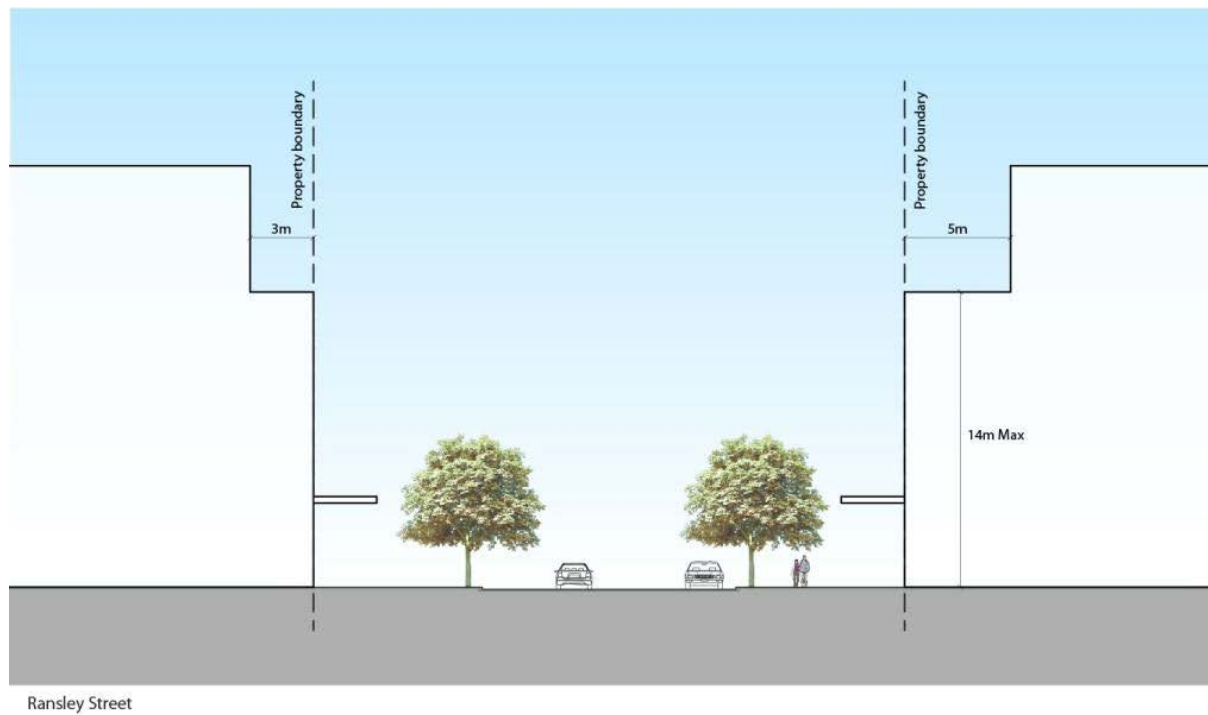


Figure E13:30 Setbacks Park Edge Street

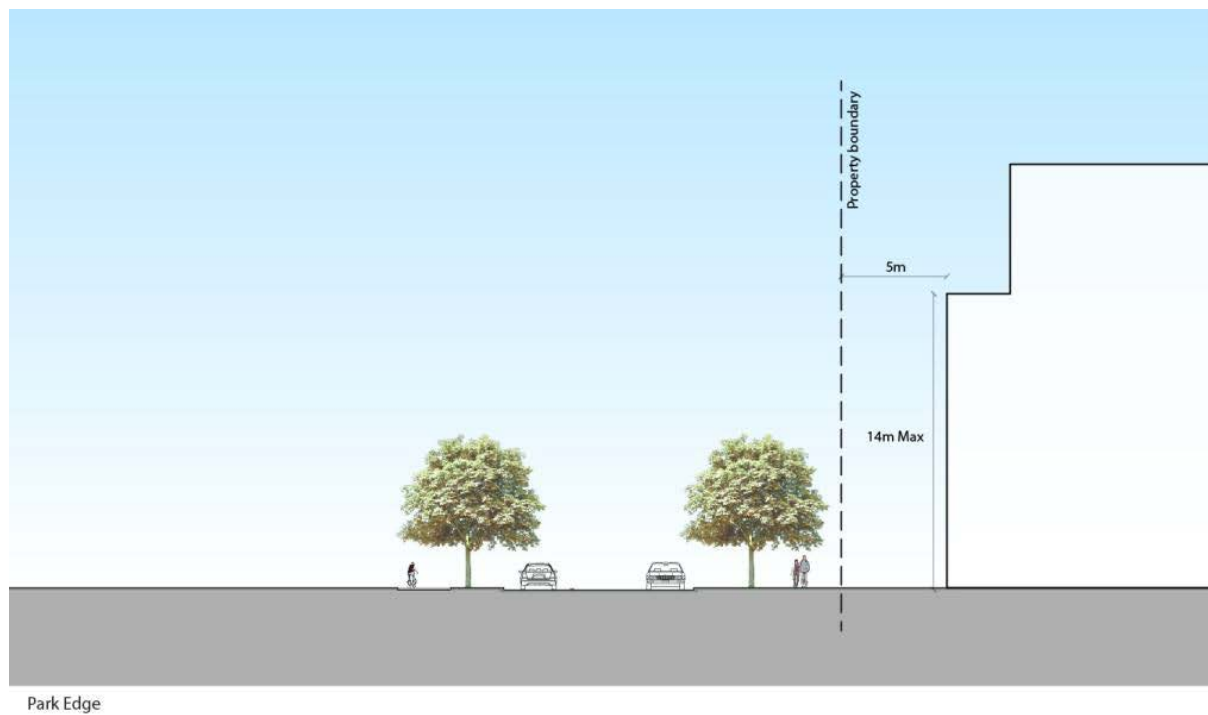
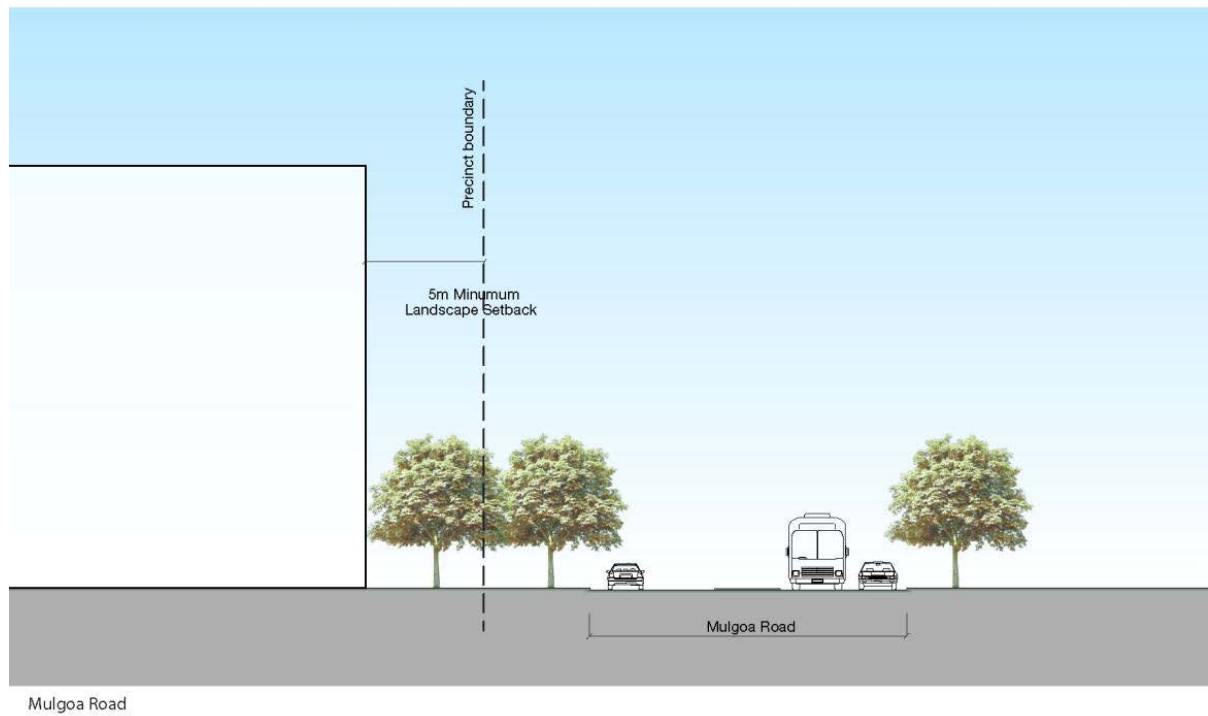


Figure E13:31 Mulgoa Road Frontage



13.9.2. Active Street Frontages

Figure E13.32: Active Frontages



A. Background

Active frontages promote an interesting and safe pedestrian environment. Due to the size of the area, it is recognised that not all streets will develop as active pedestrian areas. Active frontages have been identified where active ground level uses are to be consolidated, creating vibrant streetscapes in areas with high pedestrian traffic and possibly located close to public transport and public open space.

Active uses include:

- a) Shop fronts
- b) Retail/service facilities with a street entrance
- c) Cafe or restaurants with street entrance
- d) Community and civic uses with a street entrance
- e) Recreation and leisure facilities with a street entrance.

B. Objectives

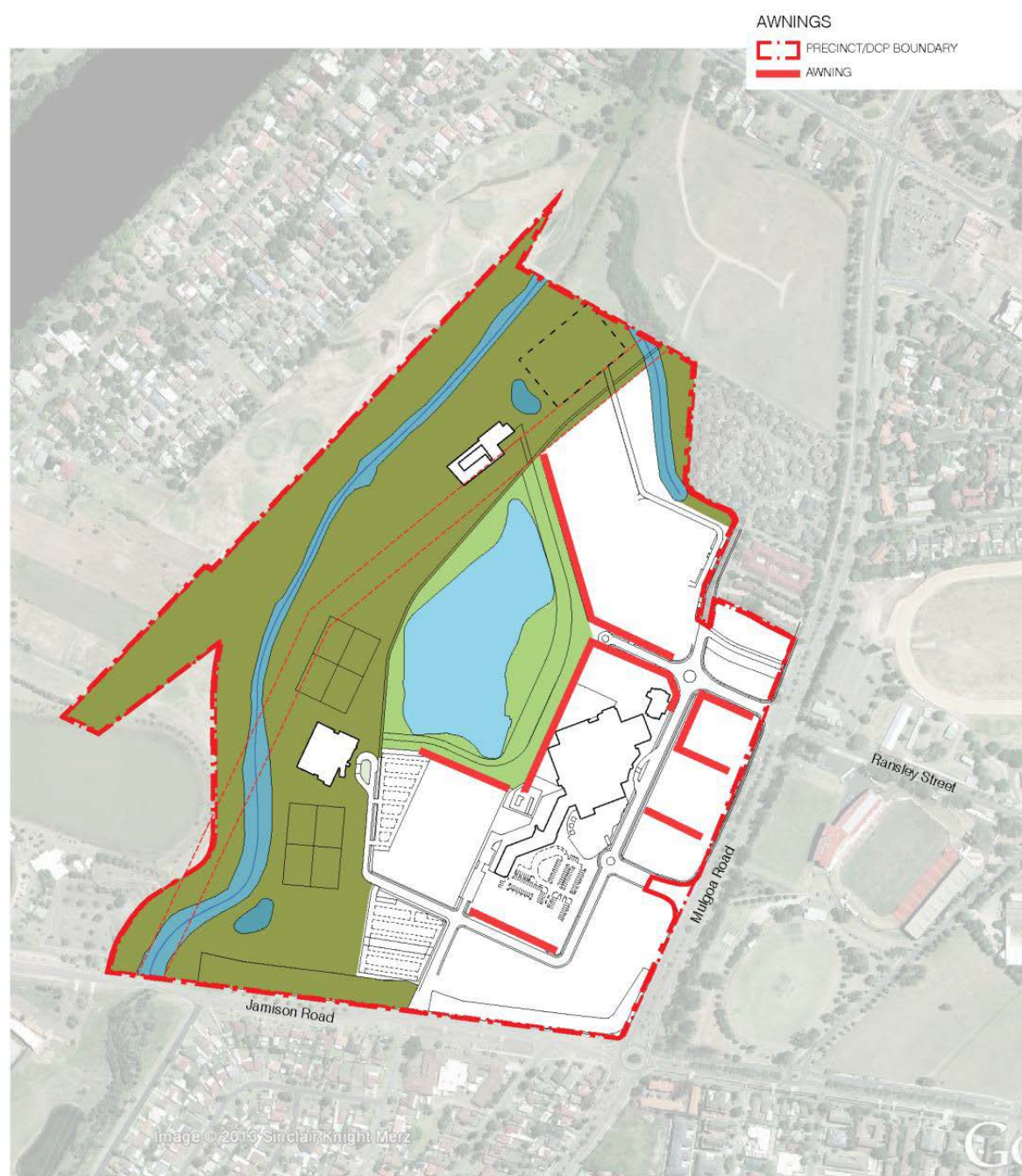
- a) To promote pedestrian activity and safety in the public domain;
- b) To create vibrant streetscapes around areas of high pedestrian traffic;
- c) To encourage activity within the Site outside commercial business hour;
- d) To provide a mix of uses to support an increasing employment and visitor population over time; and
- e) To enhance pedestrian safety, security and amenity within Precinct.

C. Controls

- 1) Active ground level uses are to be located as shown Figure E13.32.
- 2) Active street fronts are to be maximised along Ransley Street, to the lakeside promenade, and in front of hotels and the multi-use facility.
- 3) Entries to active frontage tenancies are to be accessible.
- 4) Vehicular access points should not, if possible, be located at primary active frontages.
- 5) Ground level uses at active frontage zones are to be located at or close to street level.
- 6) Transparency and openings to the street are to be maximised and blank walls, fire exits and building services elements are to be minimised.

13.9.3. Awnings

Figure E13.33: Awning Locations



A. Background

Awnings increase pedestrian amenity by providing shelter and enclosure at a pedestrian scale. They encourage pedestrian activity along streets and, in conjunction with active edges, support and enhance the vitality of the local area. Awnings and entry canopies provide a public presence and interface within the public domain, contributing to the identity of a development.

B. Objectives

- a) To provide weather protection, safety and security for pedestrians;
- b) To unify the streetscape; and
- c) To demarcate building entries and contribute to the image and identity of development.

C. Controls

Awnings

- 1) Continuous awnings must be provided as shown in Figure E13.33.
- 2) Awning width is to be a minimum of 3m.
- 3) Provide awnings with a soffit height of 3.6m above the finished ground floor level. On sloping sites, awning soffit height may vary from 3.6m – 4.2m.
- 4) Where the topography slopes along the street, awnings are to step to provide a regular height over the footpath. Steps in awnings should not exceed 600mm.
- 5) Stepped awnings must be detailed to provide continuous weather protection.
- 6) Glazing is not permitted in continuous awnings.
- 7) Under awning lighting is to be provided to achieve appropriate luminance levels for pedestrians (Refer to relevant Australian Standards). This should be recessed into the soffit of the awning.

Entry Canopies

- 1) Entry canopies and discontinuous awnings may be provided to building entries not located along Active Frontages.
- 2) Entry canopies may be glazed or solid, and are to be coordinated with the overall facade design.
- 3) Provide canopies with a soffit height of 3.6m – 4.2m.

13.9.4. Building Depth and Bulk

A. Background

The final use of sites remains flexible and subject to market demand and opportunities. Without a clear program of land uses across the precinct, controlling the size of floor plates of buildings and site coverage helps to create good internal amenity, access to natural light and ventilation and reduces potential adverse effects that tall and bulky buildings may have on the public domain, including visual impacts and overshadowing.

Building depth is related to building use.

B. Objectives

- a) To promote the design and development of sustainable buildings;

- b) To achieve the development of living and working environments with good internal amenity and minimise the need for artificial heating, cooling and lighting;
- c) To provide viable and useable commercial floor space;
- d) To achieve usable and pleasant streets and public domain at street level;
- e) To achieve a skyline sympathetic to the topography and context;
- f) To allow for view sharing and view corridors; and
- g) To reduce the apparent bulk and scale of buildings by breaking up expanses of building wall with modulation of form.

C. Controls

- 1) Commercial floor plate sizes are governed by the Panthers Penrith provisions within the LEP.
- 2) All points of an office floor should be no more than 10m from a source of daylight (e.g. window, atria, or light wells) in buildings less than 24m in height, and no more than 12.5m from a window in buildings over 24m in height.
- 3) Use atria, light wells and courtyards to improve internal building amenity and achieve cross ventilation and/or stack effect ventilation.

13.9.5. Building Articulation

A. Background

Building articulation refers to the three dimensional external modelling of a building façade. Building articulation establishes the relationship of the building with its street. The composition and detailing of the building façade has an impact on its apparent scale as well as its appearance. The pattern or rhythm established by the proportions of the façade, the modulation of the external walls, the design of façade elements, their materials and detailing are all important considerations.

B. Objectives

- a) To create buildings with articulated façade that address the public domain;
- b) To ensure that new developments have facades which define and enhance the public domain; and
- c) To ensure that building elements such as awnings, sun screens, shading devices, roof structures and service elements are integrated into the overall building form and façade design.

C. Controls

- 1) Facades are to be composed with an appropriate scale, rhythm and proportion, that respond to building use and the desired character by:
 - a) Defining a base, middle and top related to the overall proportion of the building;
 - b) Expressing key datum lines in the context using cornices, a change in materials or building setback;
 - c) Expressing the internal layout of the building, for example, vertical bays or its structure, such as party wall divisions;
 - d) Expressing the variation in floor to floor height, particularly at the lower levels;

- e) Articulating building entries with awnings, porticos, recesses and blade walls; and
 - f) Incorporating architectural features which give human scale to the design of the building at street level. These can include entrance porches, awnings, pergolas and fences using recessed balconies and deep windows to create articulation and define shadows thereby adding visual depth to the façade.
- 2) Facade design is to reflect and respond to the orientation of the site using elements such as sun shading and environmental controls where appropriate.
 - 3) The maximum unbroken facade length is to be 70 metres and it must provide articulation and interest.
 - 4) Important corners are to be expressed by giving visual prominence to parts of the façade (e.g. a change in building articulation, material or colour).
 - 5) Building services such as roof plant and parking ventilation are to be coordinated and integrated with the overall façade and building design, and screened from view.
 - 6) Ventilation louvres and car park entry doors are to be coordinated with the overall façade design.

13.9.6. Architectural Excellence

A. Background

This Part seeks to encourage urban design and architectural excellence as well as environmental sustainability in both the public and private domain.

Architectural excellence is particularly important where the building is highly visible from the public domain outside the precinct.

Good building design should positively contribute to the overall architectural quality of the city and provide buildings appropriate to their context. In some circumstances, this contribution may be as an iconic or landmark building, but more typically it is as a well-mannered building that fits sensitively into the streetscape.

Architectural excellence should be achieved through careful consideration of:

- a) Built form – how it relates to its context
- b) Quality of materials
- c) Integrity of the design concept
- d) Its contribution to the public domain.

B. Objectives

- a) To encourage a high level of design consideration;
- b) To ensure that significant buildings achieve design excellence;
- c) To ensure that buildings contribute positively to the precinct character; and
- d) To encourage the development of sustainable design.

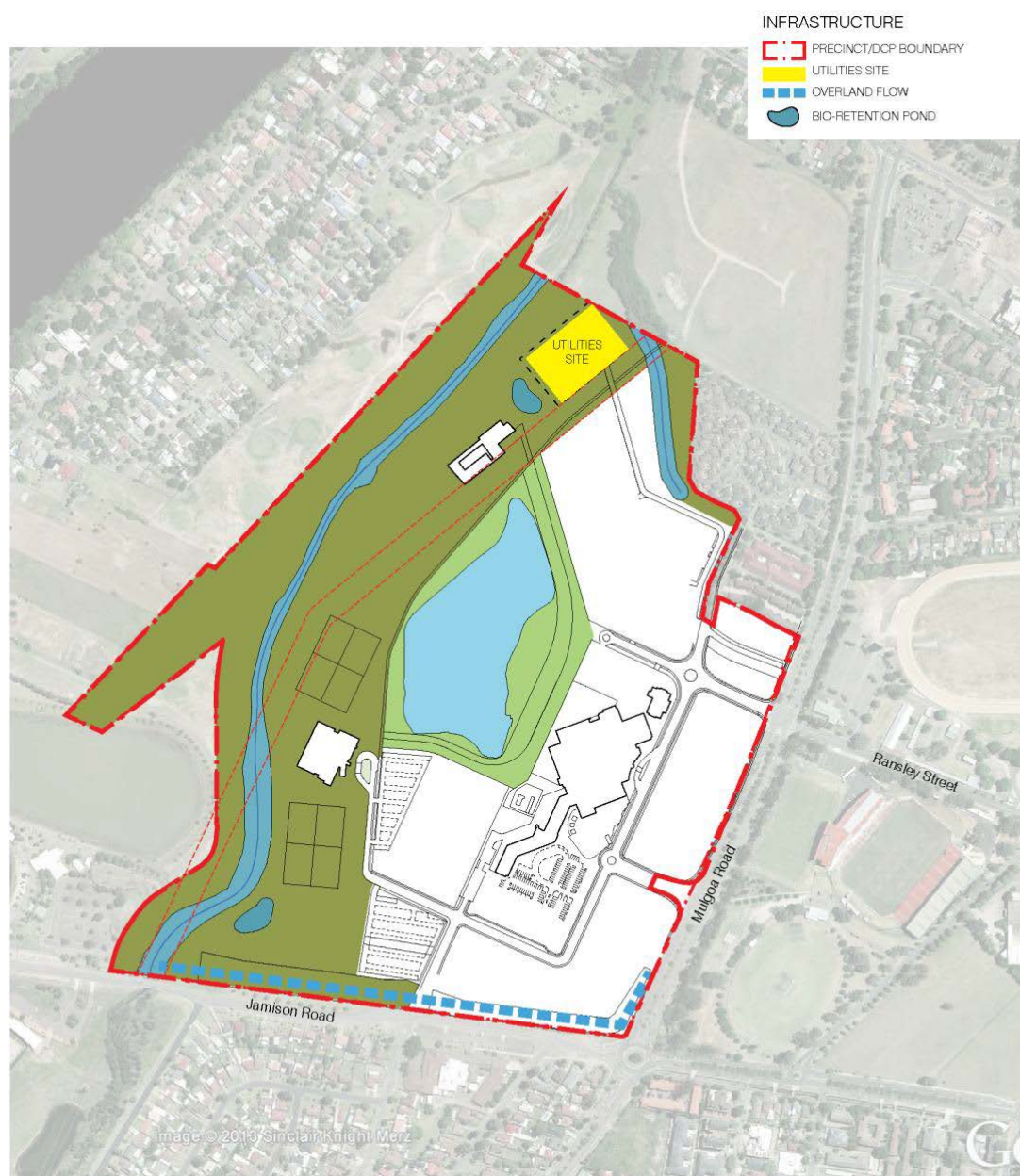
C. Controls

- 1) All applications are to explain the design concept including built form, context response and materials selection.
- 2) Gateway buildings are to demonstrate architectural excellence in the following areas:
 - a) How the building reinforces and enhances significant vistas and view corridors

- b) How the building will enliven the public domain it adjoins.
- 3) Materials are to be selected for durability and quality. In general painted surfaces are not appropriate especially at street 'level'.
- 4) Particular attention is to be paid to detailing of materials.
- 5) Buildings are to be simple, elegant and well proportioned.
- 6) Environmental sustainable initiatives are to be incorporated into new buildings.

13.10 DELIVERY

Figure E13.34: Infrastructure Plan



13.10.1. Flooding and Drainage

A. Background

Flooding and stormwater are major considerations on the Penrith Panthers Precinct site. A precinct Stormwater Management Strategy (SMS) will minimise the impact on water quality, identify opportunities to maximise the reuse of stormwater runoff, reduce the demand on potable water supplies, reduce pollutants and enhance the landscaping opportunities within the development.

The SMS will be based upon the principles of Water Sensitive Urban Design (WSUD) and will be underpinned by a stormwater harvesting strategy aimed at maximizing the reuse of runoff for non-potable purposes, maintaining the ecological integrity of Peachtree Creek, and complying with Penrith City Council's water management requirements as set out in Section C3 of this DCP.

Any development that is flood affected will require an appropriate level of flood assessment and may include the need to undertake modelling and prepare flood reports. The assessment will need to include consideration of flood behaviour and hazard, and any mitigation measures required to ameliorate any impacts identified.

Maintaining the regional flood runner function of Peachtree Creek through the site and ensuring no adverse impact upon flood levels and flood conveyance on surrounding properties and in Peachtree Creek is of prime importance. In this regard the adopted flood conveyance principles of Panthers Planning Proposal Appendix H Scenario 4 Flood Model apply to the site (i.e. conveyance of 200 year regional flood).

The flood levels detailed in Panthers Planning Proposal Appendix H table H1.1 have been prepared for strategic planning purposes only. Applicable flood levels for each development shall be determined in conjunction with Penrith City Council at the time of each application.

**Figure E13.35: Development Layout as modelled from Panthers /
Adopted Scenario 4 development footprint**



B. Objectives

- a) To manage development of the Panthers site with respect to its unique flooding characteristics;
- b) To develop the site in accordance with sound flood management principles;
- c) To achieve high quality outcomes for water quality and quantity; and
- d) To provide opportunities for WSUD initiatives.

C. Controls

- 1) All applications are to address the relevant sub-sections of the Water Management section of this DCP.
- 2) A Stormwater Management Strategy (SMS) is to be prepared for the whole Precinct and be submitted with the first major development application and should identify and address:
 - a) Impacts of stormwater generated both on and off the site;
 - b) Stormwater easements and overland flow paths;
 - c) Opportunities to maximise the reuse of stormwater runoff;
 - d) Means to reduce the demand on potable water supplies; and
 - e) Reductions in pollutants entering the water system.
- 3) Any development west of the Club and within the flood flow conveyance corridor is to develop a strategy to ensure that the 200-year regional flood runner is maintained without causing adverse impact to adjoining lands in accordance with the principles of Scenario 4 modelling under Panthers Planning Proposal – Appendix H. The strategy will identify the timing, staging and detailing of necessary works to be undertaken.
- 4) Development of a comprehensive flood evacuation and emergency response plan as part of the Infrastructure Master Plan.

13.10.2 Utilities

A. Background

The Panthers Penrith Precinct will connect to the local utilities network, with upgrades occurring where required to support the future development. As part of the overall development strategy, alternative services and energy sources will be investigated.

An integral part of determining development suitability for a site involves assessing whether the appropriate utilities and services are available on the site to service the proposed development, and whether they have sufficient capacity to meet the demand of the proposal.

This section aims to ensure that development consent is only granted where a proposal can be appropriately serviced, either through the existing system having sufficient capacity or being upgraded, or an alternative system being provided. In most cases, the developer will be required to fund necessary system upgrades or alternatives.

B. Objectives

- a) To ensure that development will not place unreasonable pressure on servicing authorities in terms of timing and extent of supply;
- b) To ensure that development will take place only where satisfactory arrangements are made with the servicing authorities; and
- c) To ensure that adequate consultation is carried out with the relevant servicing authorities during the formulation of development proposals.

C. Controls

- 1) All development applications are to address the existing and proposed provision of services/utilities to a site and whether there is satisfactory capacity to address the required demand of the proposal.

- 2) Satisfactory arrangements are to be made with the servicing authorities for the provision of services to the property.
- 3) Where possible, services (including easements) should not be located in areas where vegetation will be removed or damaged.
- 4) Existing easements are to be reviewed and rationalised.
- 5) A site utilities zone with adequate landscape screening is to be located in the north of the site as indicated in Figure E13.34.

13.10.3 Staging

A. Background

The Panthers Penrith Precinct Structure Plan represents indicative super lots on the site and the order and timing in which elements are to be delivered will be in response to market opportunities.

The delivery of individual developments must be considered in the context of:

- a) Available and future infrastructure
- b) Site access
- c) Flood control
- d) Public domain delivery
- e) Traffic and parking limits
- f) As each development is delivered, the supporting infrastructure must be provided. All relevant supporting studies must be completed with each major development application.

B. Objectives

- a) To facilitate orderly development of the site;
- b) To ensure that adequate services are provided at each stage of development;
- c) To ensure that infrastructure anticipates future development; and
- d) To ensure that development does not exceed floor space or traffic and parking limits identified for the Precinct.

C. Controls

- 1) Each development application for new buildings in excess of 1,000m² GFA is to identify the infrastructure provision necessary to service this development. This includes, but is not limited to:
 - a) Power
 - b) Water and gas supply
 - c) Drainage works
 - d) Flood control works
 - e) Roadworks.
- 2) Infrastructure provision is to anticipate future development adjacent and linked to the site. The provision is to ensure that any disruption to new roads and services is minimised as future projects are brought on line.

- 3) Consideration of any flood studies undertaken to determine in particular the timing and delivery of any flood mitigation works (e.g. if required, reducing the ski lake)
- 4) Major new development in excess of 1,000m² GFA will require evaluation of parking and traffic generation based on the findings and limits identified in Supplementary Transport Assessment for the Panthers Penrith Planning Proposal GHD May 2011 and the Panthers Roadworks Planning Agreement.
- 5) A register of all floor area, use and parking provision in the precinct is to be maintained through the life of precinct development.

Table of Contents

E14 ST CLAIR	2
14.1. LAND AT BANKS DRIVE AND MAMRE ROAD	2
14.1.1. LAND TO WHICH THIS SECTION APPLIES	2
14.1.2. AIMS OF THIS SECTION	2
14.1.3. DEVELOPMENT STANDARDS	2
14.1.3.1. SETBACKS	2
14.1.3.2. ACCESS	2
14.2. LAND AT COOK PARADE	3
14.2.1. LAND TO WHICH THIS SECTION APPLIES	3
14.2.2. AIMS OF THIS SECTION	3
14.2.3. CONTROLS	3

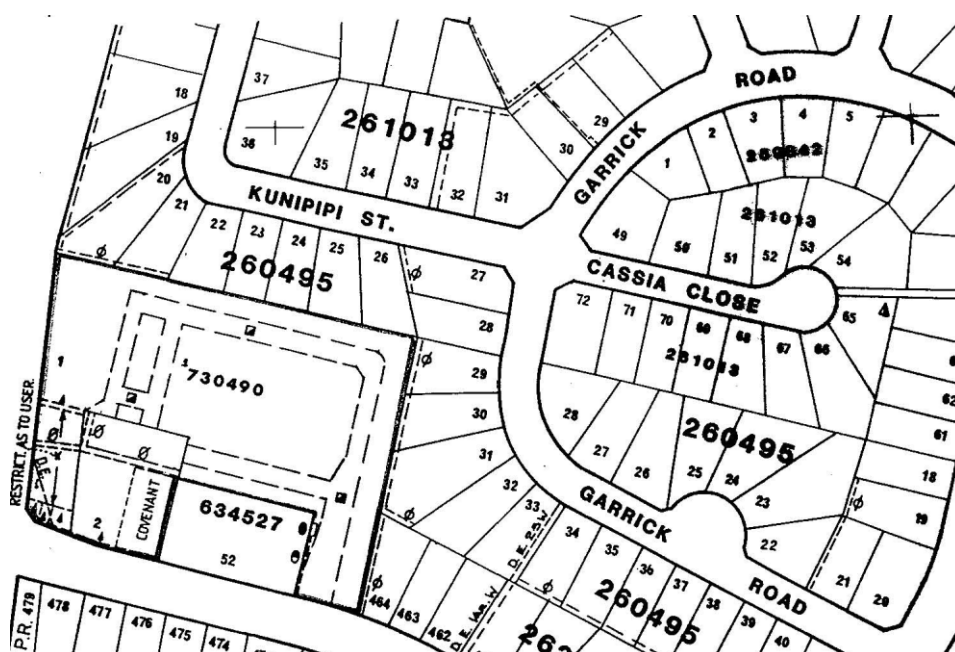
E14 St Clair

14.1 Land at Banks Drive and Mamre Road

14.1.1 Land to which this section applies

This section applies to Lot 1 and 2 DP 730490 and Lot 52 DP 634527 situated at the north-eastern corner of Banks Drive and Mamre Road St Clair.

Figure E14.1: Land to which this Section Applies



14.1.2 Aims of this section

The aim of this section is to retain the landscaped buffer areas to the street frontages and boundaries with the residential areas, in order to maintain the amenity and scenic quality of the area.

14.1.3 Development Standards

14.1.3.1 Setbacks

Any application submitted concerning development of this land is to observe the following landscaped setback/buffer area provision:

- a) 18m to Mamre Road;
- b) 5m to Banks Drive; and
- c) 12m to any adjoining residential development,

14.1.3.2 Access

All access to the site is confined to the frontage to Banks Drive.

14.2 Land at Cook Parade

14.2.1 Land to which this section applies

Lot 2566 DP263157, Lot 68 DP702772 and Lots Part 671 and 672 DP739138 Cook Parade, St Clair

14.2.2 Aims of this section

This section:

- Specifies the purposes for which land may be developed; and
- Regulates the siting of facilities on the land described above.

14.2.3 Controls

This section operates in the manner set out on the accompanying map (SC-020)

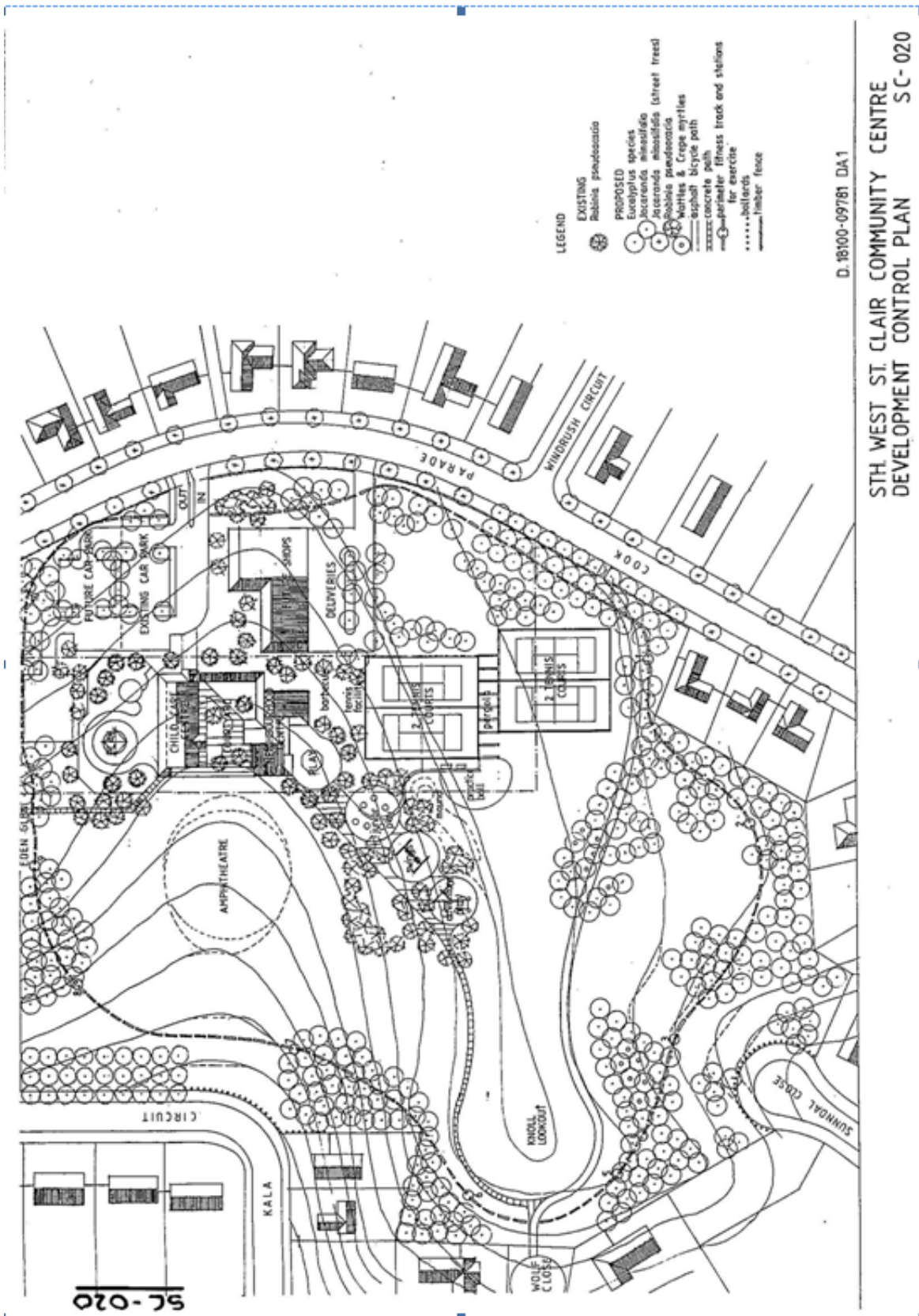


Table of Contents

E15 PART A ST MARYS TOWN CENTRE	2
15.1. LAND USE CONTROLS	7
15.1.1. RESIDENTIAL DEVELOPMENT CONTROLS	7
15.1.2. MIXED USE DEVELOPMENT CONTROLS	8
15.2. BUILT FORM CONTROLS	10
15.2.1. BUILDING TO STREET ALIGNMENT AND STREET SETBACKS	14
15.2.2. STREET FRONTAGE HEIGHTS	16
15.2.3. MAXIMUM BUILDING HEIGHTS AND LOT LAYOUT REQUIREMENTS	22
15.2.4. BUILDING DEPTH AND BULK	22
15.2.5. BOUNDARY SETBACKS AND BUILDING SEPARATION	23
15.2.6 SITE COVERAGE AND DEEP SOIL ZONES	24
15.2.7. LANDSCAPE DESIGN	25
15.2.8. PLANTING ON STRUCTURES	28
15.3 OTHER CONTROLS	28
15.3.1. PEDESTRIAN AMENITY	28
15.3.2 ACCESS, PARKING AND SERVICING	37
15.3.3 PRECINCT CONTROLS	43

E15 Part A St Marys Town Centre

A. Background

This section applies to development on land covered by the St Marys Town Centre as shown in Figure E15.2. This section provides specific controls for the St Marys Town Centre in addition to the general controls elsewhere in this DCP.

The aim of the controls in this section of the DCP is to provide more detailed provisions for development in the St Marys Town Centre that will:

- a) Contribute to the growth and character of St Marys;
- b) Deliver a balanced social, economic and environmental outcome; and
- c) Protect and enhance the public domain.

B. General Objectives

- a) To facilitate the revitalisation of St Marys Town Centre by promoting redevelopment and urban sustainability;
- b) To promote high quality urban design, architectural excellence and environmental sustainability in the planning, development and management of the Town Centre;
- c) To provide for mixed use, commercial and residential development within the Town Centre which provides high levels of amenity for occupants;
- d) To provide high levels of accessibility within the Town Centre, connecting significant activity nodes, public open space and surrounding residential areas;
- e) To encourage development within St Marys Town Centre that gives primacy to the public domain and creates an attractive and vibrant centre;
- f) To encourage integration of the residential and non-residential land uses and improved access to transport facilities;
- g) To achieve an attractive and sustainable St Marys Town Centre; and
- h) To ensure that development in the St Marys Town Centre is consistent with the desired future character of each precinct as described in the following section.

C. Town Centre character areas

St Marys Town Centre is the vibrant heart of the St Marys area, providing diverse experiences and services within a friendly atmosphere. St Marys Town Centre is the second highest order centre (retail/commercial districts) within the Penrith Local Government Area after the Penrith City Centre.

St Marys Town Centre is built on the existing street patterns established in the 19th century. Queen Street links the Great Western Highway with the railway line and remains the focus of the Town Centre.

The plan for the St Marys Town Centre includes the establishment of two distinct gateways, which, coupled with the creation of a central town square, aims to revitalise the heart of the town. To further assist the continuing redevelopment of the area, the existing commercial centres have been expanded towards Queen Street to further animate the street. The inclusion of the shopping centres into the fabric of the Town Centre strikes a balance between the benefits of street retail life and the convenience of shopping centres.

A large part of St Marys Town Centre is zoned B4 Mixed Use which provides for greater diversity and an integration of land uses appropriate to the success of a sustainable and prosperous town centre.

Figure E15.2: Map of St Marys Town Centre



 Area covered by St Marys Town Centre

There are seven precincts identified in the St Marys Town Centre (see Figure E15.3), all with their own distinct characteristics. Generally, the identified activity precincts acknowledge and reinforce existing patterns of use in the Town Centre. The intention is to allow for a clearly legible series of precincts that define the retail and commercial centre whilst promoting mixed use to be implemented appropriately. The intended character of these precincts is identified below and will be used to inform and guide future development.

1. Northern: East + West (Mixed use)

The Northern Mixed Use precinct adjacent to the Railway station is the northern gateway to St Marys Town Centre. This precinct provides a key focus for the revitalisation of St Marys Town Centre. This precinct is divided by Queen Street into two discrete portions; namely Northeast and Northwest. Each portion has its own particular precinct controls.

Building heights of up to 32m, demonstrating adequate solar access to the public domain, and street frontage heights are permissible in this precinct to emphasise the arrival to St Marys Town Centre from the railway.

This precinct will be well lit and heavily used by pedestrians. Pedestrian connections will be provided to encourage human activity and interaction (foot traffic). Public art within the streetscape will be encouraged. Traffic flows will be limited.

Improvements to accessing the north western section for both vehicles as well as pedestrians/cyclists will be encouraged. New development will incorporate residential uses that overlook the street. The shopping centre will increase its active frontages and provide better connectivity to Queen Street.

The existing commercial centre is expanded westwards to create a more direct connection to Queen Street activities. The western portion of the precinct will incorporate a substantial amount of public/commuter parking.

2. Queen Street: East + West (Mixed use)

Queen Street is the focus of the town's activities. Most of the shops, together with cafes, restaurants and community activities will locate here to add vibrancy to the street life. It is the town's 'spine' linking the Great Western Highway in the south to the Railway Station in the north.

Variations in site depths on either side of Queen Street, namely the west and eastern sections, determine different development opportunities. This section of the DCP acknowledges these differences; hence variations in controls will apply.

The strong avenue of street trees, low scale fronts, awnings and wide footpaths make Queen Street an ideal environment for al-fresco dining.

The street's role, as the main spine of the town centre, will be reinforced. A maximum podium height is maintained at street frontage.

Residential opportunities will be provided at a setback above the podium fronting onto Queen Street. Queen Street's cross section will allow sufficient daylight into the street, providing ideal tree growth and sunny sidewalk dining conditions. Access to residential development will be via rear lanes.

The taller built form in behind Queen Street will be orientated east-west to provide northern exposure to the buildings and to maintain views to the mountains. Views to the Blue Mountains are found along each of the side streets primarily to the west and should be maintained at street level.

Improved pedestrian permeability will create better connections between the town and adjacent residential areas. An extension of Chapel Street is proposed which will form a main east-west crossing approximately half way along Queen Street. This street will act as the northern boundary of the Town Square and connect to a green corridor along the north of the Western Commercial Centre, linking west to the Leisure Centre and creek open space.

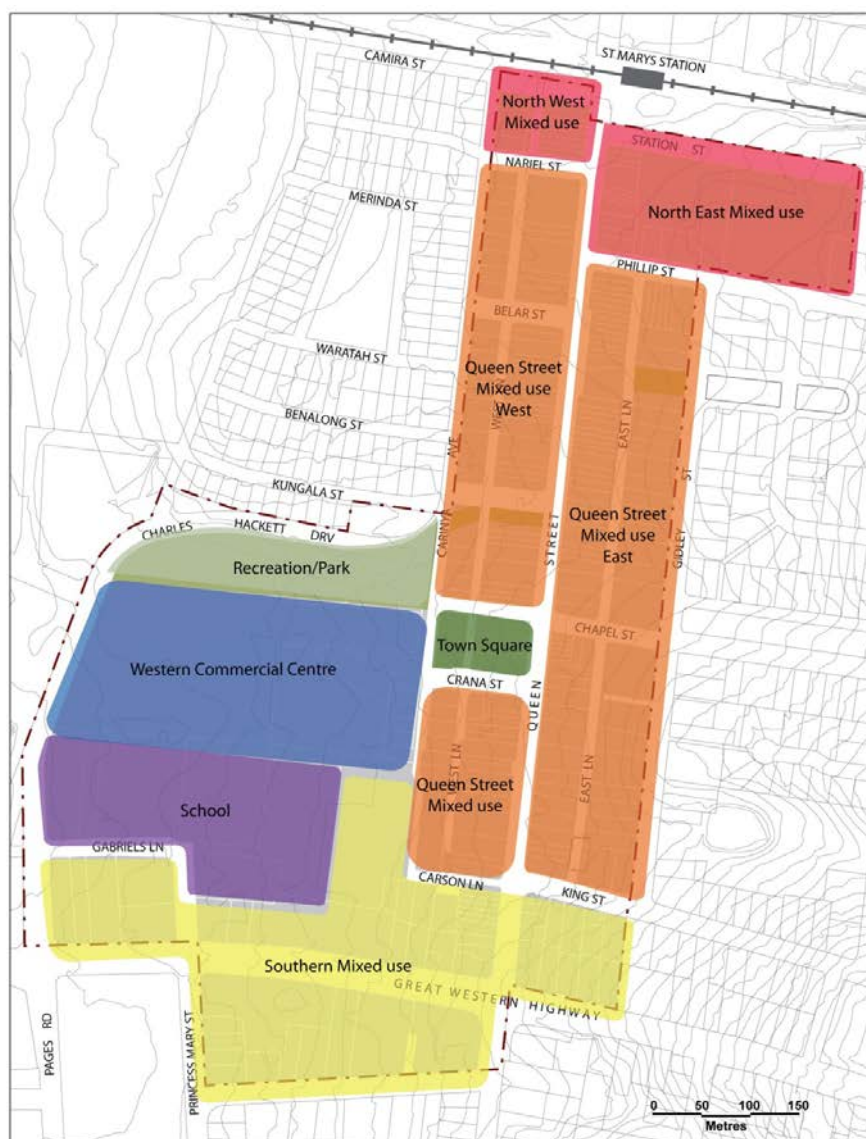
It is envisaged, however, that in a longer term, a more centrally located compact urban park should be located in proximity to the central square and address Queen Street.

3. Town Square

Every town needs a place to gather, to celebrate and to come together as a community. A new Town Square precinct will be created at the intersection of Chapel and Queen Streets and will focus on community uses. Active frontages will face the square. A pedestrian entrance will be located on the western side of the square to an extended shopping centre (Western Commercial Centre) in order to better connect the commercial centre to the town centre.

The maximum height of buildings surrounding the square is defined in Figure E15.12.

Figure E15.3: Town Centre Character Areas



- Area covered by St Marys Town Centre
- Northern Mixed Use
- Queen Street Mixed Use
- Town Square
- Western Commercial Centre
- School
- Southern Mixed Use
- Recreation/Park

4. Western (Commercial Centre)

The commercial centre to the west of the Town Square is to be extended eastward up to the new square. It is envisaged that a natural pedestrian desire line will be created along Queen Street from the Western Commercial Centre to the Northern Mixed use zone, which also contains a commercial centre. A major pedestrian access is to be provided onto Carinya Avenue in the vicinity of Crana Street adjacent to the Town Square.

5. Southern (Mixed use)

The Southern Mixed Use area along the Great Western Highway includes the southern gateway to the Town Centre. Development within this precinct provides a gateway statement improving the sense of arrival to the St Marys Town Centre as well as providing a link to the Cultural Centre and surrounding precincts. High quality architectural buildings will be created to provide prominent statements.

While this area is zoned mixed use, its proximity to the noise and traffic of the highway lends this area to larger footprint commercial or retail uses. A 16m height limit applies across the zone. A lower street edge height of 6m applies along Sainsbury Street in order to acknowledge the existing residential area to the south. Any development in the vicinity of the historic houses on the south western corner of the block should provide a curtilage to the satisfaction of Council.

The south western corner of Queen Street and the Great Western Highway is the Council's Arts and Community centre. Enhanced landscaping and the angled facades of the buildings on the other corners will give this intersection a unique character.

6. School

St Marys Public School is located on the southern end of the Western Commercial Centre. A pedestrian link is proposed at the northern end of the school connecting Carinya Avenue and Charles Hackett Drive. This will replace an existing pathway and connect Queen Street and the school through the new Square and central Queen Street's urban spine.

7. Recreation/Park

To the north of the Western Commercial Centre is the Recreation Park separated by the extension of Chapel Street west which links the Leisure Centre and creek area to the west. Chapel Street's extended boulevard treatment together with the northern adjacent green east-west corridor, allows the landscape elements to filter through the Town Centre. This combination of park and boulevard will replace the current car park to the north west of the Commercial Centre along Charles Hackett Drive. The park will represent historic watercourses and will be planted with local species. Active uses and pedestrian entrances will be encouraged along the northern side of the Commercial Centre.

D. Town Centre structure

Towns and cities are dependent upon their urban structure, i.e. their patterns of roadways and open spaces, to create a distinctive urban identity. This pattern not only distinguishes the urban centre from other centres but enables an urban centre to grow and incorporate a range of diverse activities and functions.

This DCP is primarily focused on the built form controls and providing appropriate controls to ensure the protection of pedestrian amenity within the Town Centre. However, it is worthwhile to highlight the broader civic objectives which underpin the workings of the DCP. These are:

- a) Reinforcing the role of Queen Street as the primary north/south axis and retaining the human scaled character of this boulevard;

- b) Introducing Chapel Street as the secondary east/west axis linking open green space to lower west (Wianamatta Creek);
- c) Creating both a centrally located Square and Park celebrating the junction of the above two main urban axes;
- d) Ensuring the distinctive panoramas and vistas to the western escarpment of the Blue Mountains are enhanced;
- e) Strengthening the Gateway Entrances; i.e. southern gateway entrance at the junction of Queen Street with the Great Western Highway as well as the northern public transport gateway entrance adjacent to the Railway Station;
- f) Improving permeability through the south western precincts of Western Commercial Centre, School and Southern Mixed Use as well as the Northern Mixed Use Precincts;
- g) Allowing greater access to the Town Centre at all levels by utilising peripheral routes, such as Charles Hackett Drive/Carinya Avenue to the west and Gidley Street and possible northern extensions to the east;
- h) Re-connecting the Duration Cottage Precinct to the Town Centre through more direct paths and roadways; and
- i) Positioning future public car parking facilities adjacent to major retail destinations and public transport interchanges.

All of the above urban design objectives assist in producing a focused urban image of St Marys Town Centre and the detail design issues of the DCP work in concert with achieving that end.

15.1. Land use controls

15.1.1 Residential development controls

A. Objectives

- a) To ensure that residential development provides a mix of dwelling types and sizes to cater for a range of household types;
- b) To ensure that dwelling layout is sufficiently flexible for the changing needs of residents over time;
- c) To ensure a sufficient proportion of dwellings include accessible layouts and features to accommodate the changing requirements of residents; and
- d) To ensure the provision of housing that will, in its adaptable features, meet the access and mobility needs of any occupant.

B. Controls

In addition to controls for apartment mix in Part 3 of the Residential Flat Design Code, the following controls apply:

- 1) Where residential units are proposed at ground level, a report must be provided with the development application demonstrating how future non-residential uses can be accommodated within the ground level design. The report must address:
 - a) Access requirements including access for people with a disability;
 - b) Any upgrading works necessary for compliance with the Building Code of Australia; and
 - c) Appropriate floor to ceiling heights.

- 2) For smaller developments of up to six dwellings, the proposal must demonstrate how the dwelling mix is appropriate to the locality.
- 3) For developments containing more than six dwellings, a mix of living styles, sizes and layouts is to be achieved by providing:
 - a) A mix of bed-sitter/studio, one bedroom, two bedroom and three bedroom apartments;
 - b) Bed-sitter apartments and one bedroom apartments must not be greater than 25% and not less than 10% of the total mix of apartments within each development; and
 - c) Two bedroom apartments are not to be more than 65% of the total mix of apartments within each development.
- 4) 10% of all dwellings or a minimum one dwelling, whichever is the greater, must be designed in accordance with the Australian Adaptable Housing Standard (AS 4299-1995), to be capable of adaptation for people with a disability or elderly residents.
- 5) Where possible, the mandatory adaptable dwellings shall be located on the ground floor. Adaptable dwellings located above the ground level of a building may only be counted towards the minimum required where lift access from the basement is available within the building.
- 6) The development application must be accompanied by certification from an accredited Access Consultant confirming that the adaptable dwellings are capable of being modified, when required by the occupant, to comply with the Australian Adaptable Housing Standard (AS 4299-1995).
- 7) Car parking and garages allocated to adaptable dwellings must comply with the requirements of the relevant Australian Standard regarding parking for people with a disability.

15.1.2 Mixed use development controls

A. Objectives

- a) To encourage a variety of mixed use developments in the Town Centre;
- b) To create lively streets and public spaces in the Town Centre;
- c) To increase the diversity and range of shopping and recreational activities for workers, residents and visitors;
- d) To enhance public safety by increasing activity in the public domain on week nights and on weekends;
- e) To minimise potential conflicts and achieve compatibility between different uses;
- f) To ensure that the design of mixed use developments addresses residential amenity;
- g) To create legible safe access and circulation in mixed use developments; and
- h) To ensure that mixed use developments address the public domain and the street.

B. Controls

- 1) Mixed use developments must provide flexible building layouts which allow greater adaptability of the floor area of, or tenancies on, the first floor of a building above the ground floor.
- 2) The ground floor of all mixed use developments is to have a minimum floor to ceiling height of 3.5m in order to provide for flexibility of future use. Above ground level,

minimum floor to ceiling heights are 3.3m for commercial office, 3.5m for active public uses, such as retail and restaurants, and 2.7m for residential uses.

- 3) The commercial and residential activities of the building are to have separate service provision, such as loading docks and residential access, servicing needs.
- 4) Mixed use developments are to provide commercial frontage (retail/business/office premises) as a part of the development as shown in Figure E15.4 for ground floor and Figure E15.5 for first floor. Variation may be considered to this control if it can be demonstrated that the proposed commercial use will not interfere with the amenity of the surrounding area. Variation may also be considered for residential at ground floor in order to provide adaptable housing.
- 5) Residential entries shall be clearly marked and provide direct access to the street. Vehicular access is to be from rear lanes, where practicable and possible. Pedestrian entrances are to address the main streets.
- 6) Commercial and residential uses should have clearly separate entries and vertical circulation.
- 7) Security access controls must be provided to all entrances into private areas, including car parks and internal courtyards.
- 8) Buildings are to front onto major streets with active uses.
- 9) Blank building walls at ground level are to be avoided.

15.2 Built form controls

Figure E15.4: Ground Floor Commercial



-  Area covered by St Marys Town Centre
-  Ground Floor Commercial

* Setbacks & building heights control apply.

Figure E15.5: First Floor Commercial



- Area covered by St Marys Town Centre
- First Floor Commercial

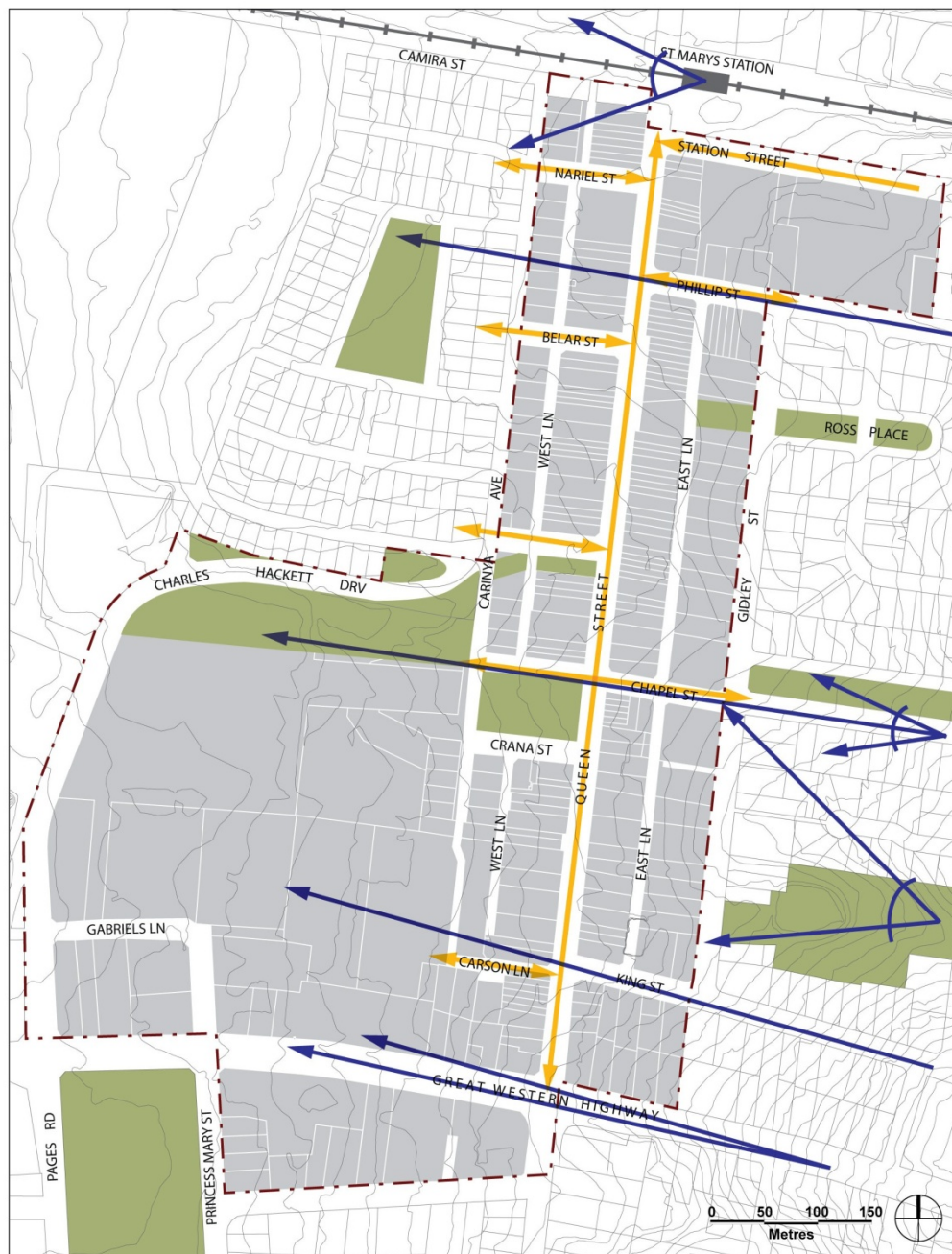
* Setbacks & building heights control apply.

A. Objectives

In addition to the general objectives of this Section, the objectives of this section are to:

- a) Establish an appropriate scale, dimension, form and separation of buildings;
- b) Provide a strong definition of the public domain;
- c) Achieve active street frontages with good physical and visual connections between buildings and the street;
- d) Ensure there is consistency in the main street frontages of buildings by having a common alignment to improve accessibility;
- e) Provide for pedestrian comfort and protection from weather conditions;
- f) Define the public street to provide spaces that are clear in terms of public accessibility and safety, and are easy to maintain;
- g) Ensure building depth and bulk is appropriate to the environmental setting and landform by providing for view sharing and good internal building amenity;
- h) Ensure building separation is adequate to protect amenity, daylight penetration and privacy between adjoining developments;
- i) Encourage mixed use development with residential components that achieve active street fronts and maintain good residential amenity;
- j) Achieve an articulation and finish of building exteriors that contribute to a high quality of design excellence;
- k) Provide for high quality landscape to contribute to the amenity of the Town Centre and a sustainable urban environment;
- l) Maintain and enhance important views from the Town Centre and railway concourse to surrounding natural landscape features as depicted in Figure E15.6: Views;
- m) Contribute to the legibility of the City; and
- n) Ensure that buildings are responsive to the character and heritage values of the St Marys Town Centre.

Figure E15.6: Views



- Area covered by St Marys Town Centre
- ← Regional - Views to mountains
- Local Views within Town Centre

15.2.1 Building to street alignment and street setbacks

A. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Establish consistent building alignments to the street;
- b) Provide street setbacks appropriate to building function and character;
- c) Establish the desired spatial proportions of the street and define the street edge;
- d) Create a transition between public and private space;
- e) Locate active uses, such as shopfronts, closer to pedestrian activity areas;
- f) Allow for street landscape character, where appropriate;
- g) Maintain sun access to the public domain; and
- h) Protect important views to the Blue Mountains.

B. Controls

- 1) Street building alignments are to be provided as specified in Figure E15.7.
- 2) Balconies may project up to 600mm into front building setbacks, provided the cumulative width of all balconies at that particular level totals no more than 50% of the horizontal width of the building façade, measured at that level.
- 3) Minor projections into front building lines and setbacks for sun shading devices, entry awnings and cornices are permissible.
- 4) Buildings along Queen Street must demonstrate that views to the Blue Mountains escarpment are maintained through the provision of technically accurate perspectives to the satisfaction of Council officers.

Figure E15.7: Specific Street Alignment and Street Setbacks



- Area covered by St Marys Town Centre
- 3.0m average
- 4.0m average
- Built to property boundary line

Where unspecified: Subject to prevailing conditions and merit assessment

15.2.2 Street frontage heights

A. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Provide consistent streetscapes through control of the built form visible from the public domain;
- b) Achieve comfortable street environments for pedestrians in terms of daylight, scale, sense of enclosure and wind mitigation as well as healthy environments for street trees;
- c) Allow sunlight access to new and existing significant public spaces in the Town Centre;
- d) Provide for an appropriate transition in building heights from key public spaces; and
- e) Maintain views to the Blue Mountains.

B. Controls

- 1) Buildings must comply with the relevant street frontage heights and setbacks for development above street frontage height as shown in Figure E15.8 and illustrated in Figures E15.9 to E15.14.
- 2) For development abutting/adjoining the Town Square and the railway precinct, applicants must undertake modelling as part of the development application to demonstrate that the development does not adversely overshadow the adjoining public places (Town Square etc.).
- 3) Development on or extending to Carinya Avenue must step down in height and demonstrate that the development does not adversely impact the abutting/adjoining residential area.

Figure E15.8: Street Frontage Heights



FIGURE 2.1: STREET FRONTAGE HEIGHTS

- Area covered by St Marys Town Centre
- Street frontage maximum height 6m applies
- Street frontage maximum height 9-12m applies
- Street frontage maximum height 16m applies
- Street frontage maximum height 24m applies
- Street frontage maximum height 32m applies

Where unspecified: Subject to prevailing conditions and merit assessment

Figure E15.9: Typical Sections







-  Area covered by St Marys Town Centre
-  Common areas
-  Extent of common areas
-  Typical Sections

Figure E15.10: Typical Section for Area A

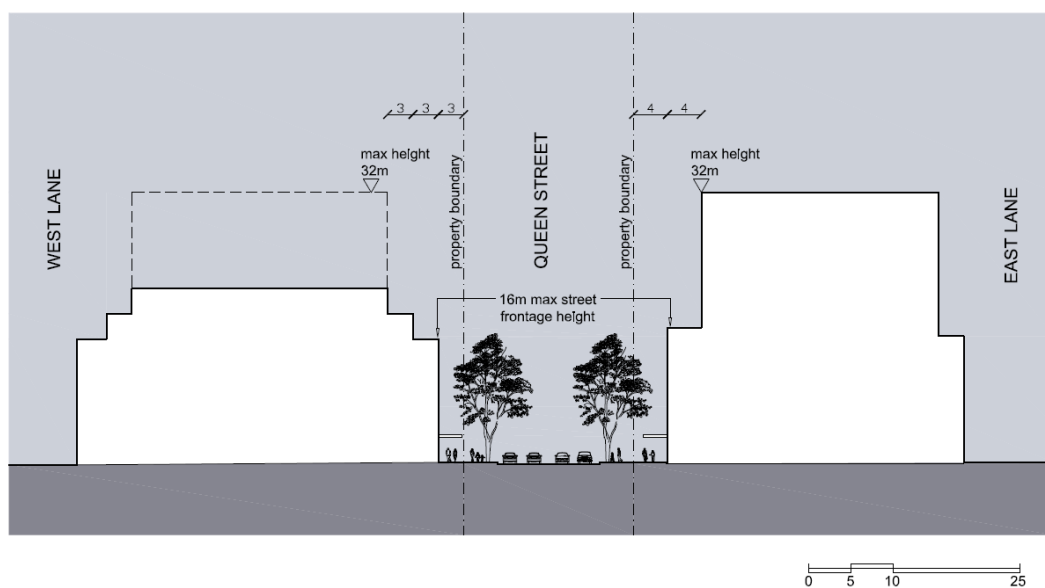
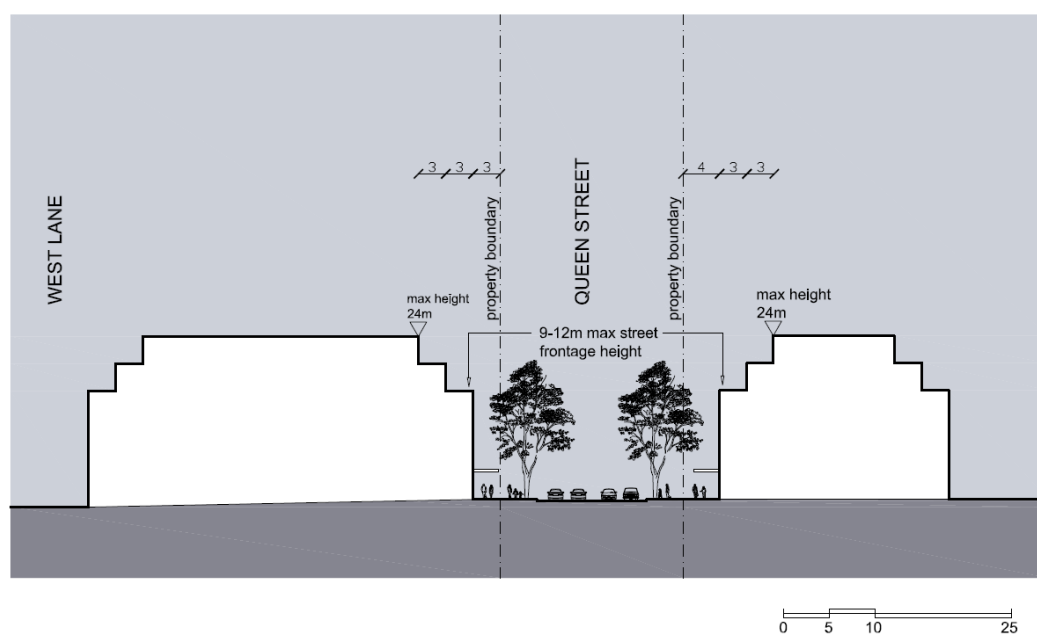


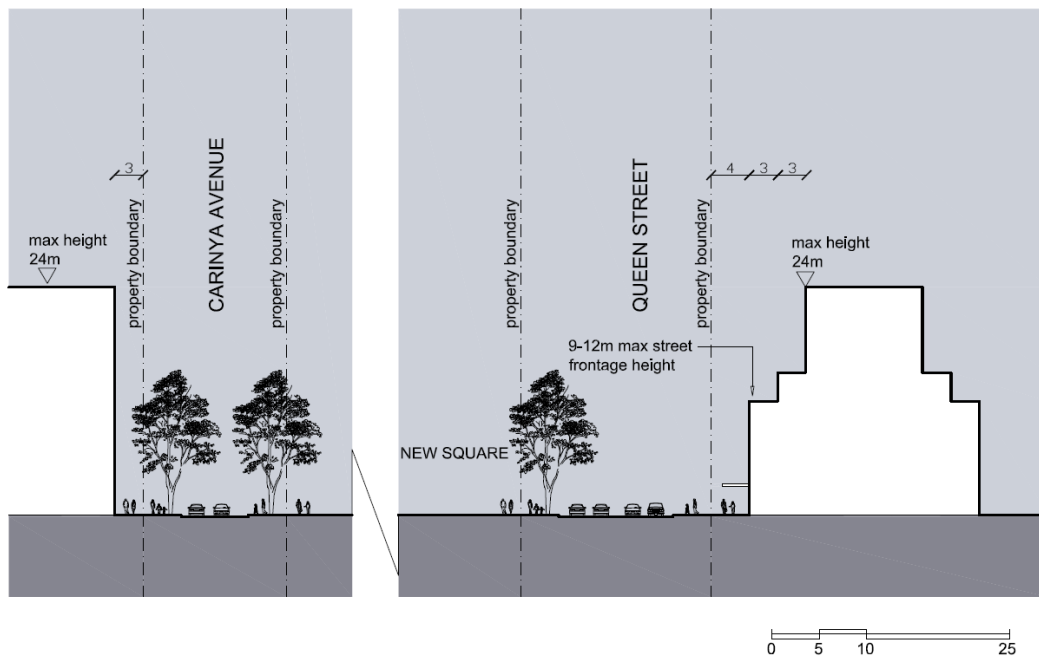
Figure E15.11: Typical Section for Area B



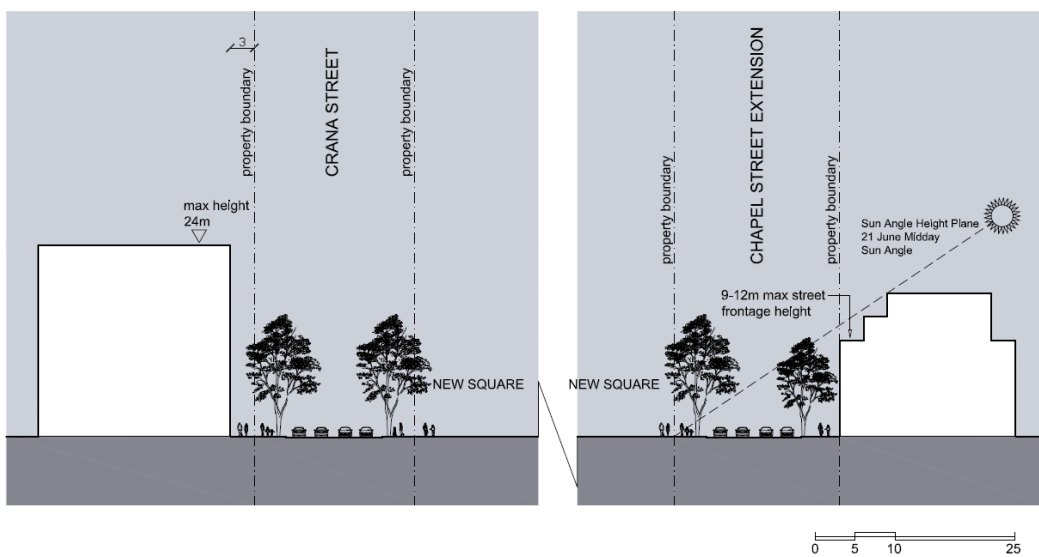
Note: Maximum height is subject to provision of adequate solar access to public domain and neighbouring properties.

Figure E15.12: Typical Section for Area C

East-West section



North-South section



Note: Maximum height is subject to provision of adequate solar access to public domain and neighbouring properties.

Figure E15.13: Typical Section for Area D

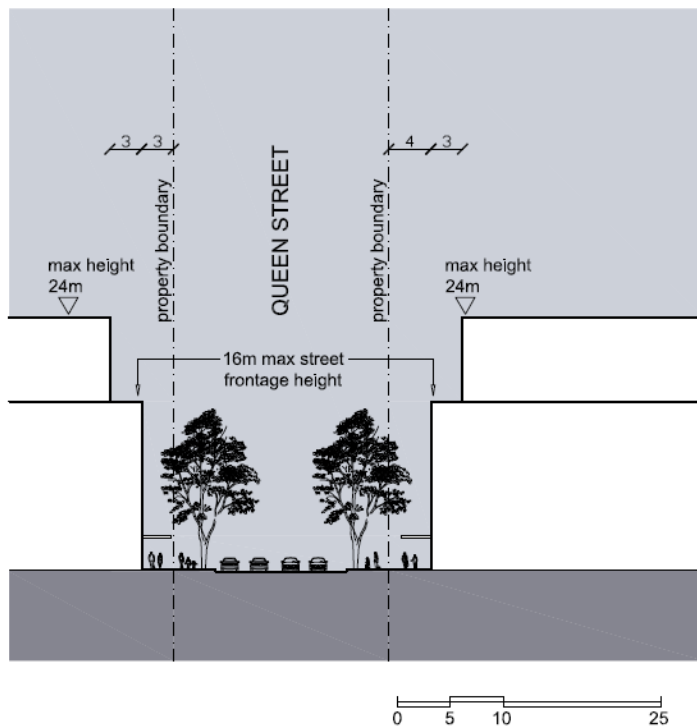
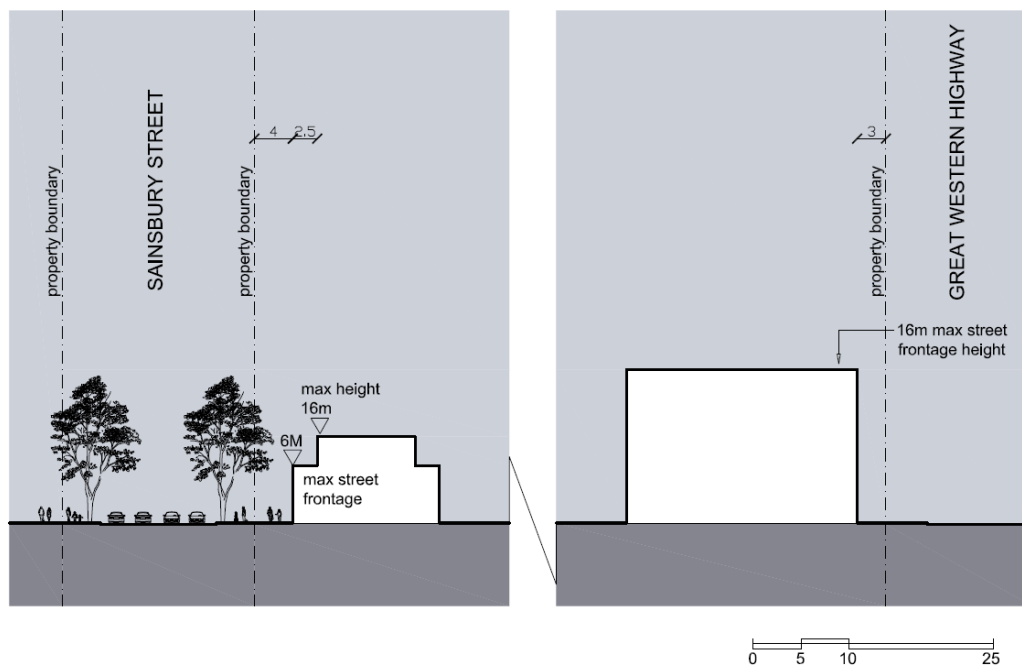


Figure E15.14: Typical Section for Area E



Note: Maximum height is subject to provision of adequate solar access to public domain and neighbouring properties.

15.2.3. Maximum building heights and lot layout requirements

A. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Ensure an appropriate scale between new development and street width, local context, adjacent buildings and public domain; and
- b) Ensure appropriate management of overshadowing, access to sunlight and privacy.

B. Controls

- 1) Building height will generally be restricted to a maximum podium height addressing the main streets (see Figures E15.09 to E15.14), with additional set backed residential development (with exception to buildings within the North West and North East Mixed Use Precincts which are considered as special precinct areas).

Note: The applicant should demonstrate that the prospective design does not adversely affect the solar access of neighbouring existing buildings particularly during winter solstice noon.

- 2) A minimum site width of 24m is required for any mixed use development.
- 3) Buildings will not extend or bridge over laneways (with the exception of the North West Mixed Use Precinct).
- 4) An access driveway of 3m is to be provided at the boundaries of an amalgamated block, when developed. This will result in the formation of a laneway of 6m on development of the adjacent amalgamated block. This laneway will be shared by both developments.

15.2.4. Building Depth and Bulk

A. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Provide viable and useable commercial floor space;
- b) Allow for view sharing and view corridors; and
- c) Reduce the apparent bulk and scale of buildings by breaking up expanses of building wall with modulation of form.

B. Controls

- 1) The maximum gross floor area and depth of buildings are specified in Table E15.1.
- 2) Notwithstanding the above, no building above 24m in height is to have a building length in excess of 50m.
- 3) All points of an office floor should be no more than 10m from a source of daylight (e.g. window, atria or light wells).
- 4) Atria, light wells and courtyards are to be used to improve internal building amenity and achieve cross ventilation and/or stack effect ventilation.

Table E15.1: Maximum gross floor area and depth of buildings

Area	Building Use	Condition	Maximum gross floor area	Maximum building depth (includes balconies)
Northern Mixed use	Residential	Above 12m height	710m ²	18 m
	Non-residential	Above 12m height	900m ²	25 m
Southern Mixed Use	Residential	Above 12m height	600m ²	18 m
	Non-residential	Above 12m height	900m ²	25 m
Queen Street Mixed Use	Residential	Above 12m height	-	18m
	Non-residential	Above 12m height	-	20m
All Other	All	Above 12m height	750m ²	18m

15.2.5 Boundary setbacks and building separation

A. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Ensure an appropriate level of amenity for building occupants in terms of daylight access, outlook, view sharing, ventilation, wind mitigation and privacy; and
- b) Achieve usable and pleasant streets and public domain areas in terms of wind mitigation and daylight access.

B. Controls

- 1) The minimum side and rear building setbacks are specified in Table E15.2.
- 2) Side and rear setbacks are required to be built to the property boundary. Where this cannot be achieved, the minimum setback shall be 6m to ensure that the setback area is sufficient to provide daylight access, useable outdoor space and landscaping.
- 3) If the specified setback distances cannot be achieved when an existing building is being refurbished or converted to another use, appropriate visual privacy levels are to be achieved through other means.

Table E15.2: Minimum side and rear building setbacks

Building height and use	Minimum Side and Rear Setback
Non-residential uses:	
– up to 12m	0m
– 12m to 24m	6m
– above 24m	9m
Residential uses up to 12m height:	
– non-habitable rooms	3m
– habitable rooms	6m
Residential uses 12m to 24m height:	
– non-habitable rooms	4.5m
– habitable rooms	9m
Residential uses above 24m height:	
– non-habitable rooms	6m
– habitable rooms	12m

15.2.6 Site coverage and deep soil zones

A. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Provide an area on sites that enables soft landscaping and deep soil planting, permitting the retention and/or planting of trees that will grow to a large or medium size;
- b) Limit building bulk on a site and improve the amenity of developments, allowing for good daylight access, ventilation and improved visual privacy; and
- c) Provide passive and active recreational opportunities.

B. Controls

- 1) The maximum site cover and minimum deep soil zone for development is specified in Table E15.3.

Table E15.3: Maximum site cover and minimum deep soil zone

Area	Maximum Site Cover	Minimum Deep Soil Zone (% of Site Area)
Northern Mixed Use	100%	0%
Mixed Use east of Queen street	100%	0%
Mixed Use west of Queen Street	50%	25%
Residential All other areas	70%	10%

- 2) The deep soil zone is to be provided in one continuous block. If multiple deep soil zones are provided, they must have a minimum dimension (in any direction) of 6m.
- 3) Where non-residential developments result in full site coverage and there is no capacity for water infiltration, the deep soil component must be provided on the structure, in accordance with the provisions of Sections 15.2.7 and 15.2.8 below. In such cases, compensatory stormwater management measures must be integrated within the development to minimise stormwater runoff.
- 4) Planting on roof tops or over carport structures can be provided as a component of the mixed use development.
- 5) Green spaces as community gardens/private open space between buildings and car park entrances can be provided at the rear of buildings.
- 6) Where deep soil zones are provided, they must accommodate existing mature trees as well as allowing for the planting of additional vegetation that will grow to be mature trees.
- 7) No structures, works or excavations that may restrict vegetation growth are permitted in deep soil zones (including, but not limited to, car parking, hard paving, patios, decks and drying areas).

15.2.7. Landscape design

A. Background

Landscape design includes the planning, design, construction and maintenance of all utility, open space and garden areas. Water sensitive urban design principles are encouraged and should be applied as much as possible. Good landscaping provides breathing space, passive and active recreational opportunities and enhances air quality. It is fundamental to the amenity and quality of outside space for residential flats.

The topography of St Marys Town Centre slopes from east to west towards the creek. The natural drainage patterns have been reflected in the east west landscape elements existing in the Town Centre. This existing pattern should be reinforced by allowing deep planting zones between the proposed east-west building forms on either side of Queen Street creating green corridors. Figure E15.15 shows how existing green links, such as Charles

Hackett Drive, will be extended to Queen Street via the existing Kungala Street open space. Ross Place will also be extended to East Lane.

Where streets vary in scale and character, trees and plantings should be used to enhance the character of each street and place, and create diversity through the Town Centre. Many of the existing local parks should be upgraded to improve circulation, recreation opportunities and ecological value. The design of each park and open space area should reflect the function of the place, its existing or potential character, and its place in the overall structure and hierarchy of the public domain. The design of these spaces should also contribute to providing a good amount of public amenity within the Town Centre.

B. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Ensure that the use of potable water for landscaping irrigation is minimised;
- b) Ensure landscaping is integrated into the design of development;
- c) Add value and quality of life for residents and occupants within a development in terms of privacy, outlook, views and recreational opportunities;
- d) Give the Town Centre a strong landscape character and contribute to the reduction of surface stormwater runoff;
- e) Introduce small deciduous trees on east-west streets in the commercial core, and retain sunlight penetration to the south side of streets;
- f) Create an opportunity of visual and symbolic interpretation with the landscape of regional parklands, the mountains and historic watercourses;
- g) Create an ongoing City ecology by using appropriate species for the area; and
- h) Select predominantly evergreen trees to reduce the impact of concentrated seasonal leaf drop.

C. Controls

- 1) Recycled water should be used to irrigate landscaped areas.
- 2) Commercial and retail developments are to incorporate planting into accessible outdoor spaces.
- 3) Remnant vegetation must be maintained throughout the site, wherever practicable.
- 4) A long term landscape concept plan must be provided for all landscaped areas, including the deep soil zone, in accordance with Landscape Design Section. The plan must outline how landscaped areas are to be maintained for the life of the development.
- 5) Landscaping concepts should be guided by Figure E15.15.

Figure E15.15: Green Links and Landscaping Framework



- Area covered by St Marys Town Centre
- Existing avenue trees
- Small deciduous trees
- East-west overland flow corridors (framework of evergreen trees)
- Enhanced park planting
- Opportunity for enhanced carpark planting
- Enhanced/new pedestrian plaza or square
- Enhanced streetscape as entry statement & 'gateway' precinct
- Opportunity for green roof
- Existing Parks

15.2.8 Planting on structures

A. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Contribute to the quality and amenity of open space on roof tops and internal courtyards;
- b) Encourage the establishment and healthy growth of greening in urban areas; and
- c) Minimise the use of potable water for irrigating planting on structures.

B. Controls

- 1) Planting should be designed for optimum conditions for plant growth by:
 - a) Providing soil depth, soil volume and soil area appropriate to the size of the plants to be established;
 - b) Providing appropriate soil conditions and irrigation methods; and
 - c) Providing appropriate drainage.
- 2) Planters should be designed to support the appropriate soil depth and plant selection by:
 - a) Ensuring planter proportions accommodate the largest volume of soil possible and soil depths to ensure tree growth; and
 - b) Providing square or rectangular planting areas rather than narrow linear areas.
- 3) Minimum soil depths should be increased in accordance with:
 - a) The mix of plants in a planter, for example, where trees are planted in association with shrubs, groundcovers and grass;
 - b) The level of landscape management, particularly the frequency of irrigation;
 - c) Anchorage requirements of large and medium trees; and
 - d) Soil type and quality.

15.3 Other controls

15.3.1 Pedestrian amenity

The pedestrian environment provides people with their primary experience of and interface with the Town Centre. This environment needs to be safe, functional and accessible to all. It should provide a wide variety of opportunities for social and cultural activities.

Pedestrian amenity incorporates all those elements of individual developments that directly affect the quality and character of the public domain. The pedestrian amenity provisions are intended to achieve a high quality of urban design and pedestrian comfort in the public spaces of the Town Centre.

The Town Centre's lanes, arcades and through site links should form an integrated pedestrian network providing choice of routes at ground level for pedestrians. The controls in this section aim to increase the vitality, safety, security and amenity of the public domain by:

- a) Encouraging future through site links at ground level;
- b) Ensuring active street frontages and positive building address to the street;
- c) Ensuring provision of awnings as shown in Figure E15.18; and
- d) Protecting significant views and vistas along streets.

1. Permeability

A. Objectives

- a) To improve access in the Town Centre by providing through site links as redevelopment occurs;
- b) To retain and enhance existing through site links as redevelopment occurs;
- c) To encourage active street fronts along the length of through site links where possible;
- d) To provide for pedestrian amenity and safety;
- e) To retain and develop lanes as useful and interesting pedestrian connections as well as for service access; and
- f) To improve the permeability of large sites when they are redeveloped for more intensive uses.

B. Controls

- 1) Through site links are to be provided as shown in E15.16 with accessible paths of travel that are:
 - a) A minimum width of 4m for its full length and clear of all obstructions including columns, stairs, etc;
 - b) Direct and publicly accessible thoroughfares for pedestrians; and
 - c) Open-air for its full length and have active frontages or a street address.
- 2) Existing dead end lanes are to be extended through to the next street as redevelopment occurs.
- 3) New through site links should be connected with existing and proposed through block lanes, shared zones, arcades and pedestrian ways and opposite other through site links.
- 4) Existing publicly and privately owned links are to be retained.
- 5) Signage is to be located at street entries indicating public access through the site as well as the street to which the link connects.
- 6) Arcades are to:
 - a) Have a minimum width of 4m for the full length which is clear of all obstructions including columns, stairs, etc;
 - b) Be direct and publicly accessible for pedestrians during business trading hours;
 - c) Be designed as an accessible path of travel for persons with a disability and incorporate the 'safer by design' principles;
 - d) Have active frontages on either side for the full length;
 - e) Where practical, have access to natural light for at least 30% of the length; and
 - f) Where enclosed, have clear glazed entry doors to at least 50% of the entrance.
- 7) Lanes are to be designated pedestrian routes that are:
 - a) Accessible paths of travel, with a minimum width of 6m for the full length, which is clear of all obstructions;
 - b) Designed, paved and well lit; and
 - c) Appropriately signposted indicating the street(s) to which the lane connects.

Figure E15.16: Existing and Desired Links



2. Active street frontages and address

A. Objectives

- To promote pedestrian activity and safety in the public domain;
- To maximise active street fronts in St Marys Town Centre;
- To define areas where active streets are required or outdoor dining is encouraged; and

- d) To encourage an address to the street outside of areas where active street frontages are required.

B. Controls

- 1) Active street fronts must be provided in locations as shown in the LEP maps.
- 2) Outdoor dining areas are encouraged in areas shown in Figure E15.17.
- 3) Active frontage uses are defined as one or a combination of the following, at street level:
 - a) An entrance to retail premises;
 - b) A shop front;
 - c) Glazed entries to commercial and residential lobbies occupying less than 50% of the street frontage, to a maximum of 12m frontage;
 - d) A café or restaurant if accompanied by an entry from the street;
 - e) Active office uses, such as a reception, if visible from the street; and
 - f) A public building, if accompanied by an entry.
- 4) Ground floor active street frontage uses are to be at the same level as the adjoining footpath and must be directly accessible from the street.
- 5) Restaurants, cafes and the like are to consider providing openable shop fronts. A separate approval from Council is required under the Roads Act and Local Government Act for outdoor street dining.
- 6) Only open grill or transparent security shutters are permitted to retail frontages.
- 7) Street address is defined as entries, lobbies, and habitable rooms with clear glazing to the street. It is required on the ground level of buildings and should not be more than 1.2m above the street level.
- 8) Residential developments are to provide a clear street address and direct pedestrian access off the primary street front, and allow for residents to overlook all surrounding streets.
- 9) Large developments should provide multiple entrances including an entrance on each street frontage.
- 10) Residential buildings are to provide not less than 65% of the lot width as street address.

Figure E15.17: Outdoor dining encouraged



- Area covered by St Marys Town Centre
- Outdoor dining encouraged

3. Safety and security

A. Objectives

- a) To minimise opportunities for crime by incorporating environmental design in the development;
- b) To ensure developments are safe and secure for pedestrians;
- c) To contribute to the safety of the public domain; and
- d) To encourage a sense of ownership over public and communal open spaces.

B. Controls

- 1) Developments are to address the provisions of the Site Planning and Design Principles Section of this DCP as it relates to Crime Prevention through Environmental Design (CPTED) principles.
- 2) Building design, particularly for higher density residential buildings, are to allow for passive surveillance of public and communal spaces, accessways, entries and driveways.
- 3) For large scale retail and commercial development with a gross floor area of over 5,000m², a 'safety by design' assessment by a qualified consultant, is to be provided in accordance with the CPTED principles.
- 4) Certain types of development will be referred to Council's Community Safety Officer and, where appropriate, NSW Police in accordance with the CPTED protocol between Penrith City Council and NSW Police.

4. Awnings

A separate approval to erect an awning over the road reserve including a footpath will be required under the Roads Act and the Local Government Act.

A. Objectives

- a) To provide shelter from wind and rain for public streets where most pedestrian activity occurs;
- b) To address the streetscape by providing a consistent street frontage in the Town Centre; and
- c) To provide a visually integrated streetscape.

B. Controls

- 1) Continuous street frontage awnings are to be provided for all new developments as indicated in Figure E15.18.
- 2) Awnings should generally:
 - a) Be a minimum 2.8m deep where street trees are not required, otherwise a minimum 2.4m deep;
 - b) Have a minimum soffit height of 3.2m and a maximum of 4m;
 - c) Be stepped for design articulation or to accommodate sloping streets, integral with the building design and not exceed 700mm;
 - d) Be low profile, with slim vertical fascias or eaves (generally not to exceed 300mm height); and

- e) Be setback from the kerb to allow for clearance of street furniture, trees, etc (minimum 600mm).
- 3) Awning design must match building facades and be complementary to those of adjoining buildings.
- 4) Awnings must wrap around corners for a minimum of 6m.
- 5) Under-awning lighting, recessed into the soffit of the awning or wall mounted onto the building is to be provided to facilitate night use and to improve public safety.
- 6) One under-awning sign may be attached to the awning and must be 6m away from the sign of the adjoining property.

Figure 15.18: Awnings



5. Vehicle footpath crossings

A. Objectives

- a) To make vehicle access to buildings more compatible with pedestrian movements;
- b) To reduce the impact of vehicular access on the public domain; and
- c) To ensure vehicle entry points are integrated into building design and contribute to the building design.

B. Controls

- 1) No additional vehicle entry points will be permitted into the parking or service areas of development along streets with significant pedestrian circulation. (See Figure E15.19).
- 2) In all other areas, one vehicle access point only (including the access for service vehicles and parking for non-residential uses within mixed use developments) will be permitted.
- 3) Where practicable, vehicle access is to be from lanes and minor streets rather than primary street fronts or streets with major pedestrian activity.
- 4) Where practicable, adjoining buildings are to share or amalgamate vehicle access points. Internal on-site signal equipment is to be used to allow shared access. Where appropriate, new buildings should provide vehicle access points so that they are capable of shared access at a later date.
- 5) Vehicle access widths and grades are to comply with the Australian Standard.
- 6) Vehicle access ramps parallel to the street frontage will not be permitted.
- 7) Vehicle entry points are to be integrated into building design.
- 8) Doors to vehicle access points are to be roller shutters or tilting doors fitted behind the building facade.
- 9) Vehicle entries are to have high quality finishes to walls and ceilings as well as high standard detailing. No service ducts or pipes are to be visible from the street.
- 10) Porte cocheres disrupt pedestrian movement and do not contribute to active street frontage. They may only be permitted for hotels and major tourist venues subject to urban design, streetscape, heritage and pedestrian amenity considerations.
- 11) If justified, porte cocheres are to be internal to the building with one combined vehicle entry and exit point, or one entry and one exit point on two different street fronts of the development.
- 12) In exceptional circumstances for buildings with one street frontage only, an indented porte cochere with separate entry and exit points across the footpath may be permitted, as long as it is constructed entirely at the footpath level, provides an active frontage at its perimeter and provides for safe and clear pedestrian movement along the street.

6. Building exteriors

A. Objectives

The objectives of this section are to ensure that buildings in St Marys Town Centre:

- a) Contribute positively to the streetscape and public domain by means of high quality architecture and robust selection of materials and finishes;
- b) Provide richness of detail and architectural interest especially at visually prominent parts of buildings, such as lower levels and roof tops;

- c) Present appropriate design responses to nearby development that complement the streetscape;
- d) Clearly define the adjoining streets, street corners and public spaces and avoid ambiguous external spaces with poor pedestrian amenity and security;
- e) Maintain a pedestrian scale in the articulation and detailing of the lower levels of the building; and
- f) Contribute to a visually interesting skyline.

B. Controls

- 1) Adjoining buildings are to be considered when designing new buildings and extensions to existing buildings in terms of:
 - a) Appropriate alignment and street frontage heights;
 - b) Setbacks above street frontage heights;
 - c) Selection of appropriate materials and finishes;
 - d) Facade proportions including horizontal or vertical emphasis; and
 - e) Provision of enclosed corners at street intersections.
- 2) Balconies and terraces should be provided, particularly where buildings overlook parks and on low rise parts of buildings. Gardens on the top of setback areas of buildings and on roofs are encouraged.
- 3) Façades are to be articulated so they address the street and add visual interest.
- 4) External walls should be constructed of high quality and durable materials and finishes with 'self-cleaning' attributes, such as face brickwork, rendered brickwork, stone, concrete and glass.
- 5) To assist articulation and visual interest, large expanses of any single material are to be avoided.
- 6) Glazing for retail uses is to be maximised, but broken into sections to avoid large expanses of glass.
- 7) Highly reflective finishes and curtain wall glazing are not permitted above ground floor level.
- 8) A materials sample board and schedule are required to be submitted with applications for development over \$1 million or for that part of any development built to the street edge.
- 9) The design of roof plant rooms and lift overruns is to be integrated into the overall architecture of the building, and in residential buildings, may be screened by roof pergolas.

15.3.2 Access, parking and servicing

This section contains detailed objectives and controls on pedestrian access, vehicular access and site facilities, including refuse collection and removal. The Transport, Access and Parking Section of this DCP provides more information in this regard. However, the following controls apply specifically to the St Marys Town Centre:

1. Pedestrian access and mobility

A. Objectives

The objective of this section is to provide safe and easy access to buildings to enable better use and enjoyment by people regardless of age and physical condition, whilst also contributing to the vitality and vibrancy of the public domain.

B. Controls

- 1) The design and provision of facilities for persons with a disability, including car parking, must comply with Australian Standard AS 1428 Pt 1 and 2 (as amended) and the Commonwealth Disability Discrimination Act 1992 (as amended).
- 2) Barrier free access is to be provided to not less than 20% of dwellings in each development and associated common areas.
- 3) The development must provide at least one main pedestrian entrance with convenient barrier free access to the ground floor, and have a direct link to an identified accessible path of travel in the adjoining public domain.
- 4) The development must provide accessible internal access, linking to public streets and building entry points.
- 5) Pedestrian access ways, entry paths and lobbies must use durable materials commensurate with the standard of the adjoining public domain (street) with appropriate slip resistant materials, tactile surfaces and contrasting colours.
- 6) A report from an accredited access consultant is to be submitted with the development application, indicating the proposal's compliance with AS1428. If approved, Council may impose a condition on the development consent requiring the submission of a compliance certificate (or other such document) from an accredited access consultant attesting to the development's compliance with AS1428, and that a person with a disability can access the development.

2. Vehicular driveways and manoeuvring areas

A. Objectives

- a) To minimise the impact of vehicle access points on the quality of the public domain;
- b) To minimise the impact of driveway crossovers on pedestrian safety and streetscape amenity; and
- c) To minimise stormwater runoff from uncovered driveways and parking areas.



B. Controls

- 1) Driveways should be:
 - a) Provided from lanes and secondary streets rather than the primary street, wherever practical;
 - b) Located taking into account any services within the road reserve, such as power poles, drainage inlet pits and existing street trees;
 - c) Setback a minimum 6m from the tangent point in the kerb; and
 - d) Located to minimise noise and amenity impacts on adjacent residential development.
- 2) Vehicle access is to be integrated into the building design so as to be visually recessive.

- 3) All vehicles must be able to enter and leave the site in a forward direction without the need to make more than a three point turn.
- 4) Design of driveway crossings must be in accordance with Council's specifications for vehicle crossovers, with any works within the footpath and road reserve subject to a Section 138 Roads Act approval.
- 5) The car park and all its components including, but not limited to, driveways, aisle and ramp widths, ramp grades, air space dimensions are to comply with AS 2890. Note that private car spaces are to be designed for full door opening in accordance with AS 2890.1. (AS 2890.1-2004 requires 2.6m).
- 6) Access ways to underground parking should be sited to minimise noise impacts on adjacent habitable rooms, particularly bedrooms.
- 7) The driveway threshold shall be designed to prevent ingress of stormwater and/or flooding from local catchments.
- 8) No vehicle entry will be permitted via Queen Street (See Figure E15.19).

Figure E5.19: Restrictions on Vehicular Entries



-  Area covered by St Marys Town Centre
-  Additional vehicular entries not permitted

3. Site Facilities and Services

A. Objectives

- a) To ensure that the design and location of site facilities (such as clothes drying areas, mail boxes, etc.) are integrated within the development and are unobtrusive;
- b) To ensure that site services and facilities are adequate for the nature and quantum of development; and
- c) To establish appropriate access and location requirements for servicing.

B. Controls

- 1) Letterboxes should be integrated into a wall immediately adjacent to the building entrance(s). Where there are a number of entrances into the building, the letterboxes located at each entrance should service the tenancies that will utilise that building entrance.
- 2) Letterboxes shall be secure and large enough to accommodate articles such as newspapers.
- 3) Telecommunication infrastructure should be built into the development and predominantly below ground, incorporating the following services fundamental in the effective operation of businesses, home businesses and dwellings:
 - a) Multiple telecom services including high speed internet (including broadband), voice and data systems; and
 - b) Cabling from all telephone lines and cable TV.
- 4) Where a master antenna is provided, the antenna must be sited in a location that is least visible from surrounding public spaces/ open areas.
- 5) Air conditioning units, service vents and other associated structures should be:
 - a) Located away from street frontages and lanes;
 - b) Located in a position where the likely impact is minimised; and
 - c) Adequately setback from the perimeter wall or roof edge of buildings.
- 6) Where they are to be located on the roof, they should be integrated into the roofscape design and in a position where such facilities do not become a feature in the skyline at the top of building(s).
- 7) Council's policy on rainwater tanks for new dwellings provides locational and connection requirements for dwellings in residential areas.
- 8) Separate waste storage and collection areas are to be provided for domestic and commercial waste.
- 9) For developments comprising residential uses, a separate storage and collection area for bulky waste (such as cardboard boxes) and old or discarded furniture/appliances shall be provided.
- 10) Vehicular access to the waste collection areas should be from rear lanes, side streets and right of ways.
- 11) The responsibility for the ongoing management of waste facilities must be determined prior to work commencing on the development. Details of the management of waste by future tenants are to form part of the Waste Management Plan for the development. (See Appendix F3 for details on waste management plans).
- 12) Loading/unloading areas are to be:

- a) Integrated into the design of developments;
 - b) Separated from car parking and waste storage and collection areas;
 - c) Located away from the circulation path of other vehicles;
 - d) Designed for commercial vehicle circulation and access complying with AS2890.2; and
 - e) Vehicles are to enter and exit the site in a forward direction.
- 13) Separate loading/unloading areas are to be provided for commercial/retail and residential uses.
- 14) Generally, provision must be made for all emergency vehicles to enter and leave the site in a forward direction, particularly NSW Fire Brigade vehicles where:
- a) NSW Fire Brigade cannot park their vehicles within the road reserve due to the distance of hydrants from the building or restricted vehicular access to hydrants; or
 - b) Otherwise required by the NSW Fire Brigade's Code of Practice – Building Construction – NSWFB Vehicle Requirements.
- 15) For developments where NSW Fire Brigade vehicle(s) are required to enter the site, the circulation path and access/egress provision is to comply with the NSW Fire Brigade's Code of Practice – Building Construction – NSWFB Vehicle Requirements.

4. On-site parking options

A. Background

On-site parking includes underground (basement), surface (at-grade) and above ground parking, including parking stations. Most controls that relate to on-site car parking are included in the Transport, Access and Parking Section of this DCP. The following section provides some on-site car parking options for St Marys Town Centre.

B. Objectives

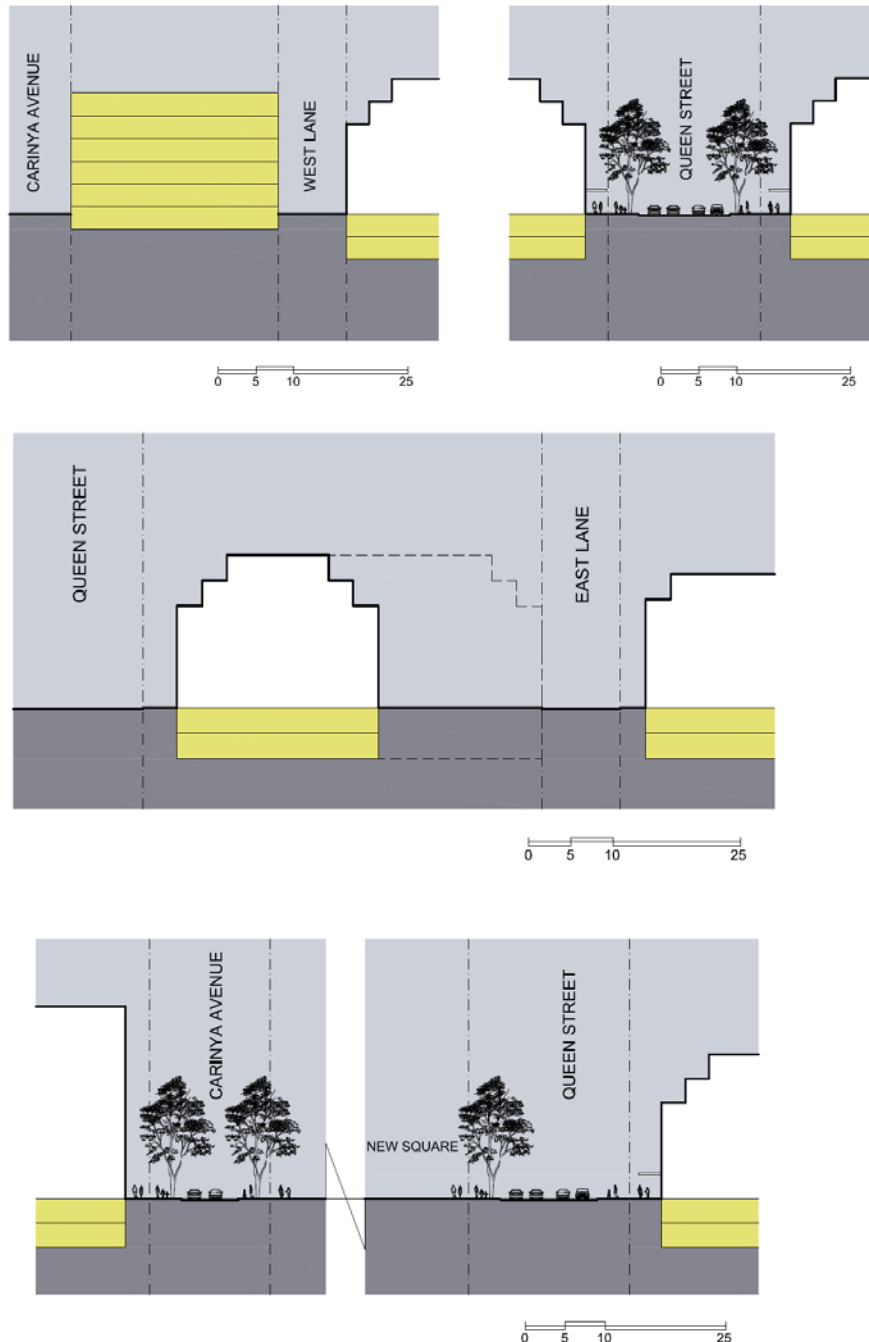
- a) To facilitate an appropriate level of on-site parking provision in the Town Centre to cater for a mix of development types;
- b) To minimise the visual impact of on-site parking; and
- c) To provide adequate space for parking and manoeuvring of vehicles.

C. Controls

- 1) Car parking above ground level is to have a minimum floor to ceiling height of 2.8m so it may be adapted to another use in the future.
- 2) Where possible, natural ventilation is to be provided to underground parking areas with ventilation grilles and structures that are:
 - a) Integrated into the overall façade and landscape design of the development;
 - b) Located away from the primary street façade; and
 - c) Oriented away from windows of habitable rooms and private open space areas.
- 3) Proposals for basement parking areas are to be accompanied with a geotechnical report, prepared by an appropriately qualified professional, and any other supporting information.
- 4) Figure E15.20 contains options for car parking at St Marys Town Centre.

- 5) Car parking layouts are to comply with the relevant Australian Standards.

Figure E15.20: Underground and Multi Deck Parking Examples



15.3.3 Precinct controls

Due to their size and/or strategic importance in the Town Centre, specific design principles and development outcomes have been identified for the sites identified in Figure E15.21.

Redevelopment of these sites should implement design principles and outcomes expressed in the clauses and diagrams that follow.

Figure E15.21: Areas Where Precinct Controls Apply



- Area covered by St Marys Town Centre
- 3 Precinct areas

1. Precinct 1

Precinct 1 is the area generally bounded by Station Street to the north, Queen Street to the west, Phillip Street to the south and the property boundary between the commercial centre and the adjacent residences to the east as shown in Figure E15.22.

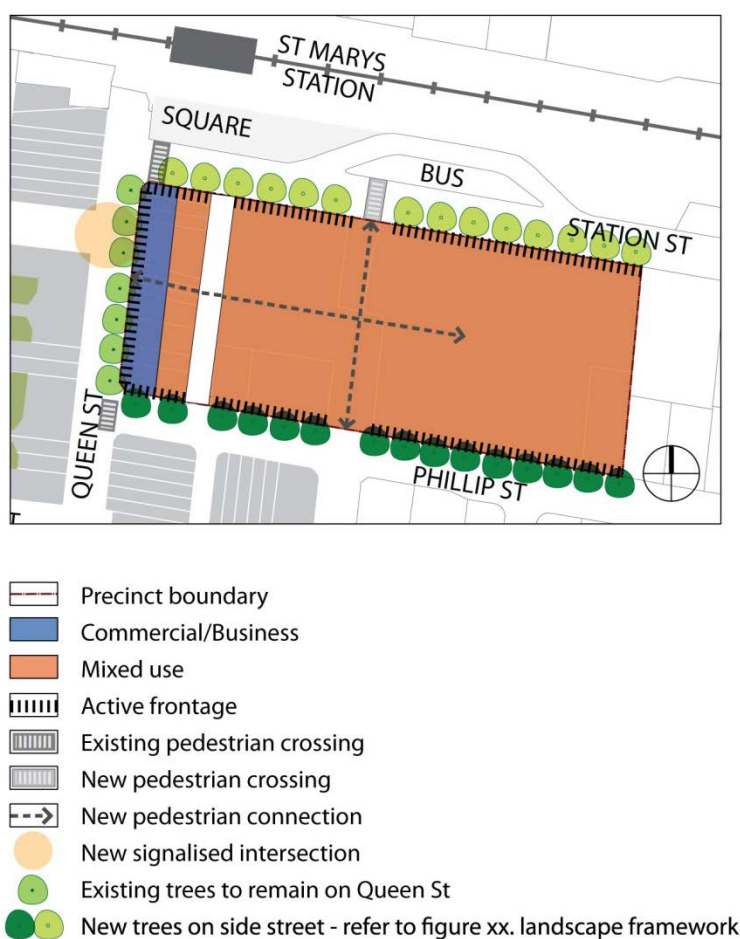
Development of the site must adhere to the following design principles:

- 1) Relocate the redundant public lane (East Lane) to provide north-south pedestrian connectivity through the site from Phillip Street to Station Street in the prolongation of Gidley Street;
- 2) Provide pedestrian connectivity in the form of an east/west arcade from Queen Street to the north south pedestrian connection through from Phillip to Station Streets;
- 3) Provide high quality and active public domain interface with new and existing public streets;
- 4) Investigate opportunities for expansion of the shopping centre to the west toward Queen Street; and
- 5) Provide roof top gardens for communal use.

Development of the site should provide the following outcomes:

- 1) Streets and pedestrian connections:
 - a) Improve and upgrade pedestrian amenity of East Lane from Phillip Street northwards;
 - b) Provide a new pedestrian access from Phillip to Station Streets in the alignment of Gidley Street;
 - c) Create active shop fronts to Station, Queen and Phillip Streets in the section from Queen to Gidley Streets; and
 - d) Provide a high quality architectural outcome for the Station Street façade emphasising residential entrances to buildings.
- 2) Land ownership:
 - a) Consolidate existing land ownership patterns to allow orderly development of land.
- 3) Public domain interface:
 - a) Provide active frontage/land uses along Station, Queen and Phillip Streets.
- 4) Built form:
 - a) Construct buildings to the street alignment of Station Street and up to a maximum of 32m. Buildings are to be setback on Queen Street by 4m and to a maximum height of 16m for a further depth of 15m. The 'sun angle height plane' should be considered for residential buildings within the site and to the footpath on the southern side of Phillip Street.

Figure E15.22: Precinct 1



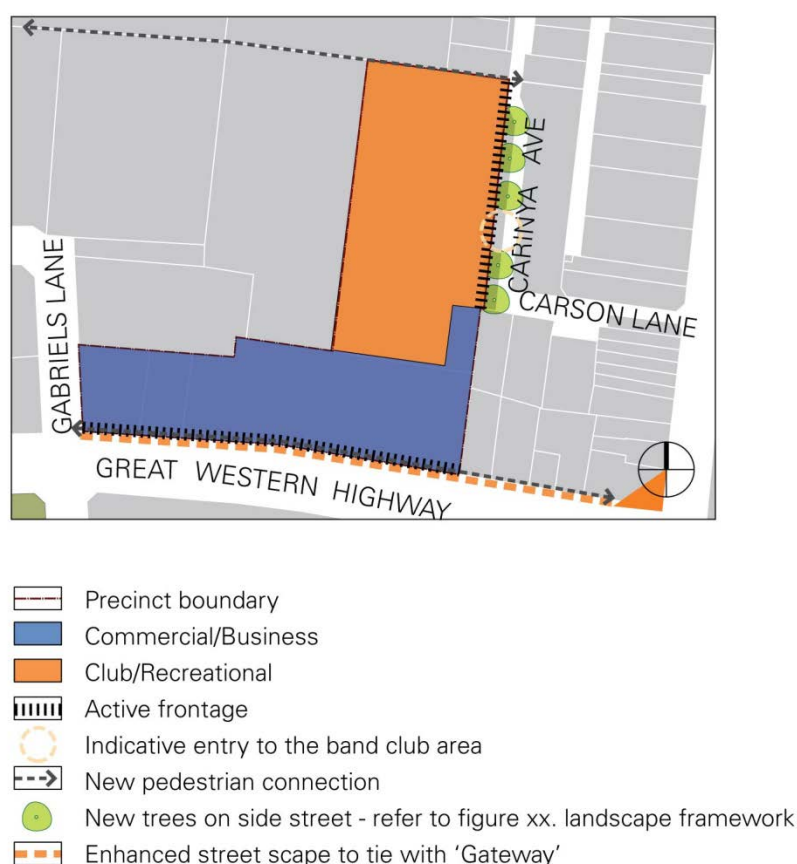
2. Precinct 2

Precinct 2 is the area bounded by Carinya Avenue to the east, Council owned land to the north, the school to the west and the band club to the south as shown in Figure E15.23.

Development of the site must adhere to the following design principles:

- 1) Provide good east-west and north-south connectivity with widened public street and pedestrian connections from the streets to St Marys Primary School that are clearly integrated with the existing street network and are safe;

Figure E15.23: Precinct 2



- 2) Locate non-residential uses towards the southern end of the site where they will be in closer proximity to the Band Club but still connected to the Town Square Precinct;
- 3) Provide a high quality public domain interface with existing public streets; and
- 4) Consider the interface with St Marys Primary School.

Development of the site should provide the following outcomes:

- 1) Streets and pedestrian connections:
 - a) Provide a widened section of Carinya Avenue from Crana Street to Carson Lane;
 - b) Provide a new pedestrian connection, at the northern boundary of the precinct from Carinya Avenue to Charles Hackett Drive; and
 - c) Provide an active frontage to Carinya Avenue.
- 2) Open space:
 - a) Provide public open space (passive recreation) in the form of a landscaped car park in the area in front of the precinct along Carinya Avenue.
- 3) Land uses:
 - a) Locate a mix of tourist and visitor accommodation and entertainment facilities.
- 4) Public domain interface:
 - a) Front building setbacks as indicated to achieve alignment on Carinya Avenue; and
 - b) Plant street trees along Carinya Avenue.

3. Precinct 3

Precinct 3 is the area bounded by Carinya Avenue to the east, Charles Hackett Drive to the west, the park on the southern side of Charles Hackett Drive to the north and the St Marys Primary School to the south as shown in Figure E15.24.

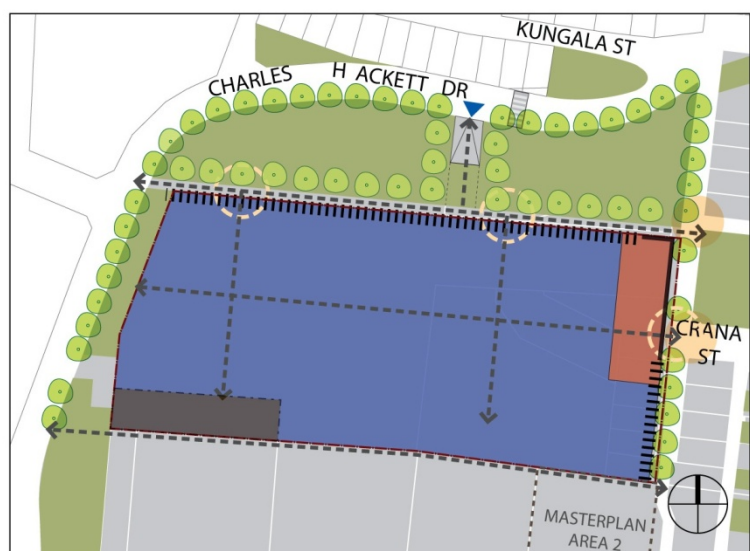
Development of the site must adhere to the following design principles:













- 1) Provide clearly visible entry points to the east at Carinya Avenue in line with Crana Street and adjacent to the Town Square;
- 2) Provide opportunities for residential or commercial uses at the eastern end of the precinct overlooking the Town Square to a maximum height of 24m ensuring that the residences have a Carinya Avenue address;
- 3) Consolidate retail uses on the remainder of the site;
- 4) Provide car parking under the new retail with access via Charles Hackett Drive (north);
- 5) Consolidate loading and service access to retail development on Charles Hackett Drive (west);
- 6) Provide a high quality and active public domain interface to Carinya Street and to the park on the northern side of the precinct;
- 7) Provide pedestrian connections through the centre; and
- 8) Provide roof top gardens for communal use.

Development of the site should provide the following outcomes:

- 1) Streets and pedestrian connections:
 - a) Provide a high quality new public park to the north of the precinct to replace the existing car park;
 - b) Provide a new pedestrian connection and entrance to the Centre at the Town Square in line with Crana Street as illustrated;
 - c) Provide access to an underground car park from Charles Hackett Drive (north) that does not interrupt pedestrian flow of the park from east to west; and
 - d) Provide service and delivery access from Charles Hackett Drive (west) at the southern edge of the precinct.
- 2) Land uses:
 - a) Locate commercial land uses as indicated in Figure E15.24; and
 - b) Locate mixed land uses as indicated in Figure E15.24.
- 3) Public domain interface:
 - a) Provide active frontage and land uses to the Town Square along Carinya Street and along the park edge to the north;
 - b) Front building setbacks as indicated; and
 - c) Provide a landscaped corridor of mature trees on the northern side of the precinct.

Figure E15.24: Precinct 3



-  Precinct boundary
-  Commercial/Business
-  Mixed use
-  Service area & access
-  Active frontage
-  Special architectural treatment for building frontage
-  Indicative location of entry plaza
-  New pedestrian crossing
-  New pedestrian connection
-  New signalised intersection
-  New trees on side street - refer to figure xx. landscape framework
-  Access ramp to underground carpark

4. Precinct 4

Precinct 4 is the area bounded by Queen Street to the east, Nariel Street to the south, Carinya Avenue to the west and the railway land to the north as shown in Figure E15.25. This parcel of land is significant as it assists in forming the entry gateway for public transport commuters as well as marking the northern most urban edge of the Town Centre itself.

Figure E15.25: Precinct 4



Development of the site must adhere to the following design principles:

- 1) Provide a vehicular and pedestrian connection from the existing West Lane through to Queen Street adjacent to the northern most boundary;
- 2) Utilise the above laneway to access the basement car parking facilities;
- 3) Provide a distinctive commercial/mixed use multi-level development on the northern section fronting onto Queen Street; and
- 4) Step the development down to Carinya Avenue in order to maintain a modest medium density residential scale.

Development of the site should provide the following outcomes:

- 1) Street and pedestrian connections:
 - a) Provide a safe and useable laneway connection from the northern most section of West Lane around to Queen Street as well as a pedestrian path returning to the northerly section of Carinya Avenue;

- b) Provide a landscaped section at the base on the north eastern section of the development as well as landscaping along the railway's northern boundary;
 - c) Provide vehicular access to basement car parking via the laneway and minimise in order to achieve a safe pedestrian amenity within the laneway; and
 - d) Accommodate a generous landscape setback in Carinya Avenue to achieve a stepped terrace style residential edge to the existing lower scaled cottages.
- 2) Land uses:
- a) Provide mixed use and strong commercial land uses to north eastern and Queen Street addresses; and
 - b) Provide a residential tower to medium domestic scale fronting Carinya Avenue.
- 3) Public domain:
- a) Provide active frontage and land uses out to Queen Street and the northern section fronting the extension of the laneway connecting to Queen Street;
 - b) Provide a landscaped plaza at the base of the north eastern multi-storied development; and
 - c) Provide a landscaped edge to the northern boundary with the railway corridor.

Table of Contents

F1 DEFINITIONS	2
A. BACKGROUND	2
B. OBJECTIVES	2
C. DEFINITIONS	2
0 - 9	2
A	2
B	5
C	5
D	7
E	8
F	9
G	10
H	11
I	12
J	13
K	13
L	13
N	14
O	14
P	15
R	16
S	17
T	21
U	22
V	22
W	23

F1 Definitions

A. Background

This Appendix outlines the meaning of the terms used in Penrith Development Control Plan (DCP) 2014. Terms defined in the *Standard Instrument (Local Environmental Plans) Order 2006* under the *Environmental Planning and Assessment Act 1979* are not reproduced in this Appendix. They can be found in the Dictionary to Penrith LEP 2010. Terms used in this DCP which are not in LEP 2010 are included in this Appendix.

The definitions in this Appendix are not exhaustive. Where the meaning of a term is not clear, it is recommended that applicants contact Council for clarification.

B. Objectives

The objective of this Appendix is to clarify the meaning of the terms used throughout Penrith Development Control Plan 2014.

C. Definitions

0 - 9

10% of LA1 means a noise level that exceeds the valid noise level of LA1 15min by more than 10% within any 15 minute period.

10% of LA90 means a noise level that exceeds the valid noise level of LA1 90min by more than 10% within any 90 minute period.

50% of LA90 means a noise level that exceeds the valid noise level of LA1 90min by more than 50% within any 90 minute period.

A

absorption means uptake of liquid into soil.

acceptable noise level criterion means the accepted noise levels for future development outlined in Penrith DCP 2014.

access lane means a street providing local residential access with shared traffic, pedestrian and recreation use, but with local traffic priority.

access ways means the driveways that service the rear garages of 'B' and 'C' type dwellings. The use of the access ways will be restricted to the landowner(s) requiring access to their rear garages.

accredited Auditor means a person accredited by the Environment Protection Authority (EPA), under the NSW Accredited Site Auditor Scheme through the *Contaminated Land Management Act 1997*.

accumulative building footprint

means the total sum of the ground floor area of all of the sheds on a single property

activity means:

- a) the erection of a building;
- b) the carrying out of work in, on, over or under land;
- c) the use of land or of a building or work;
- d) the subdivision of land;

and includes any act, matter or thing for which provision may be made under Section 26 of the *Environmental Planning and Assessment Act 1979*, and which is prescribed for the purpose of this definition, but does not include:

- a) any act, matter or thing for which development consent under Part 4 of the *Environmental Planning and Assessment Act 1979* is required or has been obtained;
- b) any act, matter or thing which is prohibited under an environmental planning instrument.

adjoining and neighbouring land

means any land that may be detrimentally affected by the use of, or the erection of a building or work on the development site.

advertised development

means development, other than designated development, that is identified as advertised development by the Act, Regulation, an environmental planning instrument or this development control plan. Advertised development includes

any development for the purposes of a scheduled activity at any premises under the *Protection of the Environment Operations Act 1997* that is not designated development.

advertiser means either the person, who caused the advertisement to be displayed, or the owner, or occupier of the building or land on which the advertisement is displayed.

advertising, in the context of Penrith DCP 2014, means public notification by an advertisement appearing in the local newspaper or newspapers which are distributed throughout the Penrith City Council Local Government Area.

advertising area means:

- a) the total surface area of a sign face, including any margin, frame or embellishment which forms an integral part of the sign; or
- b) in the case of an advertisement with more than one sign face, the total surface area viewed from any direction.

aerated wastewater treatment system means a wastewater treatment process typically involving settling of solids and flotation of scums, oxidation and consumption of organic matter through aeration, clarification (secondary settling of solids) and disinfection of wastewater before surface irrigation.

affected person means a person who:

- a) owns and/or occupies a property or building that adjoins or abuts the development site; or
- b) in the opinion of the responsible officer, may be detrimentally affected by the use of, or the

erection of a building or carrying out of work on the development site.

allotment means the parcel of land to be initially subdivided into Torrens title, but does not relate to subsequent strata or community title subdivision of development of this land.

ancillary dwellings includes 'Secondary Dwellings', as defined by the Standard Instrument, and 'Studio Lofts' which are self-contained dwellings that may be occupied separately from the principal dwelling and are on a separate title from the principal dwelling.

appropriately qualified person, for the purposes of this development control plan, is a person who, in the opinion of Council, has demonstrated experience, or access to experience in relevant areas. In addition, the person will be required to have appropriate professional indemnity and public risk insurance.

approval means a consent, licence or permission or any form of authorisation.

arborist means a specialist in the care of trees and vegetation with relevant qualifications and training. Minimum AQF Level 3 equivalent or above.

archival recording means the method of recording heritage items to meet the requirements of the Office of Environment and Heritage guidelines for recording heritage items of local significance.

arterial road means a road that carries predominantly through traffic from one region to another, thus forming the principal avenue of

communication for traffic movements.

asset protection zone means an area surrounding a development where fuel is managed to reduce the bush fire hazard to an acceptable level.

Australian height datum (AHD) is a common national surface level datum approximately corresponding to mean sea level.

average recurrence interval (ARI) is the long term average number of years between the occurrence of a flood as big as or larger than the selected event. For example, floods with a discharge as great as or greater than the 100 year ARI flood event will occur on average once every 100 years.

B

bank (of a waterway or other waterbody) includes lagoons, backwaters, and other elements of the river. Council will determine the minimum setback required if the "bank" is difficult to define.

biodiversity corridors and areas of remnant indigenous vegetation means areas, or networks of areas, of indigenous vegetation which allow migration of plants and animals, and provide examples of local biodiversity and habitat for various species in their own right.

blind corners means areas that people cannot see around due to the angle of the design, setbacks, landscaping or internal corridors. When blind corners cannot be avoided they should be treated with mirrors, clear glass panels, windows or other treatments, low height maintained vegetation, to allow visibility around or through the corner.

bioretention systems are vegetated soil media filters, which treat stormwater by allowing it to pond on the vegetated surface, then slowly infiltrate through the soil media. Treated water is captured at the base of the system and discharged via outlet pipes.

buffer means a strip of land that is reserved between a potential source of pollution and an area that must be protected from the pollution.

building, in the context of Penrith DCP 2014, includes part of a building and any structure or part of a structure including a swimming pool, but does not include:

- a) a manufactured home, a moveable dwelling or associated structure or part of a manufactured home, a moveable dwelling or associated structure; or
- b) a temporary structure within the meaning of the *Local Government Act 1993*.

building works include any part of a building and any structure or part of a structure.

bush regeneration involves staged removal of non-indigenous plants to allow, where possible, natural regeneration to occur.

C

catchment means the area from which a stream, river, lake or other body of water receives its water.

category 1 remediation work means remediation work that needs development consent under *State Environmental Planning Policy No.55 – Remediation of Land*.

category 2 remediation work means remediation work that does not

need development consent under *State Environmental Planning Policy No.55 – Remediation of Land*.

change table refers to a baby change table that is required to have protective sides of 100mm, which will stop a baby's ability to roll off; and a soft, clean base for the baby to lie on.

channel or restrict the movement of people refers to physical cues that direct people to use a particular route, e.g. a change in elevation, fence, path or lighting.

Class 6 or 9 of the *Building Code of Australia*

Class 6: a shop or other building for the sale of goods by retail or the supply of services direct to the public, including:

- a) an eating room, café, restaurant, milk or soft-drink bar; or
- b) a dining room, bar, shop or kiosk as part of a hotel or motel; or
- c) a hairdresser's or barber's shop, public laundry, or undertaker's establishment; or
- d) market or sale room, showroom, or service station.

Class 9: a building of a public nature:

- a) Class 9a – a health-care building; including those parts of the building set aside as a laboratory; or
- b) Class 9b – an assembly building, including a trade workshop, laboratory or the like in a primary or secondary school, but excluding any other parts of the building that are of another Class; or

- c) Class 9c – an aged care building.

clinical waste means any waste resulting from medical, nursing, dental, pharmaceutical or other related clinical activity, being waste that has the potential to cause injury, infection or offence.

collection area means the location where waste or recyclable materials are transferred from storage containers to a collection vehicle for removal from the site.

collector road means a road which collects and distributes traffic in an area, as well as serving abutting properties.

community association means the body that owns, manages and maintains the Community Property. The Association consists of the proprietors of the Community Lots and representatives of subsidiary schemes.

community safety involves recognising the need for people to work together to create a safer environment for people to live and work.

community services means community facilities, such as a community hall, recreation centre or child care facilities.

complying development has the same meaning as in the Act.

complying development certificate has the same meaning as in the Act.

compost means decomposed organic matter.

compostable material means vegetative material capable of being converted to humus by a biological decay process.

conservation means the management of natural resources in a way that will benefit both present and future generations.

conservation management plan means the same as ‘heritage conservation management plan’ as defined in Penrith LEP 2010.

construction guidelines should be interpreted as referring to Penrith City Council’s “Guidelines for Engineering Works for Subdivisions and Development – Part 2 – Construction”.

construction site is that portion of a site disturbed by the development and/or building and includes the areas where building materials are placed and access traversed by vehicles.

contaminated land means land in, on or under which any substance is present at a concentration above that naturally present in, on or under the land and that poses, or is likely to pose, an immediate or long-term risk of harm to human health or any other aspect of the environment.

contaminated land planning guidelines means guidelines under section 145C of the *Environmental Planning and Assessment Act 1979*.

contamination means the concentration of substances above that naturally present that poses, or is likely to pose, an immediate or long-term risk to human health or the environment.

corner shop has the same meaning as ‘neighbourhood shop’ in Penrith LEP 2010.

Council’s engineer means Council’s Engineering Services Unit

Supervisor or his nominated representative.

Council’s satisfaction (in relation to vegetation management) means providing documented evidence in the form of photographs, a statutory declaration, witness statement or report from an arborist to justify any proposed works.

crime prevention refers to reducing the risks of criminal events and related misbehaviour by intervening in their causes.

D

dead (in relation to vegetation) means no longer alive, permanent leaf loss or wilting.

debris means accumulated material that is not necessarily of anthropogenic origin, e.g. leaf litter, branches, garden refuse, etc.

degradation means to reduce from a higher to a lower quality.

design cues refers to whether the physical design of a space supports the intended function of a space.

design for de-construction is a design technique that allows for ready de-construction of products or materials at the end of their service life.

designated development means any class of development that is declared to be designated development by an environmental planning instrument or the Regulation.

designated road means any arterial or sub-arterial road identified as such in an environmental planning instrument.

development means:

- a) the use of land;
- b) the subdivision of land;
- c) the erection of a building;
- d) the carrying out of a work;
- e) the demolition of a building or work; or
- f) any other act, matter or thing referred to in section 26 of the Act that is controlled by an environmental planning instrument;

but does not include any development of a class or description prescribed by the Regulation for the purposes of this definition.

development application means an application for consent under Part 4 of the Act to carry out development but does not include an application for a complying development certificate.

development consent means consent under Part 4 of the Act to carry out development but does not include a complying development certificate.

development site means the land to which the development application relates.

diffuse means the movement of a substance from a higher to a lower concentration.

directional sign means a road sign, street sign posting, and signs indicating tourist and other major facilities, e.g. parking, rest areas, etc.

domestic wastewater means wastewater arising from household activities, including

wastewater from bathrooms, kitchens and laundries.

drain means any channel, conduit or pipe used for removing water, other than sewage, and includes a stormwater detention basin but does not include a building or place specifically defined elsewhere in this Appendix.

drip line (of a tree or shrub) means the area directly located under the outer circumference of the tree branches. This is where the tiny rootlets are located that take up water for the tree.

dying (in relation to vegetation) means significant loss of vigour or irreversible decline.

E

effluent means any waste products (treated or untreated) from any process or human activity that is discharged into the environment.

engineer should be interpreted as a person acceptable for Corporate Membership of The Institution of Engineers Australia.

engineering works means the design and/or construction of:

- a) land filling;
- b) roads and associated structures;
- c) drains and associated structures.

entrapment spot refers to places which could provide opportunities for concealment or which could provide an opportunity for an assault to be committed with limited chance of detection.

environment means components of the earth, including:

- a) land, air and water; and

- b) any layer of the atmosphere; and
- c) any organic or inorganic matter and any living organism; and
- d) human-made or modified structures and areas, including interacting natural ecosystems that include components referred to in (a) – (c).

environmental planning instrument means an environmental planning instrument within the meaning of the *Environmental Planning and Assessment Act 1979*.

erosion means the detachment and removal of soil materials from a given area, by the processes of wind, water and/or gravity.

erosion and sediment control plan means a plan showing how potential erosion and sedimentation occurring on a given site, as a result of a land use, building or development activity, will be minimised.

exhibition period means the period in which a development application is available for public view and submissions.

exhibition village sign means a sign erected on a property on which Council has approved an 'exhibition home/s'.

existing ground level means the level of a site before development is carried out on the site in accordance with this Plan;

existing on-site sewage management system (SMS) means an on-site sewage management system installed and operating prior to the adoption of this Plan.

external wall height means the distance from the natural ground level to the underside of the eaves.

F

fascia sign means an advertisement attached or painted to the fascia of an awning.

first flush treatment strategy shall meet the following criteria where:

Catchments ≤ 5 ha

- a) Gross Pollutants and Coarse Sediment – a Treatable Flow Rate = 60 L/s/ha, with sufficient storage volume to retain the pollutants generated by the first 30mm of runoff;
- b) Fine Particulates – a Treatable Flow rate = 10 L/s/ha, with sufficient storage volume to retain the pollutants generated by the first 15mm of runoff;

Catchments > 5 ha

- a) Compliance with the modelling techniques in Appendix F Managing Urban Stormwater: Council Handbook (Draft) NSW EPA (1997). Minimum Treatable Flow Rate equivalent to the 6-month ARI critical storm for the catchment (maximum duration of 15 minutes for urbanised catchments < 20 ha).

flashing sign means an advertisement illuminated in whole or in part at frequent intervals by a light source.

flood fringe areas means the remaining area of land affected by flooding after floodway and flood storage areas have been defined.

flood hazard means the potential for damage to property or persons due to flooding.

flood hazard (high) or high flood hazard occurs when there is possible danger to life and limb;

evacuation by trucks is difficult; there is potential for structural damage; and social disruption and financial losses could be high.

flood hazard (low) or low flood hazard occurs when, should it be necessary, people and their possessions could be evacuated by trucks; able-bodied adults would have difficulty wading.

flood liable land or flood prone land means land susceptible to flooding by the probable maximum flood event.

floodplain means the area of land which is subject to inundation by floods up to and including the Probable Maximum Flood.

flood planning level means the level of a 1:100 ARI (average recurrence interval) flood event plus 0.5 metres freeboard.

flood proofing involves a combination of measures incorporated in the design and/or construction and alteration of individual buildings or structures subject to flooding for the reduction or elimination of flooding damages.

flood safe access means access that is generally considered satisfactory when the depth of flooding over vehicular driveways and roads is limited to approximately 0.25 metres with low velocities.

flood storage areas means those parts of the floodplain that are important for the temporary storage of floodwaters during the passage of a flood. Adverse impacts on flood behaviour, if these areas were filled, would generally relate to an increase in flood levels greater than 0.1m,

however, this can vary from site to site.

floodway means those areas of the floodplain where a significant discharge of water occurs during floods. They are often aligned with obvious naturally defined channels. Floodways are areas which, even if only partially blocked, would cause a significant redistribution of flood flow, which may in turn adversely affect other areas. Additionally, they are areas in which development may be adversely affected by the passage of floodwaters other than by immersion alone. They are often, but not necessarily, the areas of deeper flow or the areas where higher velocities occur.

floor means that space within a building which is situated between one floor level and the floor level next above or if there is no floor above, the ceiling or roof above;

flush wall sign means an advertisement that is attached to the wall of a building, other than the transom, doorway or display window.

free oil means free floating droplets of viscous liquid $\geq 150 \mu\text{m}$ that do not emulsify in aqueous solutions, e.g. cooking oil, motor oil, etc.

front façade line is the main front enclosing wall of a dwelling.

G

garbage chute means a duct in which deposited material descends from one level to another within the building due to gravity.

garbage means refuse or waste material other than trade waste, effluent, compostable material,

green waste or recyclable material.

garbage room means a room where garbage and recycling receptacles are stored awaiting reuse or removal from the premises.

generating works means a building or place used for the purpose of making or generating gas, electricity or other forms of energy.

good amenity refers to well presented public space that promotes people feeling some ownership and responsibility for.

gross pollutants is a term used to collectively describe litter and debris transported by urban runoff, of a size that may be retained by a 5mm mesh screen.

ground floor footprint is the area measured from the external face of any wall of any dwelling, outbuilding (other than a farm building), dual occupancy dwelling, garage or undercover car parking area, animal house or garden shed.

groundwater refers to all underground waters.

H

habitable room means a living area, such as a lounge room, dining room, rumpus room, kitchen and bedroom, but excluding garages.

hazardous waste means any waste that is or contains a substance specified in Schedule 1, Part 3 of the *Protection of the Environment and Operations Act 1997*.

health care services means services ordinarily provided by a health care professional to members of the public, but does not include

any procedures such as x-rays, ultrasounds, cat-scans, radiography or pathology tests or the like.

health investigation levels are criteria published by the National Environmental Health Forum.

height in relation to:

- a) a building means the vertical distance measured between natural ground level at any point at which the building is sited, and the roof of the topmost floor of the building above that point.
- b) any advertising sign or structure means the vertical distance measured between the natural ground level at any point at which the advertising sign or structure is sited and the upper-most portion of the advertising sign or structure at that point.

heritage interpretation strategy means a strategy which:

- a) defines the land and places to which the heritage interpretation strategy relates;
- b) describes the cultural landscapes, history and heritage assets located on that land;
- c) describes the significance of the cultural landscape history and heritage assets on that land;
- d) provides strategies for the commemoration and communication of the heritage significance of the land and heritage assets located thereon;
- e) includes indicative designs and concept sketches for recommended methods of commemorating key historical site uses;

- f) recommends appropriate construction materials, production methods and siting to be adopted in implementing heritage commemoration strategies; and
- g) has been adopted by Council (including any amendments to that plan endorsed by resolution of Council).

heritage maintenance plan means a systematic and regular program of works and activities for the ongoing protective care of a heritage item, or a potential place of heritage significance, or a work, archaeological site or place within a heritage conservation area. It includes, but is not limited to, regular inspection and periodic works programmed to be undertaken over the short, medium and long term on the following general building elements:

- a) foundations;
- b) walls;
- c) roof;
- d) roof plumbing and stormwater system;
- e) doors and windows;
- f) floors;
- g) ceilings;
- h) timberwork and joinery;
- i) plasterwork;
- j) paintwork;
- k) lighting and power;
- l) plumbing;
- m) heating and cooling; and
- n) site works.

I

in the vicinity means:

- a) within an allotment abutting or directly across a road reservation from an allotment containing a heritage item, or within two hundred metres of a boundary of an allotment containing a heritage item (whichever is the lesser); or
- b) within the curtilage of a heritage item that has been formally defined by an environmental planning instrument, or in a heritage study supporting that instrument, or by a Commission of Inquiry, or in a development control plan, or in a conservation management plan.

independent review is a site audit, conducted by a site auditor. An independent review may be required by a planning authority of any information submitted by a proponent, conducted at the proponent's expense.

indigenous vegetation means one or more plant species of vegetation, including trees, shrubs, understorey plants, groundcover and plants occurring in a wetland, that existed in the City of Penrith before European settlement or have regrown through natural or assisted processes. This may include standing dead trees which provide essential habitat for natural flora.

infill development refers to the development of vacant blocks of land and extensions/additions to existing developments that are generally surrounded by developed properties.

integrated development has the meaning given by Section 91 of the *Environmental Planning and Assessment Act, 1979*.

internal lot means a lot the only means of access to which is an access corridor (a battle-axe or hatchet shaped lot) or a right-of-carriageway over another lot.

introduced vegetation means non-native vegetation being one or more plant species of vegetation that did not exist in the City of Penrith before European settlement.

investigation order means an investigation order made by the EPA under Division 2 of Part 3 of the *Contaminated Land Management Act 1997*.

J

K

L

land application area means the area over which treated wastewater is applied.

landfill site is a waste disposal site used for the controlled deposit of solid waste on or into land.

landscaped open space means that part of the site not occupied by any building(s), (except swimming pools or open air recreation facilities), which is predominantly landscaped by way of planting of gardens, lawns, shrubs or trees and is available for the use and enjoyment of the occupants of the dwelling(s) erected on the site, but does not include the area used for driveways, parking areas or drying yards.

Leq means the energy average of a valid 15 minute noise level in any specified time period.

litter means all material of human (anthropogenic) origin that is capable of being mobilised by stormwater runoff.

local amenity refers to local character and agreeable features.

local development means development, other than State Significant development, requiring development consent under an environmental planning instrument. Local development may comprise:

- a) advertised development;
- b) concurrence development;
- c) designated development; or
- d) integrated development.

local road means a road or street used primarily for access to abutting properties.

lop (in relation to vegetation management) means to cut branches or stems between branch unions or internodes. This is an unacceptable pruning practice as it may create hazardous trees.

M

manual self-opening door means a door which is opened by pushing a button.

mapped wetland 156 means the wetland area identified in *Sydney Regional Environmental Plan No. 20* as '156'.

mass movement is a general term encompassing erosion processes in which gravity is the primary force acting to dislodge and transport land surface materials.

minor local road means a minor street providing local residential and cycleway access.

movement predictors refers to public footpaths.

N

natural ground level means the ground surface level prior to any development, including any cutting, filling and grading, and, where the existing ground level differs from the natural ground level, the natural ground level shall be as determined by the council after taking into account any information concerning its location.

natural regeneration means allowing or assisting the bush to grow back by itself.

nett lettable floor area means the floor area of the building, excluding wall thicknesses, liftwells, stairs, corridors, lunch rooms, staff amenities, plant rooms and the like.

new on-site sewage management system (SMS) means a proposed on-site sewage management system for installation and operation.

non-valid noise level data means data recorded when:

- a) wind gusts exceed 15 metres per second;
- b) average wind speed exceeds 3 metres per second; or
- c) it is raining.

notification means the posting or dispatch of a notification letter.

notification letter means the letter sent by Council to an affected person advising of:

- a) a development application; or
- b) an application for modification under Section 96 of the Act; or

- c) an applicant's request under Section 82A of the Act for Council to review its determination;

but not an application for a complying development certificate.

nutrients means a substance that provides nourishment to another organism. For the purposes of stormwater runoff, it may be defined as Total Nitrogen (TN) consisting of nitrate nitrogen ($\text{NO}_3\text{--N}$), nitrite nitrogen ($\text{NO}_2\text{--N}$), ammonium nitrogen ($\text{NH}_4\text{+--N}$) and organic nitrogen; and Total Phosphorus (TP) consisting of filterable phosphorus (orthophosphate $\text{PO}_4\text{-3-P}$, condensed phosphates, organic phosphorus and colloidal phosphorus) and particulate phosphorus (organic particles; and inorganic particles that may or may not be adsorbed to suspended particulates).

O

offensive noise is defined under the *Protection of the Environment Operations Act 1997*.

outbuildings include garages, garden sheds, small-scale storage sheds for non-agricultural purposes, outdoor toilets, etc.

outdoor noise level means the noise level measured at any point outside a building (including terraces, balconies, courtyards, garden areas) which does not include any correction for façade reflection.

out-of-school hours (OOSH) care means a child care service providing care for children aged between five and twelve years which may:

- a) provide care before school hours (being not after 9.00am on school days);
- b) provide care after school hours (being not before 2.30pm on school days); and
- c) provide care during school vacations and pupil free days.

owner means:

- a) the person or persons who appear on Council's property system to be the owner of land, at the date of notification; or
- b) in the case of land that is the subject of a strata scheme under the *Strata Titles Act 1973*, or a leasehold strata scheme under the *Strata Titles (Leasehold) Act 1986*, the owner is the body corporate and the individual title owners; or
- c) in the case of land that is a community, precinct or neighbourhood parcel within the meaning of the *Community Land Development Act 1989*, the owner is the Association for the parcel.

owner, in the context of Penrith DCP 2014, means the persons or persons who appear on Council's property system to be the owner of land, at the date of notification.

P

parking area has the same meaning as a car park.

pathways means the series of interconnecting publicly accessible pedestrian/cycle links.

pedshed or **pedestrian catchment** or **walking catchment** is the area from which a given point or destination can be reasonably accessed by walking. Potential pedshed or walkability is defined

by a radius of 400m (5 minute walk) or 800m (10 minute walk). Actual pedshed or walkability is defined by drawing a line along pedestrian routes up to 400m or 800m.

permeability is the general term used to describe the rate of water through a substance.

planning authority, in the case of a function relating to a development application, is the consent authority (or a person or body taken to be a consent authority). In the case of any other function, planning authority means the public authority or other person responsible for exercising the function.

planning function is a function exercised by a planning authority under the *Environmental Planning and Assessment Act 1979*, such as the preparation or making of an environmental planning instrument.

pollutant means a contaminant that adversely alters the physical, chemical or biological properties of the environment.

potential place of heritage significance means a place:

- a) that is on the Potential Place of Heritage Significance list held by Council; or
- b) that is subject to an Interim Heritage Order or nominated for inclusion on the State Heritage Register; or
- c) that is, in the opinion of Council, a place of heritage significance to the community.

preliminary investigation is an investigation to identify any past or present potentially contaminating activities to provide

a preliminary assessment of any site contamination.

primary road frontage means the road to which an allotment is addressed.

principal private open space means the portion of private open space which is conveniently accessible from a living area of the dwelling, and which receives the required amount of solar access.

probable maximum flood (PMF) is the largest flood that could conceivably occur at a particular location.

produce store has the same meaning as 'rural supplies' in Penrith LEP 2010.

prohibited development means:

- a) development the carrying out of which is prohibited on land by the provisions of an environmental planning instrument that apply to the land; or
- b) development that cannot be carried out on land with or without development consent.

psychological (symbolic) barriers refers to circumstances where a 'reasonable individual' recognises that he or she is transitioning from public to private space. This can be achieved externally by use of paths, plants, colour and landscaped surfaces. This can be achieved internally by use of plants, arrangement of furniture, floor surfaces, colours, etc.

public domain means space that is provided for, accessible to, and frequented by the public.

R

reactive soil is a term used in the construction industry to describe

a soil that changes volume with changes in moisture content. This can damage foundations.

real estate sign means an advertisement that contains only a notice that the place or premises to which it is fixed is or are for sale or letting (together with particulars of the sale or letting) and that is not displayed for more than 14 days after the letting or completion of the sale.

recognised authority is a body, department, organisation or similar who is considered by Council as a competent and reliable source of advice and information for erosion and sediment control.

recyclable means capable of being reprocessed into useable material.

regional environmental plan (REP) is a plan made by the Minister under Section 51 of the Act that is in force. As of 1 July 2009, REPs are no longer part of the hierarchy of environmental planning instruments in NSW. All existing REPs are now deemed State Environmental Planning Policies (SEPPs).

registered surveyor should be interpreted as a person registered under the *Surveyor's Act, 1929* as amended.

remedial action plan (RAP) refers to the documentation detailing the methodology proposed, targets, timetable, quality control procedures and precautions to be taken during remediation work.

remediation of contaminated land includes:

- a) preparing a long-term management plan (if any) for the land; and
- b) dispersing, destroying, reducing, mitigating or containing the contamination of the land; and
- c) eliminating or reducing any hazard arising from the contamination of the land (including by preventing the entry of persons or animals on the land); and
- d) rehabilitating land.

remediation order is a remediation order made by the EPA under Part 3 of the *Contaminated Land Management Act 1979*.

residual means a substance that remains after the rest has been taken.

responsible Council officer means an officer of the Council of the City of Penrith who will be responsible for the processing and assessment of the development application.

responsible person is the person whose role it is to ensure that the pollution control strategy is maintained in a form that ensures it performs in accordance with its original design specification. They shall be:

- a) where an approval has been issued or given by Council:
 - i) the applicant; or
 - ii) the person nominated in writing by the applicant and where such nomination is accepted in writing by the nominee; or
- b) where there has been no approval issued or given by or required by Council:

- i) the supervisor, project manager or other person who has the ongoing day-to-day control over the site; or

- ii) the person whose duty statement or contractual arrangement requires that person to correctly install and adequately maintain the water quality control measures;

- c) where the development is a strata development, the responsible person may be the 'Body Corporate'.

restricted material means publications classified Category 1 restricted, Category 2 restricted or RC (Refused Classification) under the Commonwealth's *Classification (Publications, Films and Computer Games) Act 1995*.

re-use means re-using a product for the same or different purposes without further manufacture.

ridgeline means the highest point at which upward angled roof planes meet.

ringbark means a form of girdling involving physical damage to the bark or cambium.

roof sign means an advertisement erected on or above the roof or parapet of a building.

S

safer by design is a crime prevention strategy that focuses on the design, planning and structure of our cities and neighbourhoods. It aims to reduce opportunities for crime by employing design and space management principles, which reduce the likelihood of essential crime ingredients from intersecting.

salinisation means the accumulation of soluble salts in soil.

salinity means the accumulation of mineral salts in the soil, groundwater and surface waters. (It is primarily a groundwater problem that produces effects at the soil surface due to rising watertables which can lead to serious land degradation problems).

schedule of conservation works means a description and assessment of the existing condition of the internal and external materials, fabrics and finishes of a building and a description of the conservation, restoration and rehabilitation methods necessary to maintain its heritage significance and upgrade and rectify the building for its future use. It includes, but is not limited to, information on the maintenance of the heritage values of the building through the appropriate design and installation of new services, materials, fabrics and finishes on:

- a) external walls, roofs, verandahs, doors, windows, chimneys, ventilation, outbuildings, fences, gates, paving, drainage, trees and gardens, and
- b) internal walls, ceilings, attic space, doors, windows, architraves, skirtings, floors and sub-floor access and ventilation.

It also includes information on the timing of the undertaking of the list of proposed construction activities and estimates of the cost of each component of the construction activities.

secondary road frontage means a road frontage other than the primary road frontage.

sediment means solid material of varying size, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, wind, water or gravity, and comes to rest on the earth's surface either above or below sea level. Course sediment is defined as soil particles >0.5 mm in diameter. Fine particulates are defined as all material >0.02 mm but <0.5 mm in diameter. Fine sediment is the fraction of soil consisting of silt (0.002 mm to 0.02 mm in diameter) and clay (<0.002 mm in diameter).

sedimentation means the deposition of eroded soil, sediment or other material.

seepage means the gradual flow of groundwater to the surface over a wide area, but not from a spring.

self rectification is a process that allows an individual (with the relevant information provided) to rectify a breach of the law, legislation, guidelines, or civic responsibility.

sensitive land use means an educational establishment, child care centre, place of public worship, playground or any other place regularly frequented by children for recreational or cultural activities, or a dwelling.

sewage means waste matter that passes through sewers.

significant alterations / additions are those where the roof or hard surface area is increased to the minimum standard and those additions are not less than 25% of the existing roof area.

site audit means an independent review:

- a) that relates to investigation, or remediation, carried out (whether under the *Contaminated Land Management Act 1997* or otherwise) in respect of the actual or possible contamination of the land; and
- b) that is conducted for the purpose of determining any one or more of the following matters:
 - i) the nature and extent of any contamination of the land;
 - ii) the nature and extent of the investigation or remediation;
 - iii) what investigation or remediation remains necessary before the land is suitable for any specified use or range of uses.

site auditor means a person for the time being accredited under the *Contaminated Land Management Act 1997* as a site auditor.

site audit statement means a written statement by a site auditor of the findings of a site audit. A site audit statement must be prepared on a prescribed form.

site filling means the use of clean, non-putrescible material, such as soil, sand and clean building materials, to change the existing ground level of an area.

site line means the line of vision from a person to a place or building.

soil 1. (Agronomy) the unconsolidated mineral and organic matter on the immediate surface of the earth that serves as a natural medium for the growth of land plants.
 2. (Engineering) earth and rock particles resulting from the physical and chemical disintegration of rocks, which may or may not contain organic

matter. It includes fine materials (silts and clays), sand and gravel.

source separation means the separating of waste into like materials for recycling, reuse or collection at the site at which the waste was generated.

spatial definition refers to the way in which a space is defined.

special waste means any waste that requires special disposal arrangements as they represent a significant hazard to human health, life, property or the biophysical environment. This includes, but is not limited to, explosives, poisons, clinical wastes, radioactive substances, declared chemical wastes, asbestos, lead, medical wastes and quarantine wastes.

sponsorship advertising in sporting fields or grounds means an advertisement informing about sponsors, products of sponsors of teams or organisations using the facility.

spruiker means a person or persons located in the public place including a footpath who seek to entice people to enter the premises.

standard lot means a lot that is not an internal (or battle-axe or hatchet-shaped) lot.

State Environmental Planning Policy is a policy made by the Governor under Section 37 of the Act that is in force.

State Significant development means development, other than designated development, which:

- a) is declared by a State Environmental Planning Policy or Regional Environmental Plan to be State Significant development

and may be carried out with development consent; or

- b) in the opinion of the Minister, to be of state or regional significance, is declared by notice in the government gazette to be State Significant development and may be carried out with development consent; or
- c) the Minister has directed that the development application be referred to him for determination; or
- d) is prohibited development under Section 89 of the Act;

to which the Minister is the consent authority.

sub arterial road means a road connecting arterial roads to areas of development, and carrying traffic directly from one part of a region to another.

subdivision (of land) has the meaning referred to in Section 4B of the *Environmental Planning and Assessment Act 1979*.

sub-surface irrigation means artificial watering of land through buried watering systems.

suitably qualified and experienced person for undertaking flora and fauna assessment reports is:

- a) a person with tertiary qualifications in ecology, zoology or botany;
- b) a person with a minimum of 5 years experience in undertaking flora and fauna surveys;
- c) a person with a demonstrated knowledge of the flora and fauna that occurs in the Penrith local government area; and

- d) a person possessing appropriate licences or approvals under relevant legislation.

surface irrigation means artificial watering of land through an above ground system.

surface water means any water (usually as a result of rainfall) that enters drainage areas, creeks, rivers and reservoirs such as dams and lakes.

survey plan means a plan prepared by a surveyor registered under the *Surveyor's Act 1929*, which shows:

- a) the boundaries of the allotment of land and its location with respect to any road on which the land has a boundary;
- b) the location of any proposed building, work, road or accessway in relation to the boundaries of the land;
- c) the existing level to Australian Height Datum, of:
 - i) any existing or proposed road or accessway; and
 - ii) the ground at each corner of the allotment; and
 - iii) the ground around the perimeter of any proposed building or work;
- d) the finished floor level, to Australian Height Datum, of all floors within any proposed building; and
- e) the extent of the finished level to Australian Height Datum of any proposed excavation or filling of land.

sustainable waste management involves managing and controlling the generation of waste so that

the needs of the current generation are met without limiting the options and capacity of future generations to meet their own needs.

symbolic barriers has the same meaning as psychological barriers.

T

tactile pavement refers to a surface that has been treated to provide cues (particularly to vision impaired) that a physical environment is about to change; e.g. pavers with small raised disk treatments at approaches to pedestrian crossings at street lights.

temporary sign means an advertisement or advertising structure of a temporary nature that:

- a) announces any local event of a religious, educational, cultural, political, social or recreational character or relates to any temporary matter in connection with such an event;
- b) does not include advertising of a commercial nature; and
- c) is displayed for a period not exceeding two months, or a period Council may otherwise determine and specify in the terms of approval.

the Corporation means the corporation constituted by section 8(1) of the Act;

the Minister means the Minister for Planning.

the Regulation means the *Environmental Planning and Assessment Regulation 2000*, as amended.

top (in relation to vegetation management) means to reduce the height of a tree through the practice of lopping.

top hamper sign means an advertisement that is attached to the transom of a doorway or display window of a building.

total suspended solids include a range of inorganic and organic particles suspended in the water column, which can be defined as the filterable residue retained on a 2.0mm pore size filter dried at 105°C.

trade waste means waste or refuse arising from any trade or industry.

transport management and accessibility plan (TMAP) means:

- a) a comprehensive assessment of the transport impacts (addressing both the movement of people and goods) of a major site development or re-development proposal; and
- b) the identification of a package of appropriate transport measures (including infrastructure, services and demand management initiatives) for the proposed development, which will help to manage the demand for travel to and from the development, and in particular, reduce the demand for travel by private car and commercial vehicle.

treatable flow rate means the minimum flow that a pollution control device must be capable of treating, without bypass, to achieve the desired pollution retention criteria for the particular

development style and catchment area. In the City of Penrith, the Treatable Flow Rate (TFR), for sites equal to or less than 5 ha in area, shall be 60 L/s for every hectare of catchment for gross pollutants and 10 L/s for every hectare of catchment for fine particulates. The goal of establishing a TFR is to capture and retain gross pollutants generated by the first 30mm of runoff, and to capture and retain fine particulates generated by the first 15mm of runoff.

tree means:

- a) a living perennial plant that has a height of three (3) metres or more or a trunk circumference exceeding 300mm at 400mm above ground level, or
- b) individual trees, gardens or native vegetation listed as Significant Trees and Gardens.

U

under awning sign means an advertisement that is attached to the underside of an awning, with maximum dimensions 2.4m x 0.5m and is a minimum 2.6m from the underside of the sign to the footpath.

unencumbered floor space means the area of the floor of a room readily available for unobstructed use, and excludes space occupied by any cupboard, furniture, fixture or fitting and thoroughfares.

universal design means the design of products and environments to be useable by all people, to the greatest extent possible, without adaptation or specialised design.

unsewered means not connected to reticulated mains sewer.

urban capability is a method of land classification which ranks land according to various intensities of urban use on the basis of the physical constraints applying to it. The classification does not consider development costs, social implications, aesthetics or other factors relating to ecology and the environment. It is based on physical criteria alone and thus the classification of various areas as suitable for a particular type of urban development is an assessment of the capability of those areas to sustain a particular level of disturbance.

utility undertaking means any undertaking carried on by or by authority of any Government department, or in pursuance of any Commonwealth or State Act, for the purposes of:

- a) railway, road, water or air transport, or wharf or river undertakings; or
- b) the provision of sewerage, sewage treatment or drainage services; or
- c) the supply of water, hydraulic power, electricity or gas; or
- d) telecommunications facilities; or
- e) water quality control facilities.

V

vacant land means land on which, immediately before the day on which a notice is given, or an application for development consent is lodged, there were no buildings other than fences, greenhouses, conservatories, garages, summer houses, private boat houses, fuel sheds, tool houses, cycle sheds, aviaries, milking bails, hay sheds, stables,

fowl houses, pig sties, barns or the like.

valid noise levels means the measured noise level data excluding the non-valid noise level data.

validation action plan refers to documentation detailing the methodology by which an applicant or its consultant intends verifying that the remediation work has been satisfactorily carried out. It contains the requirements for post rehabilitation testing and the justification for it. A validation plan may be included within a remediation plan.

validation report outlines the evidence or documentation of an assessment as to whether the remediation work undertaken has achieved the desired clean-up standard.

W

waste and recycling storage area means a designated area upon the site of a building for the housing of approved containers to store all waste material (including recyclable material) likely to be generated by the building's developers or occupants.

waste cupboard means a storage area within each dwelling (usually in the kitchen) of a size sufficient to enable source separation of a single day's waste into garbage recyclables and compostable material.

waste disposal means to discharge, emit or deposit into the environment, any matter whether liquid, solid, gaseous or radioactive, in such volume, consistency or manner as to cause a significant alteration to

the environment, but does not include waste water disposal carried out by the Sydney Water Corporation Limited.

waste management plan is a plan detailing the anticipated volume and types of waste and recyclable materials likely to be generated, how it is to be stored and treated on-site, and how the residual is to be disposed of.

wastewater means water that carries wastes from residential, industrial or commercial premises.

waterlogging refers to becoming saturated with water.

work based child care means a centre based child care service provided by one or more organisations for the benefit of employees.

working day means a day that is not:

- a) A Saturday or Sunday; or
- b) A public holiday or a bank holiday in the place to which the letter was addressed.

work supervisor means the person(s) responsible for supervising the development activity works.

Table of Contents

F2 DA PROCESS	2
1.1. OVERVIEW OF THE APPLICATION AND ASSESSMENT PROCESS	2
1.2. MINOR APPLICATIONS	2
1.3. MAJOR APPLICATIONS	3
1.4. DEVELOPMENT APPLICATION PROCESS	3
1.4.1. PRE-LODGE MENT	3
1.4.2. PLANS/DRAWINGS	4
1.4.3. FEES AND CHARGES	4
1.4.4. NOTIFICATION AND ADVERTISING	4
1.4.5. ASSESSMENT	5
1.4.6. DEVELOPMENT CONSENT	5
1.4.7. CONSTRUCTION CERTIFICATE	5
1.4.8. INSPECTIONS REQUIRED	7
1.4.9. OCCUPATION CERTIFICATE	11

F2 DA Process

1.1. Overview of the Application and Assessment Process

The development application and assessment process is the process by which Council accepts, assesses and determines development applications. Some parts of the process are regulated by legislation, other parts have been developed by Council in an effort to achieve a process that provides both an efficient service and turnaround time for applicants, and gives the community reasonable opportunity to comment on those applications which may affect them. The assessment process also provides Council the opportunity to be sure that development occurring in Penrith is consistent with the relevant legislation – primarily the *Environmental Planning and Assessment Act 1979* and Penrith Local Environmental Plan 2010 (Penrith LEP 2010) – and Council policy (including this Plan).

Some parts of the assessment process are consistent for all types of applications. These are:

- Formal acceptance and receipt by Council;
- Assessment of the application against relevant legislation and Council policy;
- Determination of the application; and
- Written notification to the applicant of the determination of the application and any conditions imposed.

In recognition that different applications require different levels of assessment, Council has developed separate processes for major and minor development applications. Minor applications may not require neighbour notification and will generally be assessed within 14 days. Major applications require neighbour notification as a minimum, and may also require an advertisement in the newspaper.

The following is a guide to the assessment process for minor and major applications. It should be noted that any application which appears minor on first assessment may become more significant due to factors revealed once the assessment process has commenced. In addition, proposals which are minor on simple or unconstrained sites may be major or more complex on constrained sites (e.g. flood prone land, bushfire prone land, sloping sites or sites with significant vegetation cover).

1.2. Minor Applications

Minor development applications are likely to be for a type of development listed in *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* (the Codes SEPP) or in Schedule 2 or 3 of Penrith LEP 2010, but which do not meet the requirements in those instruments to be classified as exempt or complying. Likely examples include:

- Dwellings (alterations and additions)
- Sheds
- Swimming pools
- Rainwater tanks
- Decks and pergolas
- Boundary adjustments.

1.3. Major Applications

Major applications require much more assessment due to the complexity of the development proposed or the individual site conditions or both.

Please contact Council to confirm whether your proposal is considered to be major development.

1.4. Development Application Process

A Development Application (DA) is a formal request for permission to carry out a proposed development. Generally, you will need a DA if you propose to:

- Erect a new building/structure;
- Alter or add to an existing building;
- Demolish a building;
- Demolish, alter or damage a heritage building or a building within a Heritage Conservation Area;
- Change the use of a building;
- Subdivide land or strata subdivide a building;
- Display or erect an advertising sign;
- Erect an outbuilding; or
- Erect a swimming pool.

Development Application forms are available from Council, or on Council's website at www.penrithcity.nsw.gov.au.

Fees will be charged in accordance with Council's advertised fees and charges.

1.4.1. Pre-Lodgement

Council's primary aim is to identify and, if possible, resolve issues 'up front' ahead of a DA being submitted. To this end, Council provides pre-lodgement advice at Development Panel meetings. We know, from our experience, that this enables the DA to be determined faster.

We have a commitment to the quality of advice and customer service provided at the Development Panel meetings. In supporting this enhanced service, Council has resolved that all development proposals (other than dwellings and ancillary buildings, minor commercial or industrial additions/alterations, use/occupancy of buildings, minor rural development or advertising signs) should be reviewed by the Development Panel before the DA is submitted.

By working together with you, we can avoid unnecessary delays with your application.

The concept details are required to be received by Council prior to the appointment time/date.

Development Panel Meeting

The Panel will be attended by senior staff from appropriate sections of Council. Your proposal will be discussed at the meeting and verbal advice provided of which minutes will be kept.

Where possible, we will endeavour to provide you with a level of certainty about your proposal, however, we cannot give absolute commitment at this early stage.

A written response summarising any issues with your proposal will be provided as soon as possible after the meeting date.

Development Application

If you proceed with the DA after the above process, you should take account of all issues raised by the Development Panel. However, you cannot assume Council's support for your proposal based on pre-lodgement advice as a full assessment and determination can only be made after lodgement of the DA.

1.4.2. Plans/Drawings

The following plans and documentation will be required for most development applications:

- Site Plan;
- Floor Plan;
- Elevation Plan;
- Section Plan;
- Specifications;
- Statement of Environmental Effects;
- Energy Rating;
- Shadow Diagrams;
- Notification Plan;
- Landscaping Information;
- Erosion and Sediment Control Details;
- Drainage Plan;
- Waste Management Plan;
- Public Art Strategy (where relevant).

Additional information on submission requirements is included in Appendix F3 of this Plan.

Application form

Council's Development Application Form must be completed and provided with any development application.

1.4.3. Fees and Charges

The applicable fees and charges will need to be paid when submitting the DA. Fees and charges vary depending on the type, scale and nature of the development proposed. Council's current Schedule of Fees and Charges contains a comprehensive listing of current fees and charges for Council businesses and services.

1.4.4. Notification and Advertising

For a range of DAs, Council notifies landowners and occupiers who are likely to be affected by the proposal. This is determined by a site assessment of the locality.

Large scale site plans, elevations, a statement of environmental effects and other relevant information is available for public viewing.

1.4.5. Assessment

Following lodgement of the DA and the end of the notification and/or advertising period, Council conducts a site inspection to assess the impact of the proposed development. All submissions received will also be considered.

If the application is satisfactory, Council will issue development consent. This consent will be subject to conditions.

1.4.6. Development Consent

Council's assessment officer will complete a detailed assessment of your DA and arrange site inspection/s, when required. If the development is approved, Council will issue a Development Consent, subject to listed conditions.

1.4.7. Construction Certificate

A Construction Certificate is a certificate that states that building work can commence on an approved development and that it complies with the terms of the consent and the Building Code of Australia. This certificate can be issued by either Council or an independent certifier.

You must have development consent to obtain a construction certificate. No work must commence before you obtain a construction certificate.

You must also appoint a Principal Certifying Authority (PCA) and notify Council two (2) days prior to work commencing.

You may appoint Council as your PCA. To do this, please complete and lodge the *Application for Council PCA* form at least two (2) days before you are to start work on the site.

You should also ensure that any conditions requiring compliance before you can commence work have been completed to the satisfaction of your PCA.

Private Certifiers on Building Sites

Since July 1998, qualified professionals can oversee the construction of a development and/or certify stages of the construction phase. As such, you have the choice of using Council or a qualified professional, known as a private certifier, to certify the construction of your development.

If building or excavation works are required for the development, including subdivision, then you will need a Construction Certificate to commence works on the site. The Construction Certificate can only be issued after:

- a) Council has issued development consent for the same development; and
- b) Specifications and information has been provided with the Construction Certificate application to ensure compliance with the relevant standards including the Building Code of Australia; and
- c) Where relevant, specific conditions of the development consent requiring compliance before a Construction Certificate is issued has been complied with.

Once you have received a Construction Certificate, you will need to engage a PCA (either Council or a private certifier). The PCA is responsible for:

- i) Overseeing the construction works on the site; and
- ii) Ensuring that the relevant conditions of the development consent are being complied with; and

- iii) Ensuring that stages of the construction have been duly certified by the appropriately qualified professional; and
- iv) issuing an Occupation Certificate for the building before the building can be occupied or use of the development commenced.

If Council is not your PCA, you are responsible for advising the Council of your nominated PCA, including their details, 2 days before you commence construction works.

To ensure that your development is completed in a coordinated and timely manner, you are strongly advised to engage the same person who is issuing your Construction Certificate to also be the PCA for the construction phase.

Engaging a Private Certifier

Private certifiers are appropriately qualified professionals who have attained accreditation from their relevant professional accreditation board. Private certifiers, like Council, also require professional indemnity insurance as they are potentially responsible to make good poor or defective work if it can be demonstrated that they have been negligent.

In engaging a private certifier and/or a PCA (if not Council), you should ensure that the person has the appropriate accreditation relevant to your development.

Please note that it is difficult to change PCAs once the construction has commenced.

Council's role if a private certifier is the PCA

Complaints may arise during the construction of the development. Typically, these complaints are given to Council, despite the project being overseen by a private PCA. Depending on the nature of the complaint, Council will direct the complaints to the PCA to resolve.

Council will deal with immediate matters affecting resident amenity and the environment, such as noise and air pollution, hours of construction, erosion and sediment control, and waste management. In this regard, Council may decide to proceed with one or more of the following actions:

- i) Advise the PCA of the complaint and issue a warning (as a first offence);
- ii) issue a Penalty Infringement Notice (for certain breaches);
- iii) Commence the Orders provisions under the *Environmental Planning and Assessment Act* by issuing a Notice to Issue an Order;
- iv) Commence proceedings in the Court for serious offences.

1.4.8. Inspections Required

New Dwellings

1. Slab-On-Ground Construction

Erosion and Sediment Control Barriers

Erosion and sediment control barriers must be installed on all building sites in order to prevent site erosion and the runoff of sediment from building sites into the stormwater system. It is very important to implement these measures as soil erosion on building sites can be a major source of sediment pollution in our waterways. Although a single block of land may seem a small part of the river catchment, the cumulative effect of polluted runoff from a number of building sites can have a dramatic impact on water quality.

The most common types of barriers are filter fabric or sediment fences and straw bales. Note: Filter fabric looks like green shadedcloth but it is in fact a special material developed especially for sediment control. Shadedcloth is not to be used for erosion and sediment control.

Piers

This inspection may not be required in all cases. It is necessary to determine whether piers are expected to be dug.

The inspector must inspect the pier holes once they have been dug and cleaned out, and before they are filled with concrete.

Slab Steel

This inspection is required for all slabs. The inspector must inspect the steel once the slab is 'formed up', the termite protection method has been installed (where necessary), the 'membrane' (plastic) is laid, steel reinforcement has been placed and before the concrete is poured.

2. Timber Floored Dwellings

Strip Footings

Strip footings contain reinforcement steel and so must be inspected once the footing has been dug and the reinforcement steel has been installed but before the concrete is poured.

Pad Footings

Pad footings must be inspected once they have been dug and cleaned out but before the concrete is poured into them. Isolated pad footings do not contain any reinforcement steel; they comprise of concrete only.



Bearers and Joists

The bearers and joists must be inspected before the wall and roof framing is erected and before any floor is installed. Many builders may argue that the bearers and joists may be inspected at the same time as the rest of the frame is inspected. This is not acceptable because if the bearers and joists are incorrectly installed, it is too late once the full frame is constructed. The inspectors must also ensure that the ant capping is correctly installed. Without exception, timber floored dwellings and dwelling additions must have an inspection solely for bearers and joists.



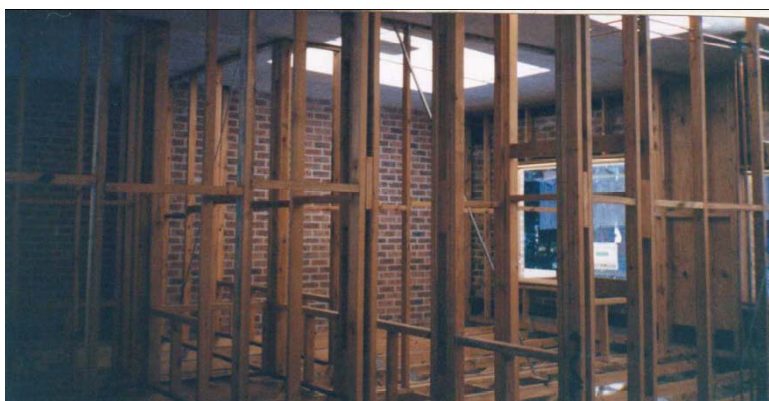
3. Slab-On-Ground Construction/Timber Floored Dwellings

Frame

The inspector must inspect the framework once it is completed. All brickwork must be erected and for trussed roofs, roof covering must be laid. The inspection cannot be done unless these rules are followed.

For a conventional framed house, the roof tiles do not have to be laid prior to the frame inspection.

The frame must be inspected prior to installation of internal wall and ceiling linings.



Note: When roof covering has been installed, gutters and downpipes should be connected (see stormwater inspections).

Wet Area Flashing

Generally there are two types of wet area flashing.

One type is applied to the framework *before* the wall lining has been done. This type can be inspected at the frame stage.

The other type is applied *after* walls have been lined which will require a separate inspection before any tiling can be done.



Stormwater

Stormwater plumbing work does not have to be completed by a licensed plumber. It may be done by owner/builders.

The inspector must inspect the stormwater lines once they are laid in the trenches and connected to either the street gutter or an easement (common drainage line). The use of rubble drains is generally not favoured by Council; however, this system of drainage may be considered depending upon the suitability of the site. The installation of rubble drains must be approved by Council.

Final

A final inspection cannot be carried out until the dwelling is completed. Generally, the following matters are required to be completed:

- The site should be clean, neat and tidy, free of any unwanted building materials.
- All painting both internal and external should be completed.
- Smoke detectors to be installed and a certificate provided.
- All certificates requested by the inspector, for example, structural engineer's certificates and pest control certificates, should be submitted to Council.
- All excavated and filled banks should be retained.
- All conditions of consent must be complied with, for example, if landscaping was required to be done, it must be fully completed in accordance with the approved application.

Applicants may apply for early occupation of a dwelling. The application must be made in writing to Council and be accompanied by the appropriate fee.

Early occupation of a dwelling will only be considered when all of the cooking and washing facilities are connected and in full working order, i.e. a bathroom, kitchen and laundry must be fully operational. Also, any balconies or stairs etc. requiring handrails and balustrades must have them installed.



4. Swimming Pools

a) Above-ground pools

Excavation

If a pool is sunk into the ground, an inspection may or may not be required. (Check the consent or with Council).

Fencing

The fence must be inspected before any water has been put into the pool.

Final

The final inspection is done when the pool is full, the filters are connected and the resuscitation chart has been put up.



b) In-ground pools

Concrete Pools - Excavation/Steel

This inspection is required to be carried out once the hole for the pool is dug and before the concrete is poured. For steel reinforced concrete pools, the inspector will inspect the steel reinforcement and the excavation at the same time.

Fibreglass Pools - Excavation

The excavation is inspected first, then the coping is inspected.

Fencing

Pool fencing must be inspected before any water is put in the pool.

Final

The final inspection is done when the pool is full, the filters are connected and the resuscitation chart has been put up.



1.4.9. Occupation Certificate

An occupation certificate, issued under the *Environmental Planning and Assessment Act 1979*, allows a person to occupy and use a new building or change the use of an existing building. An occupation certificate is required for any new building work, or change of use of a building, that has development consent or a complying development certificate. An occupation certificate is issued by your Principle Certifying Authority (PCA).

Occupation certificates are not required for buildings which are exempt development.

They may not be issued for the occupation or use of a new building after 12 months from the date on which the building was first occupied or used.

An occupation certificate verifies that the PCA (Council or a Private Certifier) is satisfied that the building is suitable to occupy or use in terms of the requirements of the Building Code of Australia. That Code sets required standards for the design and construction of various classes of buildings to protect health, safety and amenity.

There are two types of Occupation Certificate:

1. Final Occupation Certificate

A final occupation certificate allows commencement of either the occupation or use of a new building (including alternations/ extensions) or the new use of an existing building resulting from a change in its use.

2. Interim Occupation Certificate

An interim occupation certificate allows commencement of either the occupation or use of a partially completed building, or of a new use of part of an existing building resulting from a change of use of the building.

It is rare that an interim certificate is issued, but if one has been, a final occupation certificate is still required when all building work or the change of use is complete. A final occupation certificate revokes any occupation certificates issued earlier.

Table of Contents

1. INTRODUCTION	2
2. SUBMISSION REQUIREMENTS OVERVIEW	3
3. PLANS/DRAWINGS	4
4. SUPPORTING REPORT REQUIREMENTS	6
4.1. SITE ANALYSIS (SITE PLAN)	10
4.2. STATEMENT OF ENVIRONMENTAL EFFECTS	11
4.3. BUILDING SUSTAINABILITY RATING CERTIFICATE	13
4.4. LANDSCAPE PLANS	14
4.5. EROSION AND SEDIMENT CONTROL	26
4.6. STORMWATER AND DRAINAGE	28
4.7. WASTE MANAGEMENT	30
4.8. TRANSPORT AND TRAFFIC IMPACT ASSESSMENTS	37
4.9. WORKS TO TREES AND VEGETATION	43
4.10. BUSHFIRE ASSESSMENT REPORTS	47
4.11. FLOOD STUDY	47
4.12. SALINITY ANALYSIS	48
4.13. VISUAL IMPACT ASSESSMENT	49
4.14. HERITAGE	51
4.15. CONTAMINATION	57
4.16. NOISE IMPACT STATEMENT	61
4.17. REQUIREMENTS RELATING TO LAND STABILITY, EXCAVATION AND FILLING	61
4.18. WATER MANAGEMENT PLAN	63
4.19. DUST SUPPRESSION PLAN	63
4.20. ODOUR MANAGEMENT PLAN	64
4.21. SOCIAL IMPACT ASSESSMENT	65
4.22. ECONOMIC IMPACT/NEEDS ASSESSMENT	65
4.23. INFRASTRUCTURE DELIVERY PLAN	65
4.24 3D MODELLING FOR DEVELOPMENT WITHIN ST MARYS TOWN CENTRE	67

F3 DA Submission Requirements

1. Introduction

This Appendix outlines the requirements for submission of supporting information with development applications. Not all applications will require all the supporting information listed in this section. Which reports are required will depend on the land use itself, the scale of the development, its location and the individual site features.

The distinction between minor and major development is discussed in Appendix F2 'Development Process'. In some cases, the scale of development or the nature of the proposed site will mean that what would normally be classed as minor development may be major development, and vice versa. If in doubt, please contact Council.

Table F3.1 in section 2 below outlines which information is likely to be required for different land uses in different areas. Applicants will need to be aware of site features and natural hazards (e.g. flooding, bushfire, vegetation, high visibility, etc) in order to determine whether a particular report or plan will be required. If in doubt, please contact Council.

2. Submission Requirements Overview

Table F3.1 shows the submission requirements for a number of different types of applications to Council.

Table F3.1

MATRIX OF INFORMATION TO ACCOMPANY APPLICATIONS	Residential Dwellings	Alteration and additions to residential dwellings	Garage, Outbuilding, Awning, Carport, etc	Farm Shed	Swimming Pool	Dual Occupancy/ Secondary Dwelling	Multi dwelling housing and residential flat buildings	Commercial / Industrial building	Alteration and additions to Commercial / Industrial	Demolition	Subdivision of Land	Septic tank	Advertising sign	Home business	Applicant Checklist	Council Checklist
Site Plan	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Floor Plan	✓	✓	✓	✓		✓	✓	✓	✓		✧	✓		✓		
Elevation Plan	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	❖		
Section Plan	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✧	❖		
Specifications	❖	❖	❖	❖	❖	❖	❖	❖	❖	✓		✓	✧	❖		
Statement of Environmental Effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✧	✓		
BASIX	✓	❖			❖	✓	✓									
Building Sustainability Rating Certificate	✓	✓				✓	✓	✧	✧		✧					
Shadow Diagrams	✧	✧				✧	✧	✧	✧							
Landscaping Plan	✧	✧	✧	✓		✓	✓	✓	✧		✓	✓				
Erosion / Sediment Control	✓	✓	✧	✧	✧	✓	✓	✓	✧	✓	✧	✧	✧			
Drainage Plan (Stormwater)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✧	✧	✓				

MATRIX OF INFORMATION TO ACCOMPANY APPLICATIONS																
	Residential Dwellings	Alteration and additions to residential dwellings	Garage, Outbuilding, Awning, Carport, etc	Farm Shed	Swimming Pool	Dual Occupancy/ Secondary Dwelling	Multi dwelling housing and residential flat buildings	Commercial / Industrial building	Alteration and additions to Commercial / Industrial	Demolition	Subdivision of Land	Septic tank	Advertising sign	Home business	Applicant Checklist	Council Checklist
Site and Soil Assessment Report	✧	✧	✧			✧					✧	✧		✧		
Waste Management Plan	✓	✧		✧	✓	✓	✓	✓	✧	✓				✧		
External Colour Schedule	✓	✓		✓		✓	✓	✓	✓							
Survey / Contour Plans	✓			✧		✓	✓	✓			✓					

✓ Indicates this information is required

✧ Indicates this information is required if you are applying for a Construction Certificate or Complying Development Certificate

✧ Indicates this information may be required

Certain applications may require the submission of additional information that has not been listed above. Council encourages you to consult prior to lodging your application. This ensures that many issues may be resolved before an application is lodged and that each application contains all necessary information to enable prompt processing by Council.

3. Plans/Drawings

Table F3.2 lists the types of plans and drawings likely to be required for minor and major development. A minimum of 6 complete sets of all plans and documents are required for the submission of applications.

Table F3.2

Ref.	Plan	Minor	Major	Comments/Other
1	CD with all Plans in PDF format	✓	✓	
3	Survey/contour Plan	✓	✓	If relevant
4	Site Plan	✓	✓	If relevant
5	Site Analysis	✓	✓	
	Local analysis		✧	
	Regional analysis		✧	
6	Floor Plans	✓	✓	If relevant
7	Section Plans	✓	✓	If relevant
8	Elevation Plans	✓	✓	If relevant
9	Demolition Plans	✓	✓	If relevant
10	Shadow Diagrams		✓	
11	Landscape Plan	✧	✓	If relevant
12	Specifications of Advertising Signage	✓	✓	If relevant
13	Specification of External Finishes	✓	✓	If relevant
14	Sample Board		✓	If relevant
15	Photomontages		✓	If relevant
16	Subdivision Plan		✓	If relevant
17	Model		✓	If relevant
18	Plant and Plant Rooms		✓	If relevant

✓ Indicates this information is required

✧ Indicates this information may be required

4. Supporting Report Requirements

Tables F3.3 and F3.4 list the types of reports likely to be required for minor and major development.

Table F3.3

Report	Minor	Major	Notes / Comments
Site Analysis (Site Plan)	✓	✓	Level of detail will vary depending on scale and/or complexity of development or site
Statement of Environmental Effects	✓	✓	Level of detail will vary depending on scale and/or complexity of development or site
Building Sustainability Rating Certificate <ul style="list-style-type: none"> • BASIX Certificate • Non-residential Development 	✓	✓ ✓	BASIX Certificate required for dwelling construction or alterations. Required for non residential development (including mixed use) over \$1 million.
Landscaping Information <ul style="list-style-type: none"> • Landscape Site Analysis Plan • Landscape Concept Plan • Landscape Detail Plan • Landscape Implementation Report • Landscape Maintenance Report • Landscape 3 Year Landscaping Report 	✓ ✧ ✧	✓ ✓ ✓ ✧ ✧ ✧	
Erosion and Sediment Control <ul style="list-style-type: none"> • Erosion and Sediment Control Plan • Additional Erosion and Sediment Control Measures 	✓	✓ ✓	Level of detail will vary depending on scale and/or complexity of development or site

Report	Minor	Major	Notes / Comments
Stormwater and Drainage			
• Drainage Plan (Stormwater)	✓	✓	
• Site and Soil Assessment Report	✓	✓	
• Stormwater and Drainage Report		✧	
Waste Management Plan	✓	✓	
Transport and Traffic Impact Assessments			
• Traffic Impact Statement	✧	✓	
• Traffic Report		✧	
• Transport Management and Accessibility Plan (TMAP)		✧	

✓ Indicates report is required

✧ Indicates this information may be required

Certain applications may require the submission of additional information that has not been listed above. Council encourages you to consult prior to lodging your application. This ensures that many issues may be resolved before an application is lodged and that each application contains all necessary information to enable prompt processing by Council.

Table F3.4

Report	Minor	Major	Notes / Comments
The following reports are required if the site or development characteristics fit the necessary criteria. For example, if a site is on bushfire prone land, a bushfire assessment report will be required. If the proposal includes works to trees and vegetation then the relevant applications and reports will be required.			
Works to trees and vegetation			
• Tree Survey and Assessment Report	✓		Information to be provided with applications for tree pruning / removal
• Arboricultural Survey Report	✧	*✓	Certain works to trees and vegetation
• Tree Management Plan	✧	*✓	Where trees to be retained as part of development

Report	Minor	Major	Notes / Comments
<ul style="list-style-type: none"> Flora and Fauna Assessment Report 	*✓	*✓	Information to be provided with development applications for works to any indigenous trees and vegetation
<ul style="list-style-type: none"> Species Impact Statement 	*✓	*✓	*where Council determines works to trees and vegetation likely to impact threatened species, populations, ecological communities or habitats
Bushfire Assessment Reports			
<ul style="list-style-type: none"> Non-integrated development 	*✓		*if site is bushfire prone land
<ul style="list-style-type: none"> Integrated development 		*✓	*if site is bushfire prone land
Flood Study	*✓	*✓	*if site is affected by 1 in 100 ARI flood event
Salinity Analysis	*✓	*✓	*if site identified as subject to potential risk of salinity
Visual Impact Assessment	*✓	*✓	*if site is located in areas identified on Penrith LEP 2010 Scenic and Landscape Values Map or land zoned E1 or E2 on Penrith LEP 2010 Land Zoning Map
Heritage			
<ul style="list-style-type: none"> Heritage Impact Statement 	*✓	*✓	*any development that would: -affect a heritage item; -be carried out in a heritage conservation area; -affect a place of potential heritage significance; or -occur in the vicinity of a heritage item.
<ul style="list-style-type: none"> Heritage Conservation Management Plan 	✧	✧	*where proposal could affect the significance of a heritage item, heritage conservation area or place of potential heritage significance
<ul style="list-style-type: none"> Archival Record 	*✓	*✓	*where proposal involves demolition or partial demolition of a heritage item, a place within a heritage conservation area or a potential place of heritage significance

Report	Minor	Major	Notes / Comments
<ul style="list-style-type: none"> Archaeological Assessment Report Aboriginal Cultural Heritage Archaeological Survey Report 	*✓ ✧	*✓ ✧	*where proposal involves disturbance or development of a heritage item listed as an <i>archaeological site</i> in Penrith LEP 2010 *where proposal involves disturbance to the soil or construction works and the land is potentially archaeologically sensitive or has an area of 5 hectares or more
Contamination <ul style="list-style-type: none"> Contamination Investigation Report / Preliminary Contamination Investigation (Stage 1) Detailed Contamination Site Investigation (Stage 2) Site Remedial Action Plan (Stage 3) Validation and site monitoring reports Site Audit (Contamination) Chemical Use and Storage Report 	✧ ✧ ✧ ✧ ✧ ✧	*✓ *✓ *✓ *✓ *✓ ✧	*where contamination is, or may be, present *when preliminary investigation indicates land is contaminated or is, or was, formally used for a potentially contaminating activity *where remedial action is required *to confirm whether the clean-up objectives have been attained and whether further remediation or restrictions on land use are required *where independent review is required of site investigation, remediation or validation *if proposal involves storage of chemicals on the site
Noise Impact Statement	*✓	*✓	*where proposal may be impacted by road, rail or aircraft noise and/or where proposal is potentially noise generating
Land Stability, excavation and filling <ul style="list-style-type: none"> Geotechnical report Landfill validation report 	*✓ *✓	*✓ *✓	*where building is proposed on land with slope gradient higher than 15% *where proposal involves landfill

Report	Minor	Major	Notes / Comments
Water Management Plan	✓	✓	Where application is for an industrial or rural land use that will increase the water needs of a particular area
Social Impact Assessment		✓	
Economic Impact Assessment		✓	Including child care centres over 40 places, major retail development
Environmental Impact Assessment	✧	✓	Major development (e.g. designated development) and development that may result in contamination
Urban Design Assessment		✓	
Local Analysis	✧	✓	
Regional Analysis	✧	✓	
Infrastructure Delivery Plan		✓	Required for new urban areas
3D Modelling		✧	Required for certain developments in St Marys Town Centre

✓ Indicates report is required

✧ Indicates this information may be required

Certain applications may require the submission of additional information that has not been listed above. Council encourages you to consult prior to lodging your application. This ensures that many issues may be resolved before an application is lodged and that each application contains all necessary information to enable prompt processing by Council.

4.1. Site Analysis (Site Plan)

A Site Analysis involves looking at the features of the site and the immediate surrounding area and, where possible, presenting the information in a diagram(s). This enables the opportunities and constraints to be identified and subsequent development to respond appropriately to the site characteristics. A Site Analysis should include the following minimum elements:

- 1) The site's dimensions and areas;
- 2) North point and the site's orientation (e.g. solar access);
- 3) Topography (with 0.5m to 1m contours);
- 4) Road, pedestrian and cycle access points;

- 5) Services and infrastructure (e.g. electricity poles, stormwater drainage lines, natural drainage, kerb crossings and easements);
- 6) Rights of way;
- 7) Views to and from the site (more detail is provided below);
- 8) Site overland flows and drainage patterns;
- 9) Geotechnical characteristics of the site and suitability for development;
- 10) Location of site in relation to shops, community facilities and transport;
- 11) Heritage items on site or on adjoining properties;
- 12) Form and character of adjacent and opposite buildings in the streetscape, including both sides of any street that the development fronts;
- 13) Location and use of any existing buildings or built features on the site;
- 14) Location and important characteristics of adjacent public, communal and private open spaces;
- 15) Location of significant vegetation on the site and on adjoining properties and all street trees;
- 16) Location of any significant noise sources on and in the vicinity of the site; and
- 17) Assessment of site contamination and/or remediation.

The Site Analysis includes the site and the immediate context - usually up to 50 or 100 metres in any direction from the site (depending on the scale of development, the proposed land uses and its impacts). The Site Analysis should include plan and section drawings of the existing features of the site at the same scale as the site and landscape plan.

Not all of the elements listed above will be relevant for every development or site. You are strongly recommended to contact Council's Development Services Unit to discuss the requirements for your proposal prior to lodging a development application.

4.2. Statement of Environmental Effects

A Statement of Environmental Effects (SEE) is a written document that supports the development application. It demonstrates that, as the applicant, you have considered what impact your development will have on the natural and built environment and how you propose to mitigate any negative effects. All developments will require a SEE, although the level of detail may vary according to the type of development. For most minor development, there is no need for the SEE to be prepared by a specialist.

A SEE should include, but is not limited to, the following:

An Assessment of Relevant Planning Controls

This section is important as it demonstrates how the proposal complies with relevant planning policies (including State Environmental Planning Policies (SEPPs), Local

Environmental Plans (LEPs), Development Control Plans (DCPs) and other relevant policies).

For each issue listed below, identify which policies apply to the site and describe how the proposal complies.

Site Suitability

- i) Identify flooding, drainage, landslip, mine subsidence, soil erosion, bushfire or any other risk.

Access and Traffic

- ii) Describe driveway access, manoeuvrability and pedestrian safety.
- iii) Discuss the suitability of the existing road network.
- iv) Describe the number of vehicle movements entering and exiting the site, including delivery trucks.
- v) Describe the number and location of parking spaces.

Streetscape and Design

- vi) Discuss how the design of the development has taken into consideration the existing streetscape.
- vii) Provide details of the proposed external finishes, including material type and colour.

Services

- viii) Discuss the availability of utility services such as power, water, sewer and telephone services.
- ix) Describe the method of sewerage effluent and stormwater disposal.

Privacy, Views and Overshadowing

- x) Provide shadow diagrams and explain how they satisfy Council's requirements for solar access.
- xi) Discuss how the proposal affects the views both from and into the site, from neighbouring properties, roads and any more distant elevated vantage points together with any measures to reduce the impact.

Social and Economic Effects

- xii) Discuss whether the development will have a positive or negative social impact on the locality. Provide proposed measures to address any negative impacts.
- xiii) Discuss what economic impact the development will have on the locality.

Flora and Fauna

- xiv) In relation to the Threatened Species Conservation Act, discuss the impact that the development will have any threatened or endangered species.

4.3. Building Sustainability Rating Certificate

4.3.1. Residential Development (BASIX Certificate)

A BASIX Certificate is required for all dwellings, including those dwellings in a mixed use development and serviced apartments intended or capable of being strata titled. Proposals for additions and/or alterations to an existing dwelling also need a BASIX Certificate.

The Building Sustainability Index (BASIX) is a web-based planning tool designed to assess the potential performance of residential buildings against a range of sustainability indices. Applicants can generate the BASIX Certificate only on the NSW Department of Planning BASIX website: www.basix.nsw.gov.au. For more information, phone the BASIX Help Line on 1300 650 908.

The applicant is required to submit the BASIX Certificate with the development application or Complying Development Certificate application. The BASIX Certificate and plans and/or specifications must be consistent. Plans and specifications must identify BASIX commitments fundamental to the design of the development (e.g. location and size of rainwater tanks, windows, heating and cooling systems). Inconsistencies may be resolved through amendment of plans and/or specifications or by submitting a new BASIX Certificate with commitments that match the rest of the application.

Like other development and building standards, BASIX commitments will be checked for installation and operation as part of the certification of completed building works. It should also be noted that as many BASIX commitments will involve the purchase and correct installation of building elements and materials, it is important to keep all receipts and certificates of installation for review by the certifying authority.

4.3.2. Non-residential Development

Non-residential developments including mixed use developments with a construction cost of \$1 million or more are to demonstrate a commitment to achieving no less than 4 stars under Green Star or 4.5 stars under the National Australian Built Environment Rating System.

The applicant is required to submit the rating certificate with the development application or Complying Development Certificate application. The plans and specifications must also identify the Green Star or NABERS commitments which will be checked by a professional building certifier during construction. Submitted plans or specifications and the certificate must be consistent. Inconsistencies may be resolved through amendment of plans and/or specifications or by submitting a new Certificate with commitments that match the rest of the application.

National Australian Built Environment Rating System (NABERS)

NABERS is a national rating system that measures the energy efficiency, water usage, waste management and indoor environment quality of a building or tenancy and its impact on the environment. NABERS provides a star rating based on a buildings actual operational performance. The rating takes into consideration:

- The climactic conditions in which the building operates
- The hours of its use

- The level of services it provides
- The energy sources it uses
- Its size and occupancy.

For more information, visit www.nabers.gov.au

Green Star

Green Star is an environmental rating scheme that provides formal accredited evaluation of the environmental design and achievements of buildings across nine categories (management, indoor environment quality, energy, transport, water, materials, land use and ecology, emissions and innovation). Green Star provides certified ratings of 4, 5 or 6 Stars. Information about Green Star is available from www.gbca.org.au/green-star.

The Green Star certification system was developed and is administered by the Green Building Council of Australia, a not-for-profit organisation.

4.4. Landscape Plans

All design work is to be undertaken to a level consistent with industry best practice and must meet the following requirements as a minimum. The degree of detail is to be relevant and appropriate to the scale of the development. The name, qualifications and membership details of the person or company preparing the plans is to be shown on each plan.

4.4.1. Landscape Site Analysis Plan

The purpose of a Landscape Site Analysis Plan is to ensure that key site planning issues are identified and are a part of the design process. For category 2 and 3 developments (see the Landscape Design Section of this Plan), the details of the site analysis are best depicted on a separate plan. In the case of category 1 proposals, this information can form part of the Landscape Concept Plan.

It is not sufficient to prepare a Landscape Site Analysis Plan and then ignore it during the design process. The Landscape Site Analysis Plan will have identified the opportunities and constraints of a particular site and the relevant surrounding area. The purpose of the Landscape Site Analysis Plan is to inform the design process. Some of the information will also form the basis for preparing management plans for vegetation, erosion and sedimentation control, stormwater and waste.

The following indicates the sort of information to be collected and presented in the Landscape Site Analysis Plan depending upon the site and the complexity of the proposal. Figure F3.1 provides an example.

1. Site survey

- a) Identifies the lot and its boundaries.

2. Plan information

- a) Scale of plan at 1:100 or 1:200 (use ONLY these scales) plus bar scale.
- b) North point.

- c) Name and qualifications of person preparing Landscape Site Analysis Plan.

3. Existing site features

- a) Location and uses of any existing buildings and structures on the site showing those to be removed and retained.
- b) Location and height of walls and fences built to the boundary.
- c) Heavily shaded areas from existing structures, mature trees or dominant landform, such as rock ledges.
- d) Archaeological and heritage sites.
- e) Any easements and rights-of-way and their restrictions.

4. Services

- a) Location of existing overhead and underground utility services (electricity, gas, telephone, water, sewer and stormwater drainage lines, inlets and collection points).

5. Use of adjacent land

- a) Location and uses of adjacent buildings and vegetation.
- b) Ridge levels and floor levels of adjacent buildings.
- c) Potential for overlooking into and from window openings in walls adjacent to the development site.
- d) Potential for shading on adjacent properties.
- e) Streetscape features and character (e.g. street trees, poles, kerb crossovers, bus stops) and street trees

6. Landform

- a) Height contours at regular intervals (and any relevant road benchmark) and areas of steep slope (20% or more).
- b) Existing natural features (e.g. cliffs, rock outcrops).
- c) Orientation of site (e.g. south-facing slope).

7. Soils

- a) Depth of topsoil and subsoil.
- b) pH (the level of soil acidity affects its performance).
- c) Condition - fertility, whether it has been compacted, cut or filled.
- d) Erosion problems, contamination or salinity.

8. Plants

- a) Existing established individual or stands of trees and vegetation with their height and spread, condition and common/botanical name – particularly note any trees listed as “Significant”.
- b) Existing ground levels around the base of trees.
- c) Extent and name of any weed infestation.
- d) Plants proposed to be removed.
- e) Plants proposed to be protected and retained.

9. Wildlife

- a) Any habitats on the site and nearby land.
- b) Fauna habitat possibilities (e.g. niches in rockeries, ponds for frogs, habitat plants (nectar for small birds)).

10. Climate

- a) Directions of pleasant and unpleasant summer and winter winds.
- b) Windbreaks and their likely permanence.
- c) Frost pockets.
- d) Shady areas.
- e) Direction and extremity of bushfire threat.

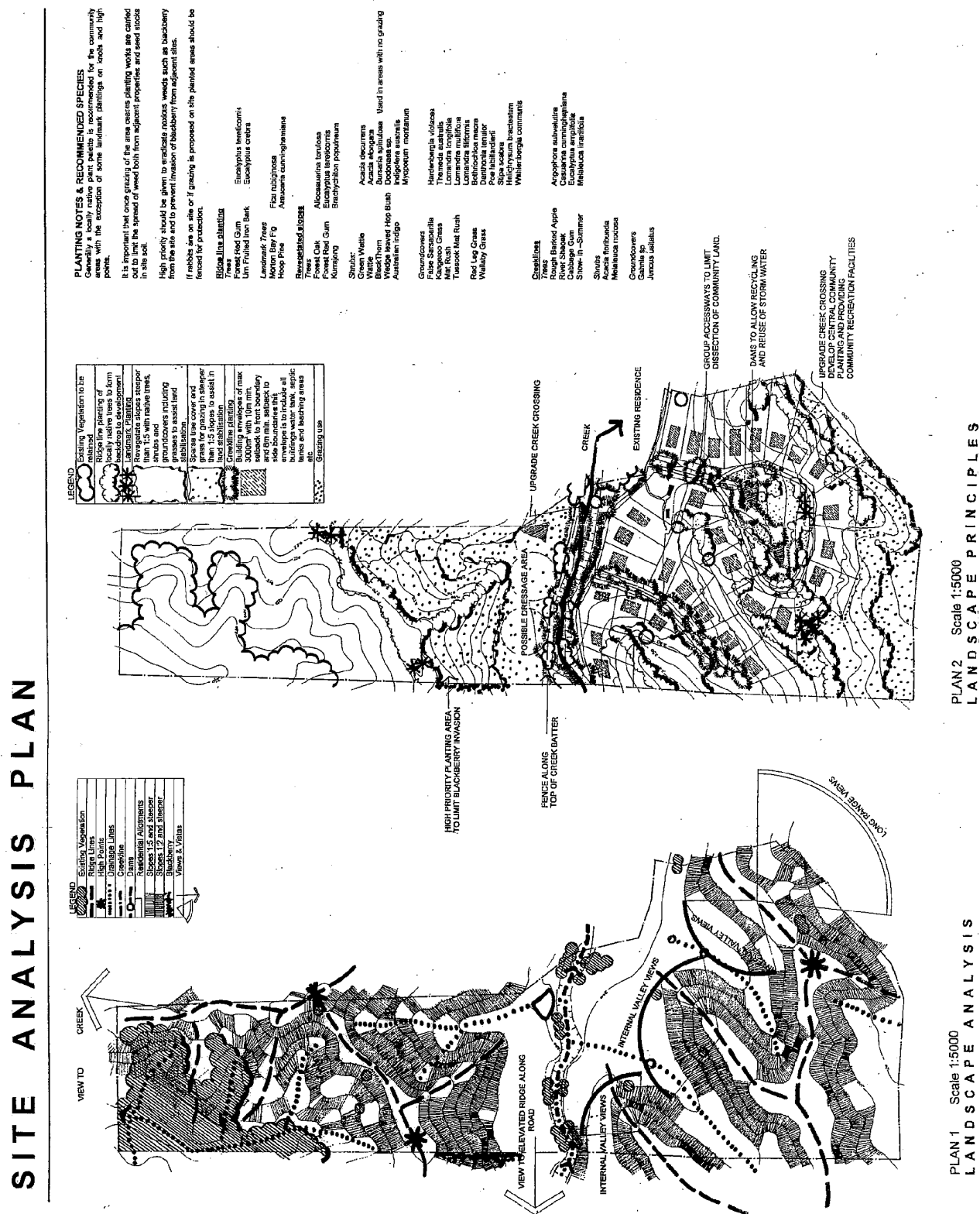
11. Water

- a) Sources of water flowing on to the site and the general quality of that water.
- b) Drainage patterns on the site, areas of concentrated runoff, ponding, possible flooding.
- c) Adjoining riparian zone, if within 40 metres of a waterway.
- d) Characteristics of the drainage system immediately downstream of the site (e.g. bushland creek or a constructed stormwater drainage channel).

12. Views and vistas

- a) Good and unsightly views into and from the site.
- b) Qualities of the site that are important in the view to and from the site (e.g. major trees).

Figure F3.1



4.4.2. Landscape Concept Plan

A Landscape Concept Plan is required for all category 2 and 3 developments and may also be required for some category 1 developments. It should express the developer's intent and ideas, and show how the proposed landscaping relates to the characteristics of the site and its setting.

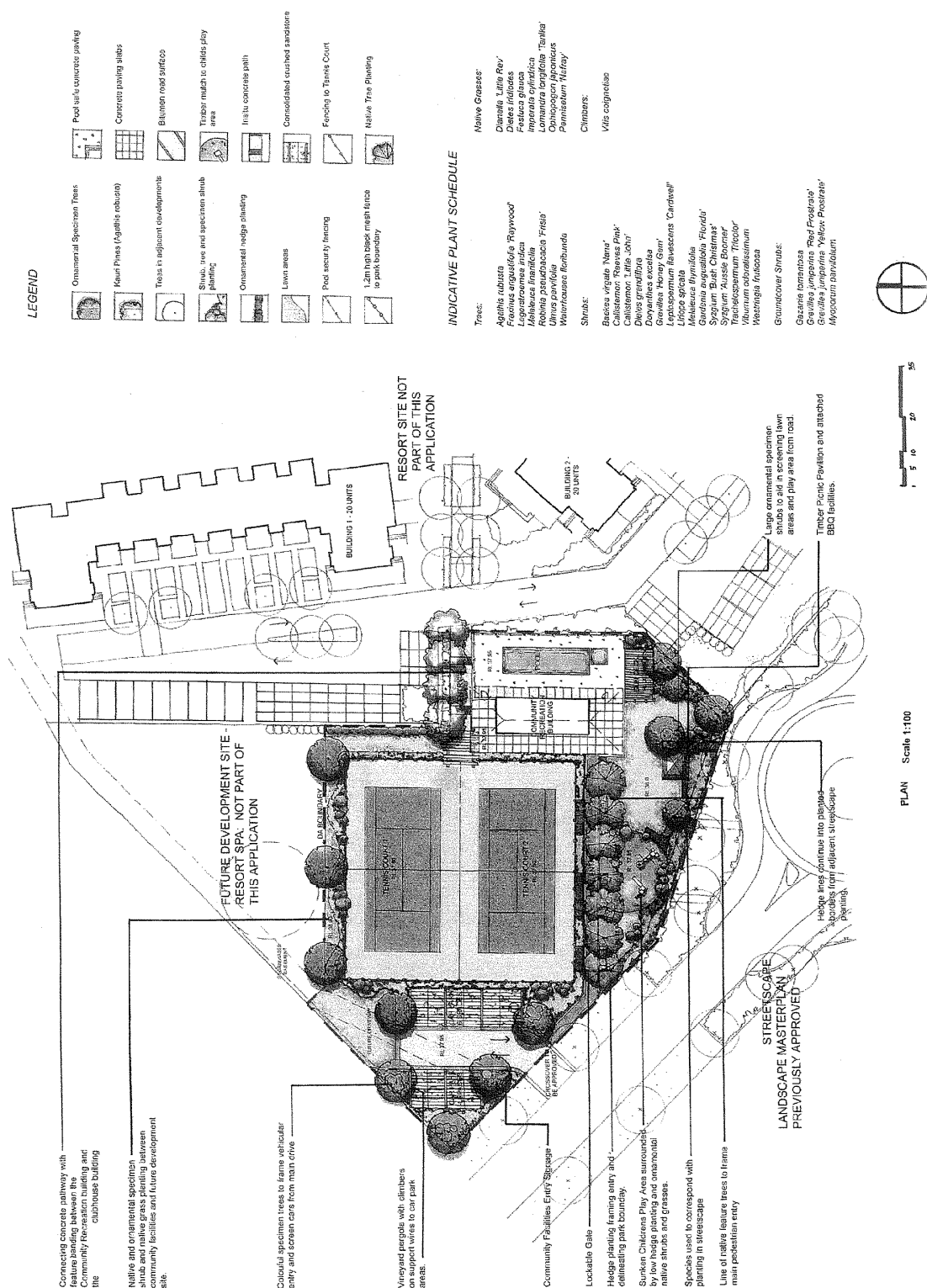
The following information should be provided in the Landscape Concept Plan:

- a) A statement summarising the vision or concept of the design, existing and proposed character, relevant issues identified in the site analysis and other reports, and how the design responds to those issues for example heritage and access issues.
- b) All proposed areas to be landscaped including balconies, roof gardens, courtyards. Show general landscape materials, finishes and treatments (e.g. massed planting beds, specimen trees, paving, gravel, turf, water element, lighting, signage). Include notations linked to specific parts of the plan to explain purpose, function and character.
- c) Hard and soft landscaped areas showing contours, spot heights and finished levels, including retaining walls and fencing heights, types and colours.
- d) Existing trees to be retained including surveyed spot height at the base of the trunk, and numbered where relevant according with the arborist report. Also include the extent of tree protection zones and measures on the plan (refer to AS4970 Protection of Trees on Development Sites).
- e) Broad descriptions of proposed land modelling and areas of cut and fill. The plan must demonstrate that any proposed changes of level will not have an adverse effect on the plants and natural features to be retained.
- f) Description of landscape values being promoted (e.g. bushland habitat, temperature moderation, reduce runoff and increase infiltration, heritage, streetscape compatibility, etc.).
- g) Indicative planting scheme that includes an indicative schedule of tree, shrub and groundcover species to be used (include botanical and common name, mature height, spread of foliage and container size). Any species nominated for street trees should be listed separately.
- h) Specification notes for maintenance works (watering, weeding and fertilising of plants for successful establishment) including the proposed duration of the plant establishment period. Also proposed maintenance activities that will affect the appearance of plants such as hedging.
- i) Accessibility and universal design statement for open space areas, including compliance with relevant Australian Standards, seating types (including armrests and backs), ramps, kerb ramps etc.
- j) Existing trees that adjoin the site or may be affected by the development including existing trees to be removed.
- k) Landscape details (including cross sections and elevations) to indicate changes in level, walls, depth of planting media, preliminary construction details or any key components.
- l) Replacement strategy for failures in plant materials and built works.

- m) Erosion and sediment control details may need to be included depending upon the scale of the works.
- n) Submit any other related plans for the context eg. masterplans, precinct plans with other stages, circulation networks.

An example of a Landscape Concept Plan is included in Figure F3.2. Elevations and sections are recommended to illustrate design intent.

Figure F3.2



4.4.3. Landscape Detail Plan

A Landscape Detail Plan is required for all Category 3 developments and may be required for some category 2 developments. When Council requires a Landscape Detail Plan the documentation is to be concise and detailed, suitable for tendering. The Landscape Detail Plan must be consistent with the Landscape Concept Plan approved as part of the development consent. For smaller developments, it may be appropriate for the Landscape Concept Plan to be combined with the Landscape Detail Plan.

All requirements listed to be shown on the Landscape Concept Plan, a Landscape Detail Plan should provide information on the following:

1. Site layout

- a) Details for special treatments (e.g. weed eradication, creek banks, mounding, roof gardens, extent or edge basement). Clearly define deepsoil and podium areas.
- b) Location of utility areas and screening details (e.g. garbage receptacle area, storage of recyclable waste, clothes drying area, letter boxes, play areas, common open space, staff recreation areas).
- c) Location and details of lighting and other outdoor fixtures (e.g. signs, furniture including street lighting and power poles).

2. Built structures

- a) Existing and proposed buildings and other structures (including finished levels and floor heights) including play equipment.
- b) Roadways, driveways, car parks, podiums and footpaths (including materials and finished levels). Particular attention should be paid to any areas proposed to meet Australian Standards on Disability Access.
- c) Existing and proposed walls, fences, gates and retaining walls (including materials, heights, colours and finished levels).
- d) Overshadowing caused by proposed built structures on existing site features and on adjacent land.

3. Plant selection

- a) Planting layout plan showing location of species and dimensions at maturity, including street trees, trees on adjacent properties, trees on site, shrubs, groundcovers, turf, etc.
- b) Planting schedule with botanical and common names, whether evergreen or deciduous and local/native/exotic species, container size, quantities, dimensions at maturity, spacing and staking and tying requirements for all species nominated.
- c) Schedule listing botanical and common names of trees to be removed, and trees to be retained.

4. Construction details

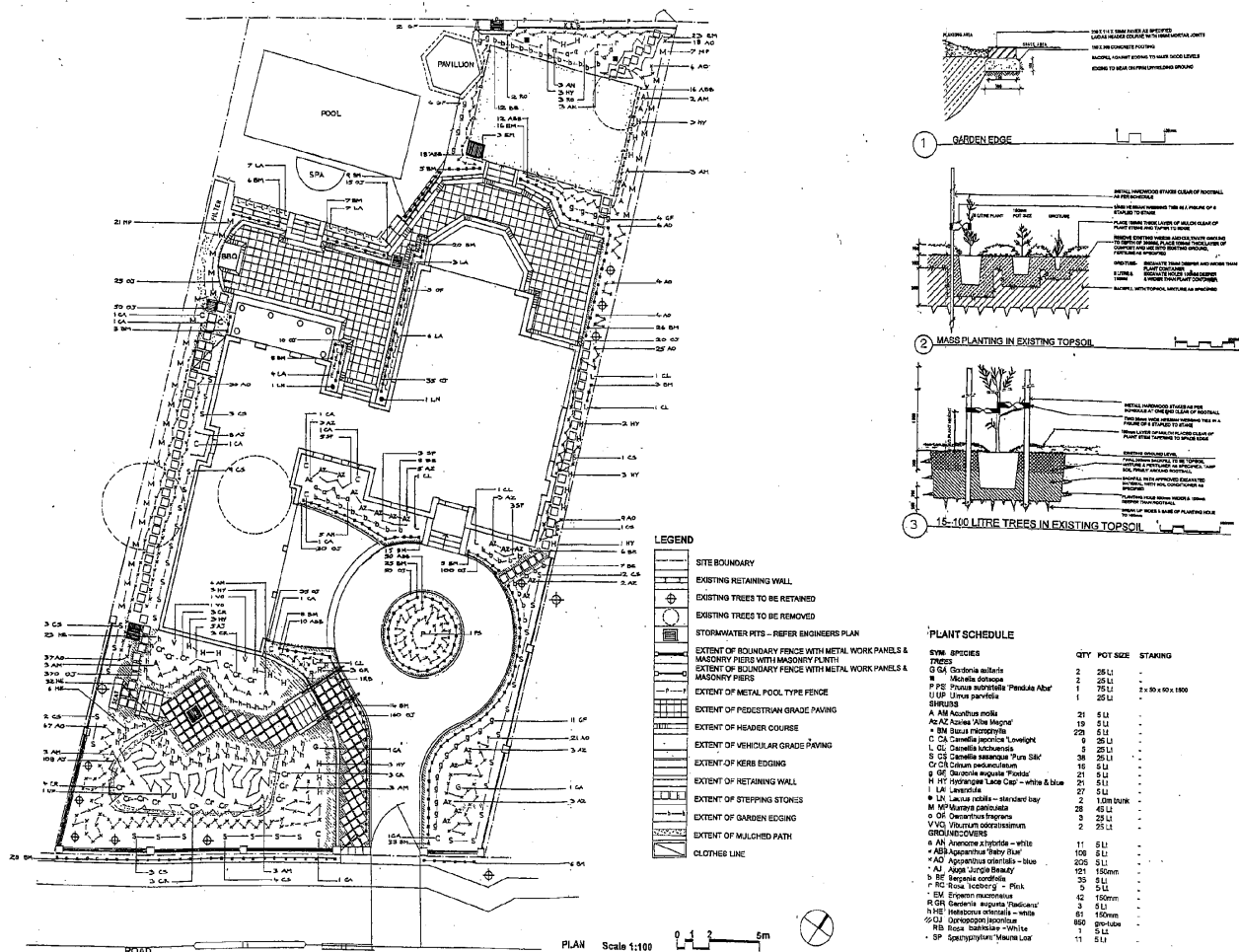
- a) Standard construction and detail drawings (e.g. sections through mass planting beds, tree planting, paths, steps, retaining walls and fencing).

- b) Detailing and location of all edge treatments (e.g. concrete, brick, timber).
- c) Any non-standard construction details to demonstrate how the design would be implemented.

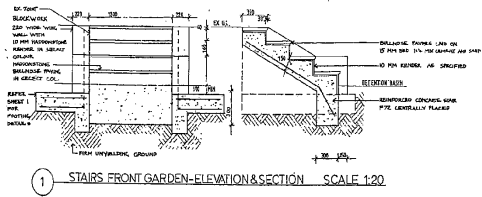
Examples of Landscape Detail Plans are included in Figures F3.3 – F3.5.

Figure F3.3: Landscape Detail Plan (Single Residential)

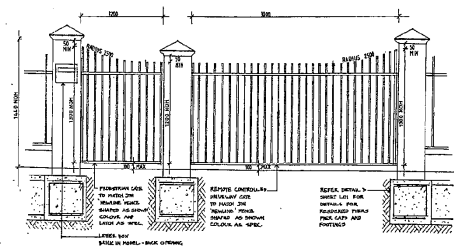
LANDSCAPE DETAIL PLAN (SINGLE RESIDENTIAL)



LANDSCAPE DETAIL PLAN CONTINUED (SINGLE RESIDENTIAL)



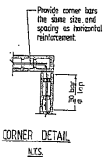
1 STAIRS FRONT GARDEN-ELEVATION & SECTION SCALE 1:20



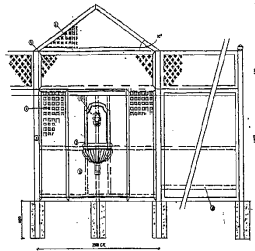
2 ENTRY GATES-ELEVATION SCALE 120

BLOCKWORK NOTES

- [illegible]

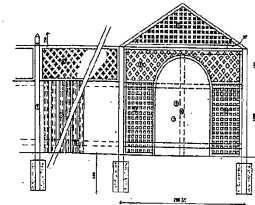


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③ FENCE AND DETAIL TO POOL AREA

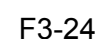


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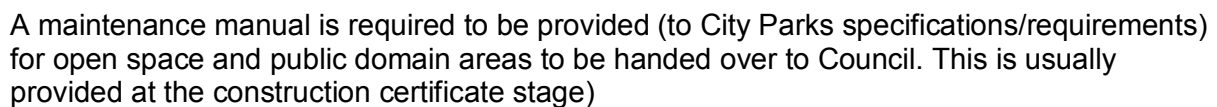
④ TIMBER FENCE AND DETAIL, EASTERN BOUNDARY.

NOTE - ALL FENCING TO HAVE PAINTED FINISH
AS SPEC. COLOURS TO SCHEDULE BY ARCHITECT

LANDSCAPE DETAIL PLAN (MULTI-UNIT)



LANDSCAPE DETAIL PLAN (SUBDIVISION)



When the landscape works associated with the consent are completed a Landscape Implementation Report is to be submitted to Council. This will provide written certification that:

- Penrith Development Control Plan 2014
Appendix F3 DA Submission Requirements

- d) A plant establishment period has been set, and its duration and name of contractor engaged to undertake the maintenance work.

No Occupation Certificate for the development will be issued prior to Council receiving this report. If Council is not the Principal Certifying Authority for the development, a copy of the Implementation Report is to be forwarded to Council.

4.4.5. Landscape Maintenance Report

Twelve months after the Principal Certifying Authority has issued an Occupation Certificate, a Landscape Maintenance Report is to be submitted to Council. This will provide written certification on whether the approved landscaping has been completed in accordance with the approved landscape plan and consent conditions. The Maintenance Report should also state whether the work has been completed in accordance with all relevant Australian Standards and that all plants are healthy with no evidence of die-back, stress, disease or loss.

4.4.6. Landscape 3 Year Landscaping Report

For larger and more visually significant developments, Council at its discretion may place a condition on the consent requiring that a report be provided to Council 3 years after the issuing of the Occupation Certificate. This report is to certify one of the following:

- a) Landscaping has matured and is in accordance with the original landscape approval.
- b) The landscaping has not matured in accordance with the original design philosophy and requires significant restoration. If this is the case, restoration plans are to be submitted to Council for approval and implemented at the expense of the property owners.

As a guide, developments that may have this condition placed upon the consent will generally be in visually significant locations or of a size that Council considers warrants ensuring that the landscaping is still thriving and in accordance with the original design philosophy.

4.5. Erosion and Sediment Control

An Erosion and Sediment Control Plan is required where any proposed land use or development activity involves:

- a) The disturbance of the existing ground surface or placement of fill thereon, and/or result in a change to the shape of the land; and
- b) Changes in the velocity and/or volume of water runoff entering directly or indirectly a natural waterbody, or flowing over the land.

4.5.1. Erosion and Sediment Control Plan

Erosion and Sediment Control Plans (ESCP) must include:

- 1) A drawing that clearly shows the site layout and, where appropriate, the approximate locations of best management practices and other matters listed in (2) and (3) below. Where these drawings are to scale, the scale should be at 1:500 or larger.

A narrative should accompany the drawing that describes how erosion control and soil and water management will be achieved on site, including ongoing maintenance of structures.

2) The following background information should be presented on the drawings(s):

- a) Location of site boundaries and adjoining roads;
- b) Approximate grades and indications of direction of fall;
- c) Approximate location of trees and other vegetation, showing items for removal or retention (consistent with any other plans attached to the application);
- d) Location of site access, proposed roads and other impervious areas (e.g. parking areas and site facilities);
- e) Existing and proposed drainage patterns with stormwater discharge points;
- f) North point and scale.

3) On the drawing or in a separate commentary, show how the various soil conservation measures will be carried out on site, including:

- a) Timing of works;
- b) Locations of areas where a protective ground cover will, as far as is practicable, be maintained;
- c) Access protection measures;
- d) Nature and extent of earthworks, including the amount of any cut and fill;
- e) Where applicable, the diversion of runoff from upslope lands around the disturbed areas;
- f) Location of all soil and other material stockpiles including topsoil storage, protection and reuse methodology;
- g) Location and type of proposed erosion and sediment control measures;
- h) Site rehabilitation proposals, including schedules;
- i) Frequency and nature of any maintenance program;
- j) Other site-specific soil or water conservation structures.

4.5.2. Additional Erosion and Sediment Control Measures for Large Sites

Where an application is for a site(s) over 2500m² and there will be substantial excavation, cut and/or fill, the applicant is required to include a number of additional measures in the Erosion and Sediment Control Plan:

- 1) Identify all areas likely to cause pollution of waterways from the transport of stormwater runoff containing sediment and silt, and implement appropriate devices to stop the risk of pollution.

- 2) Divert clean water around the construction site to prevent contamination.
- 3) Retain as much natural vegetation as possible and limit site disturbance.
- 4) Control stormwater that enters the construction site from upstream.
- 5) Divert stormwater from undisturbed upper slopes onto stable areas.
- 6) Retain and stockpile all excavated topsoil on site for future landscaping and to minimise risk of erosion.
- 7) Prevent sediment/silt from entering adjoining public or private property (especially drains) by installing sediment control devices at the low side of sites and wash down areas.
- 8) Provide a single, stabilised entry/exit point to the site.
- 9) Prevent sediment or building materials from reaching the road or Council's stormwater system. Remove sediment by sweeping, shovelling or sponging. Under no circumstances shall sediment be hosed.
- 10) Where a work zone permit over public property is applicable, ensure that appropriate debris control devices are implemented to prevent spillage of building materials into stormwater drains.
- 11) Compact all drainage lines when backfilling.
- 12) Connect downpipes to the stormwater system as early as possible.
- 13) Revegetate all disturbed areas, after on-site works are completed, in order to stabilise surface.
- 14) Maintain all sediment control devices during construction and earthworks to standards acceptable to Council.

4.6. Stormwater and Drainage

Relevant Stormwater Drainage Policy

Council has adopted the *Stormwater Drainage Specification for Building Developments*. This policy provides guidance to ensure ensure that stormwater drainage for building developments is designed to provide a robust, safe and low maintenance system to manage stormwater impacts on the drainage network and surrounding properties in a holistic manner that is incorporated aesthetically with the overall development.

This policy sets out the documentation that is required to be submitted to Council as part of the Development Application.

4.6.1. Drainage Plan

Where developments result in stormwater runoff, detailed stormwater management plans are required. The submission requirements are contained in Council's *Stormwater Drainage Specification for Building Developments*.

Stormwater design is an important consideration in planning a development and should be considered prior to determination of the final building layout and landscaping treatment.

A concept Stormwater Management Plan (SMP), prepared by a suitably qualified person shall be submitted with the Development Application. The SMP shall include a site drainage plan prepared in accordance with the checklist in Appendix A of Council's *Stormwater Drainage Specification for Building Developments*. The SMP shall also address Council's *Water Sensitive Urban Design Policy* and *Water Sensitive Urban Design Technical Guidelines*.

4.6.2. Stormwater and Drainage Report

A Stormwater and Drainage Report may be required for major development; or if the site is subject to flooding from adjacent or on site drainage channels; or if the site is affected by drainage constraints; or if the development proposes to divert a natural or artificial drainage line (including overland flow paths).

A Stormwater and Drainage Report must include:

- 1) A statement or justification as to why the proposed development is appropriate on flood prone land;
- 2) A survey of the site, with 1 metre contours;
- 3) A survey of the watercourse/drainage line (if applicable);
- 4) The estimated 1% Average Exceedance Probability flood level (or 1:100 ARI flood level); and
- 5) Demonstration that:
 - The development will not increase the drainage flow to other properties;
 - The quantity and velocity of runoff will not increase, post development; and
 - The buildings are sited away from the impact of any drainage overflow.
- Further details are contained in Council's *Stormwater Drainage Specification for Building Developments*.

4.6.3. On Site Detention Systems

An On Site Detention Systems Report is required for developments as specified in Council's *Stormwater Drainage Specification for Building Developments*. The system must be designed by a suitably qualified civil engineer and address the requirements of the DCP and Council's *Stormwater Drainage Specification for Building Developments*.

4.6.4. Site and Soil Assessment Report

A Site and Soil Assessment Report is required to be submitted for a new domestic 'Aerated Wastewater Treatment System' (AWTS) when:

- The buffer distances as referred to in the controls in the On Site Sewage Management subsection of Infrastructure and Services section are not provided;

- A subdivision application is being considered;
- The AWTs is proposed within an identified high risk area; e.g. when site slope exceeds 20% (refer to table in the On Site Sewage Management provisions of the Infrastructure and Services Section of this Plan); or
- An on-site SMS already exists on the site and a second system is proposed.

A Site and Soil Assessment Report is required to be submitted for all other types of on-site SMS. Section 4 of the 'Environmental and Health Protection Guidelines - On Site Sewage Management for Single Households' and AS/NZS 1547:2000 should be used as a guide. A model Site and Soil Assessment Report is included in Council's On-site Sewage Management and Greywater Reuse Policy.

4.7. Waste Management

4.7.1. Waste Management Plans

Waste Management Plans are required for any application for demolition, construction or change of use of buildings for rural, residential, commercial or industrial development, or subdivision. This includes alterations or additions of over 50% of the existing buildings. Waste Management Plans are also required for applications for a Complying Development Certificate.

Waste Management Plans must provide details of:

- The types and volumes of wastes and recyclables likely to be generated as a result of the development;
- How waste and recyclables will be stored and treated on site;
- How waste and recyclables are to be disposed of; and
- How ongoing waste management will operate once the development is complete.

Table F3.5 provides an outline of the details required on these plans, which are to accompany the development application.

Table F3.5

Proposed Development	Details Required on Plans
Demolition	<p>Areas to be excavated</p> <p>On-site sorting and storage areas</p> <p>Access for vehicles</p>

Proposed Development	Details Required on Plans
Construction	Areas to be excavated On-site sorting and storage areas Access for vehicles
Single Dwellings and Dual Occupancies	Location of waste storage and recycling areas
Multi-Unit Dwellings	Location and design for waste storage areas / facilities
Commercial Development	Location and design of waste storage areas / facilities Vehicular access
Industrial Development	Location and design of waste storage areas / facilities Vehicular access

4.7.2. Sample Waste Management Plans

The applicable sections of Tables F3.6 – F3.10 below must be completed and submitted with your development application for demolition, construction or use of a premise.

Table F3.6

OUTLINE OF THE PROPOSAL			
Site Address:		<i>162 Smith Street, Green Park</i>	
Name of Applicant:		<i>Joe Bloggs, Buildwell Construction</i>	
Address of Applicant:		<i>PO Box 101, Penrith NSW 2003</i>	
Phone:	<i>4732 1234</i>	Fax:	<i>4732 4321</i>
Buildings and other structures currently on the site:			
<i>3 bedroom brick house, concrete slab and driveway, timber fencing</i>			
Description of Proposal:			
<i>Two storey commercial building (with offices), built with a metal frame and brick construction</i>			
Applicant's Signature:		Date:	

Table F3.7: Demolition

Materials	Destination			
	Re-use and recycling		Disposal	
Material	Estimated Volume (m ² or m ³)	ON SITE Specify proposed reuse or on-site recycling	OFF-SITE Specify contractor and recycling outlet	Specify Contractor and Landfill Site
Excavation Material	200m ³	<i>Re-use top soil for landscaping and behind retaining walls</i>		<i>Remainder to XY landfill by JKL waste contractors</i>
Green waste	60 m ³	<i>Separated – some chipped for landscaping</i>	<i>Remainder to XYZ Landscape Suppliers for re-use</i>	<i>Stumps and large trunks separated and to Deep Gully Land Fill by JKL Waste Contractor</i>
Bricks	100 m ³	<i>Clean and reuse lime mortar bricks for footings. Broken bricks for internal wall</i>	<i>Concrete mortar bricks to KLM Crushing and Recycling Company</i>	<i>NIL</i>
Concrete	15 m ³	<i>Existing driveway to remain during construction</i>	<i>KLM Crushing and Recycling Company</i>	<i>NIL</i>
Timber – what kind? <i>Hardwood</i>	5 m ³	<i>Re-use for formwork and studwork. Chip remainder for use in landscaping.</i>	<i>To stockpile at EFG Transfer Station, by JKL Waste Contractor</i>	<i>NIL</i>
Plasterboard	3 m ³	<i>Break up and use in landscaping</i>		<i>Remainder to XY landfill by JKL waste contractors</i>

Materials	Destination			
	Re-use and recycling		Disposal	
Material	Estimated Volume (m ² or m ³)	ON SITE Specify proposed reuse or on-site recycling	OFF-SITE Specify contractor and recycling outlet	Specify Contractor and Landfill Site
Metals - What kind? <i>Aluminium</i>	<i>1 m³</i>		<i>FGH Metal Recyclers</i>	<i>NIL</i>
Other <i>Tiles/ Doors/ Windows</i>	<i>5 m³</i>	<i>Broken tiles used for access</i>	<i>S.T Second Hand Building Supplies</i>	<i>NIL</i>

Note: Details of on-site waste management should be provided on the plans accompanying your application (i.e. location of on-site storage areas / containers, vehicular access point, etc).

Table F3.8: Construction

Materials	Destination			
	Re-use and recycling		Disposal	
Material	Estimated Volume (m ² or m ³)	ON SITE Specify proposed reuse or on-site recycling	OFF-SITE Specify contractor and recycling outlet	Specify Contractor and Landfill Site
Excavation Material		<i>See demolition section</i>		
Green waste		<i>See demolition section</i>		
Bricks	2 m ³		<i>KLM Crushing and Recycling Company</i>	<i>NIL</i>
Concrete	5 m ³		<i>KLM Crushing and Recycling Company</i>	<i>NIL</i>
Timber – what kind? <i>Hardwood</i>	3 m ³	.	<i>XYZ Landscape Suppliers for chipping and composting</i>	<i>NIL</i>
Plasterboard	1 m ³		<i>XYZ Landscape Suppliers</i>	<i>NIL</i>
Metals - What kind? <i>Aluminium</i>	3 m ³		<i>FGH Metal Recyclers</i>	
Other <i>Tiles/ Doors/ Windows</i>	1 m ³			<i>Deep Gully landfill by JKL Waste Contractor</i>

Note: Details of on-site waste management should be provided on the plans accompanying your application (i.e. location of on-site storage areas / containers, vehicular access point, etc).

Table F3.9: Ongoing use of a premise

Type of Waste To be Generated	Volume (m ³ or litres per week)	Proposed On-Site Storage and Treatment Facilities	Destination
<p>Recyclables</p> <ul style="list-style-type: none"> • office paper • retail paper / cardboard • glass, aluminium, steel, and plastic containers • wooden pallets • printer cartridges • plastic crates • ferrous and non-ferrous metals • wood/timber • vehicle batteries <p>Liquid Waste</p> <ul style="list-style-type: none"> • cooking oils • sump oil <p>Organic Waste</p> <ul style="list-style-type: none"> • food organics • garden organics <p>Medical Waste</p> <ul style="list-style-type: none"> • syringes, sharps • bandages and any blood or body fluid contaminated products <p>Other Waste</p> <ul style="list-style-type: none"> • food scraps etc • non recyclable plastics (i.e. wrapping) • non-recyclable retail wastes including fabrics, ceramics and contaminated paper and cardboard 	Refer to waste generation rates in Appendix F4 Technical Information	<p>Interim Storage</p> <ul style="list-style-type: none"> • separate storage bins for general waste and recyclables placed in strategic locations throughout the building (see location plan) • liquid wastes stored within sealed containers • all medical wastes stored in approved secured containers • garden organics removed by gardening contractor • food organics stored in water and vermin proof containers <p>Storage Prior to Collection</p> <ul style="list-style-type: none"> • central garbage and recycling bin storage bay/room for all users located adjacent to loading dock at rear of complex • shared garbage and recycling bin bays (residential units) provided in accordance with Councils requirements (see plans) • food and organic waste stored in refrigerated rooms if required • medical waste bins store in secure room or storage area • liquid waste and batteries stored in a suitably bunded area or location to secure accidental spillage • wooden pallets and plastic crates stored in loading dock area 	<p>Collection and Processing</p> <ul style="list-style-type: none"> • dry recyclables collected weekly by ABC Contractors for processing at the Disy Recycling Plant Sydney • general waste collected twice weekly by Dump Contractors for delivery to the Government landfill site at Western Creek • medical waste collected weekly by Med Contractors for incineration at the local hospital • cooking oils and motor vehicle oils collected by Liquid Recyclers for reprocessing into liquid gold • food organics collected twice weekly by Food Processors for processing and recovery of energy • garden organics delivered to XYZ composting plant • wood and plastic crates collected by the distributor for reuse • scrap metals collected weekly by Ferrous Contractors for recycling at their Bathurst Plant

Type of Waste To be Generated	Volume (m ³ or litres per week)	Proposed On-Site Storage and Treatment Facilities	Destination
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Note: Attach plans showing the location of waste storage and collection areas, and access routes for tenants and collection vehicles.

Table F3.10: Ongoing management of a premise

Describe how you intend to ensure the ongoing management of waste on-site
1. Interim waste storage areas and/or bins and communal waste storage areas and/or bins will be well signposted to ensure correct use.
2. Cleaning staff will be employed to transfer wastes and recyclables from the interim storage containers to the communal storage area and ensure that the storage bins and storage area is kept clean and in good order.
3. The company tenanted the premises will prepare an environmental management system addressing office and retail waste and recycling. This will include expectations and objectives for sorting and separating wastes.
4. An information kit will be provided to all tenants addressing office and retail wastes, their recycling requirements, and details of the location and operation of the waste storage area.
5. Waste audits will be conducted annually to determine waste output and to improve waste avoidance and resource recovery practices.

4.7.3. Waste Management Checklists

Checklist for Applicants

	Yes	No
Is the waste management plan completed?		
Are facilities available for the separation of wastes and recyclables?		
Has an area been allocated for the storage and collection of wastes?		
Are the waste storage and collection areas located so as to provide easy access for both occupants and collection services?		
Do your plans show details of on-site storage space for construction materials, waste materials and recyclables?		
Is the project planned to maximise the reuse of materials?		
Have arrangements been made for the ongoing management of waste?		

Checklist of Site Works

	Yes	No
Is the waste management plan acknowledged on-site?		
Are waste responsibilities clarified for all personnel and sub-contractors?		
Are works scheduled to minimise time between delivery and installation?		
Is the site planned and managed to minimise wastes?		
Have you arranged for the sale of recycled and salvaged materials?		
Are waste bins covered, sign-posted and properly used?		
Is site signage in place indicating environmental/waste commitment?		

4.8. Transport and Traffic Impact Assessments

4.8.1. Traffic Impact Statement

A Traffic Impact Statement is a simplified process of identification and assessment of relevant traffic impacts of a development. A Traffic Impact Statement may be required for any development proposal where traffic generation and impacts are minor, but have potential to adversely affect the surrounding areas. A Traffic Impact Statement may be prepared by anyone as long as it is of a suitable standard.

The information provided should reflect the size, type and location of the development as well as the relationship to surrounding developments and the adjacent transport network.

The following provides an outline of issues to be addressed in a Traffic Impact Statement:

- a) Traffic generation/attraction and trip distribution of the proposed development;
- b) Parking provisions appropriate to the development;
- c) Impact on road safety;
- d) Existing public transport services in the vicinity of the proposed development;
- e) Impact of generated traffic on key adjacent intersections, streets in the neighbourhood of the development, the environment and other major traffic generating development sites in close proximity;
- f) Existing parking supply and demand in the vicinity of the proposed development;
- g) Safety and efficiency of access between the site and the adjacent road network;
- h) Impact of traffic noise;
- i) Peak period traffic volumes and congestion levels at key adjacent intersections;
- j) Safety and efficiency of internal road layout, including service and parking areas;
- k) Existing proposals for improvements to the adjacent road network and hierarchy;
- l) AADT- annual average daily traffic. It is the estimated yearly total of traffic movements divided by 365; and
- m) Volumes and historical trends on key adjacent roads.

4.8.2. Traffic Report

A Traffic Report is an intermediate level of investigation and assessment of relevant traffic impacts of a proposed development. Development proposals of a size or capacity detailed in Column 2 of Schedule 3 of *State Environmental Planning Policy (Infrastructure) 2007* must be accompanied by a Traffic Report. Council may also require a Traffic Report for other development proposals whose scale, nature or type has potential to impact on transport and traffic.

The Traffic Report must detail the assessed impact of projected pedestrian, cycle and vehicular traffic associated with the proposal and include recommendations as to the extent and nature of the traffic facilities necessary to preserve or improve the safety and efficiency of the adjacent road system, especially on major roads.

The requirements for Traffic Studies and Reports are detailed in the NSW Roads and Traffic Authority "Guide to Traffic Generating Developments." The information provided should reflect the size, type and location of the development as well as the relationship to surrounding developments and the adjacent transport network. Reports should be prepared in accordance with the requirements of the "Guide to Traffic Generating Developments", an outline of which is provided in Table F3.11.

Table F3.11: Key issues in preparing traffic impact studies

Procedures & Key Parameters	Source	Check✓
<i>Brief description of the development</i>		
<i>Application and study process</i>		
Introduction		
<i>Background</i>		
<i>Scope of report</i>		
<i>The key issues and objectives of a traffic impact study</i>		
General Data Collection / Existing Conditions		
<i>Description of the Site and Proposed Activity</i>		
<i>Site location</i>		
Current land use characteristics (zoning) of the proposed site and land use in the vicinity	Development Consent Authority	
<i>Site access</i>		
<i>The Existing Traffic Conditions</i>		
Road hierarchy; including the identification of the classified road network (major and minor roads) which may be affected by the development proposal	Council / RTA	
Inventory of road widths, road conditions, traffic management and parking control	Council / RTA and Survey	
Current and proposed roadworks, traffic management works and bikeways	Council / RTA	
<i>Traffic Flows</i>		

Table F3.11 cont.

Procedures & Key Parameters	Source	Check✓
Commuter parking provision	State Rail / Cityrail / Survey	
<i>Pedestrian Network</i>		
Identify major pedestrian routes	Survey	
Pedestrian flows and potential conflicts with vehicles, particularly where such conflicts cause capacity constraint on either vehicular or pedestrian movement	Survey	
Pedestrian infrastructure	Survey	
<i>Proposed developments in the vicinity</i>		
Proposed Development		
<i>The Development</i>		
Plan reference, if plans not contained in study report		
Nature of development		
Gross floor areas of each component of development		
Projected number of employees/users/residents		
Hours and days of operations		
Staging and timing of development		
Selection of appropriate design vehicles for determining access and circulation requirements	Section 6	
<i>Access</i>		
Driveway location, including review of alternative locations	Sections 5, 6	
Sight distance of driveways and comparisons with stopping and desirable minimum sight distances	Section 6	
Service vehicle access	Section 6	
Analysis of projected queuing at entrances	Section 6	
Current access to site and comparison with proposed access		
Provision for access to, and by, public transport	Section 6	

Table F3.11 cont.

Procedures & Key Parameters	Source	Check✓
<i>Circulation</i>		
Proposed pattern of circulation	Section 6	
Internal road widths	Section 6	
Provision for bus movements	Section 6	
Service area layout		
<i>Parking</i>		
Proposed supply		
Parking provision recommended by State Government policy	RTA / DUAP	
Council code and local parking policies and plans	Council	
Parking layout		
Projected peak demand, based where appropriate on similar research reports and on surveys of similar developments;	Section 5	
Parking for Service / courier vehicles and bicycles	Section 5	
Impact of Proposed Development		
<i>Traffic generation during design periods</i>		
Daily and seasonal factors		
Pedestrian generation and movements		
<i>Traffic Distribution and Assignments</i>		
Hourly distribution of trips		
Assignments of these trips to the road system based where possible on development feasibility studies or on origin/ destination surveys undertaken at similar developments in the areas		
<i>Impact on Traffic Safety</i>		
Assessment of Road Safety Impact		
<i>Impact of Generated Traffic</i>		
Daily traffic flows and composition on key streets and their expected effect on the environment particularly in residential areas		

Table F3.11 cont.

Procedures & Key Parameters	Source	Check✓
Peak period volumes at key intersections and effect of generated traffic on congestion levels	Survey	
Impact of construction traffic during construction stages		
Other proposed developments in the vicinity their timing and likely impact, if known		
Assessment of traffic noise		
<i>Public Transport</i>		
Options for extensions and changes to bus routes and bus stops following discussions with the STA and or private bus operators	STA / Private Operators	
Provision for pedestrian access to bus stops		
<i>Recommended Works</i>		
Improvements to site access and circulation		
Improvements to roads, signals, roundabouts and other traffic management measures		
Improvements to pedestrian facilities		
Effect of recommended works on the operation of adjacent developments		
Effect of recommended works on public transport services including access to bus routes and bus stops		
Provision of LATM measures		
Funding of proposed improvement projects		
Noise attenuation measures		

4.8.3. Transport Management and Accessibility Plan

A Transport Management and Accessibility Plan (TMAP) is required to be submitted for all major developments. A TMAP is a comprehensive assessment of the transport impacts of a major site development or re-development proposal. The TMAP must identify a package of appropriate transport measures (including infrastructure, services and demand management initiatives) for the proposed development, to manage the demand for travel to and from the development, and reduce the demand for travel by private car and commercial vehicles. This should include maximising opportunities for public transport, cycleways and pedestrian paths that link to existing or planned community, recreational and business services and facilities.

The TMAP must be prepared by a suitably qualified and experienced person. The NSW Department of Transport and Roads and Traffic Authority's "Draft Interim Guidelines on Transport Management and Accessibility Plans" provides information of the requirements of TMAPs. The following information is taken from this document to provide an overview of the requirements for a TMAP.

1) Project Context

- a) Outline the strategic context; and
- b) Set objectives and targets/performance criteria. Objectives and targets should include the objectives of this DCP, particularly the general objectives of C10 'Transport, Access and Parking', the specific objectives of the Transport and Land Use Section of this Plan and any other relevant section.

1) Proposal

- a) Describe the proposed site;
- b) Describe the proposed development/land use and the potential future land uses; and
- c) Describe the current transport infrastructure context.

2) Initial Transport Assessment

- a) Outline the technical assessment assumptions; and
- b) Assess the existing travel patterns (including freight).

3) Transport Assessment of Proposal

- a) Determine an initial estimate of travel demand (person trips, freight trips or both);
- b) Estimate the distribution of generated trips between origins and destinations;
- c) Estimate likely modal split (including freight);
- d) Estimate the loads on transport infrastructure/services that serve the project study area;
- e) Analyse capacity/amenity/government policy implications and determine if desired transport system performance criteria are met;
- f) Identify feasible options (including transport and development design) to modify transport impacts; and
- g) Test options to meet objectives and targets.

4) TMAP and Agreement

- a) Identify appropriate measures, including infrastructure, services and policies; and
- b) Check options against objectives and targets, and cost effectiveness and agree on preferred option package.

5) Agreed Package

- a) Include consideration of funding, timing and evaluation.

6) Review of TMAP and Agreement

- a) At the time of development application and at an appropriate interval.

4.9. Works to Trees and Vegetation

Where trees or vegetation are proposed to be ringbarked, cut down, topped, lopped, removed, injured or wilfully destroyed, an assessment of the impact of that work must be carried out. This assessment will vary in scale and complexity depending on the location and extent of the works and whether the site contains any threatened species, population, ecological community or its habitat. Applicants are advised to consult with Council's

Development Services Unit or Tree Management Officer regarding the form of application (Tree Pruning/Removal Application or Development Application) and the level of information required.

4.9.1. Tree Survey and Assessment Report

A Tree Survey and Assessment Report is the minimum level of information to be provided for works to any tree or vegetation. The Tree Survey and Assessment Report is to be provided for a Tree pruning/removal application. A Tree Survey and Assessment Report must address the following matters:

- 1) The location and type of tree(s) or vegetation;
- 2) Details of the proposed works and the reasons for the works;
- 3) The health and condition of the tree(s) or vegetation, including its structural soundness and the condition of the root zone;
- 4) The aesthetic, scientific and/or historic importance of the tree(s) or vegetation;
- 5) The impact of the proposed work on the appearance, health or stability of the tree(s) or vegetation and the general amenity of the surrounding area, including any effect on the streetscape;
- 6) In the case of an application to remove a tree(s) or vegetation, whether pruning would be a more practicable and desirable alternative;
- 7) The risk of personal injury;
- 8) The risk of damage to buildings, structures or services;
- 9) The extent of other trees and vegetation on the property;
- 10) Whether the tree(s) or vegetation is habitat, a source of food or shelter, or used by fauna.

4.9.2. Arboricultural Survey Report (or Arborist Report)

All existing vegetation on the site should be noted on the landscape site analysis plan and in the landscape submission to Council. This includes all existing trees, bushland and shrubs of any prominence or value. However, in the case of large and/or significant trees or shrubs, a separate report should be prepared by a qualified consulting arborist. This report should include an Arboriculture Survey to provide detailed information on the trees present. Full detail of trees to be removed, as well as trees proposed for retention, should be given.

The report is to be prepared by an arborist. Arborists Reports on existing trees and shrubs taller than 5m are to include the following information, where appropriate:

- 1) Allocated survey number (to correlate with survey plan and identify location within site);
- 2) Species name and common name;
- 3) Trees/shrubs to be retained;

- 4) Trees/shrubs to be removed due to the proposed development;
- 5) Trees/shrubs to be removed due to death or disease;
- 6) Estimated height (to aid on-site identification and assessment of significance);
- 7) DBH (Diameter at Breast Height – to indicate tree maturity and allow estimation of lateral root spread);
- 8) Canopy spread (to allow assessment of any requirement to prune or likely impact of overshadowing);
- 9) Health and/or condition status;
- 10) Recommended TPZ (Tree Protection Zone) for trees, which are to be retained, if applicable. This is the minimum distance from the centre of any tree at which development should commence;
- 11) All trees on adjoining properties that are within 3m of the boundary of the proposed development; and
- 12) Where the proposed development will have a significant impact upon the future health and suitability for retention of other large or significant trees located on adjacent properties, but which are further away than 3m, their existence is to be noted and appropriate recommendations provided for their management.

Where the consulting arborist chooses to apply further information, such as a SULE rating, or comparative suitability scale, Council will give this due weight in an assessment of an application.

Council, in assessing development applications where tree removal is included, will consider the following:

- 1) The contribution that the tree makes to the visual landscape that it sits within, including streetscape and distant views;
- 2) If trees are proposed to be removed, whether the proposed development can be modified to retain the tree/s; and
- 3) Whether there are any special construction requirements near to or adjacent to any trees proposed to be retained on the development site.

If there are significant trees on the site, which are being retained, Council may require that these trees be valued by a consulting arborist using the Thyer Method of valuation. If this is the case, this information is to be submitted to Council along with a copy of the Thyer Tree Valuation Work sheet for each tree or group of trees as a part of the Arboricultural Survey Report.

It should be noted that Council generally encourages the retention of trees on development sites and encourages development proposals to be designed so as to minimise the need for tree removal, while ensuring the health of the trees which are retained. Council will consider the removal of trees on development sites in the following instances:

- 1) The applicant can demonstrate that it is not possible to modify the development to allow retention of the tree/s as the proposed development will become economically unviable.

- 2) The applicant can demonstrate that the trees are of such a size and scale that, if they were to be retained, they would not be compatible with the development.
- 3) The applicant can demonstrate that the health of the trees warrants their removal as they are posing a hazard or threat.
- 4) The applicant can demonstrate that the safe useful life expectancy of the tree is minimal.
- 5) The applicant can demonstrate that the tree makes minimal contribution to the streetscape.
- 6) The applicant can demonstrate that the tree or trees make minimal contribution to the landscape amenity of the locality or neighbouring properties.

4.9.3 Tree Management Plan

Where trees are proposed to be or are required to be retained as a part of a development, the Arboricultural Survey Report should also provide a comprehensive Tree Management Plan.

The Tree Management Plan is to be in place PRIOR to commencement of any site works. Site works includes the demolition of existing structures or the entrance onto site of any machinery for excavation, demolition or large scale rubbish removal.

4.9.4. Flora and Fauna Assessment Report including a Seven Part Test

Where vegetation works are proposed to any indigenous vegetation, a Flora and Fauna Assessment Report will, in most cases, also be required. The Flora and Fauna Assessment Report must be undertaken by a suitably qualified and experienced person; i.e. a person with tertiary qualifications in ecology, zoology or botany; with a minimum of 5 years experience in undertaking flora and fauna surveys and assessments; with a demonstrated knowledge of the flora and fauna that occurs in the Penrith local government area; and possessing appropriate licences or approvals under relevant legislation.

The assessment and report must be undertaken and prepared in accordance with the following guidelines:

- *Threatened Species Assessment Guidelines – The Assessment of Significance for TSC Act* (DECCW (OEH) 2007)
- Threatened Species Survey and Assessment: Guidelines for developments and activities (working draft) (DEC, 2004)
- *Significant Impact Guidelines – Matters of National Environmental Significance for the EPBC Act* (Prepared by the Commonwealth Department of the Environment, Water, Heritage and the Arts, 2013).

The report must include as a minimum:

- 1) A written and mapped description of the plant and animal species present and their habitats;
- 2) A clear site plan showing, as a minimum, the proposed development and any associated APZ and Effluent Management Area, location of all vegetation and important site features, location of any vegetation to be removed.

- 3) A statement on whether any of the plant and animal species or their habitats are listed as threatened, endangered or vulnerable species or communities under the *Threatened Species Conservation Act 1995* and/or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*;
- 4) A description of the proposed vegetation works and, if the works are to be undertaken as part of a proposed development, a description of the proposed development, including measures to mitigate adverse impacts;
- 5) An objective assessment to determine whether the proposed works and development are likely to significantly affect any threatened species, populations or ecological communities or their habitats. This assessment is required under section 5A of the *Environmental Planning and Assessment Act 1979*. Section 5A lists the factors that must be taken into account in making such a determination; and
- 6) Consideration of the likely impacts the proposed works or development may have on any potential use of the vegetation as a fauna movement corridor. Where relevant, consideration of the importance of any rural dams for fauna habitats. The location of any Asset Protection Zone or Effluent Management Area should also be considered by the assessment.

4.9.5. Species Impact Statement

A Species Impact Statement must be prepared by a suitably qualified and experienced person. It is required when Council has reviewed the flora and fauna assessment report and determined that the proposed works and/or proposed development are likely to have a significant effect on a threatened species, population or ecological community or its habitat. The species impact statement must be prepared in accordance with the requirements of the *Threatened Species Conservation Act 1995*. Before preparing a species impact statement, the requirements of the Office of Environment and Heritage and Council must be sought.

4.10. Bushfire Assessment Reports

Development applications on bush fire prone land must be accompanied by a Bush Fire Assessment Report. The Bush Fire Assessment Report must include all the information required by the Rural Fire Service's 2006 publication "Planning for Bush Fire Protection" (PBP).

4.11. Flood Study

A Flood Study will be required for any development on land which has been identified as fully or partially flood affected. A flood study must include:

- 1) A statement or justification as to why the proposed development is appropriate on flood prone land;
- 2) A survey of the site, with 1m contours;
- 3) A survey of the main watercourse (if applicable);
- 4) The estimated 1% Average Recurrence Interval (ARI) flood level;

- 5) Location of flood free access/egress, including spot points to demonstrate that the surface of the access is driveable in flood events;
- 6) Demonstration that:
 - a) The development will not increase the flood hazard or risk to other properties;
 - b) The structure of the proposed buildings will be adequate to deal with flooding situations;
 - c) The proposed building materials are suitable;
 - d) The buildings are sited in the optimum position to avoid flood waters and allow safe flood access for evacuation;
 - e) The proposed redevelopment will not expose any resident to unacceptable levels of risk, or any property to unreasonable damage; and
 - f) Any existing buildings comply with the Draft Flood Proofing Code.

Additionally, where filling of flood liable land is proposed, the Flood Study will need to demonstrate that:

- a) Flood levels are not increased by more than 0.1m by the proposed filling;
- b) Downstream velocities are not increased by more than 10% by the proposed filling;
- c) Proposed filling does not redistribute flows by more than 15%;
- d) The potential for cumulative effects of possible filling proposals in that area is minimal;
- e) There are alternative opportunities for flood storage;
- f) The development potential of surrounding properties is not adversely affected by the filling proposal;
- g) The flood liability of buildings on surrounding properties is not increased; and
- h) No local drainage flow/runoff problems are created by the filling.

The above criteria can only be addressed and satisfied by the submission of a detailed Flood Study by an appropriate consulting engineer. The Flood Study would involve both hydrologic and hydraulic analysis of the watercourse and the effects of the proposed filling on flood levels, flow velocities and distribution of flows.

4.12. Salinity Analysis

A Salinity Analysis is required if the site has been identified as subject to a salinity hazard, or if a preliminary investigation has indicated that the site is, or is likely to be, affected by salinity.

A Salinity Analysis must include:

- Results of the initial evaluation;

- Description of the landscape;
- Description of the soil profile;
- Soil chemical analyses;
- Soil aggressivity and sodicity (if relevant);
- The impact of the proposed development on the saline land or potentially saline land;
- The impact of the saline land or potentially saline land on the development; and
- A Remedial Action Plan, which details;
 - i) The remediation objectives;
 - ii) The process and standards by which the land will be remediated; and/or
 - iii) Mitigation measures required during the course of construction;
 - iv) Specific measures that will be undertaken to reduce the risk of salinity damage to property and structures.

Investigations and sampling for salinity are to be conducted in accordance with the requirements of “Site Investigations for Urban Salinity” (Department of Natural Resources).

The author of the Salinity Analysis must sign off on the project on completion of works and submit this to Council prior to an Occupation Certificate being issued, if required.

4.13. Visual Impact Assessment

New proposals on land identified in the LEP on the Scenic and Landscape Values Map or on land zoned E1 National Parks and Nature Reserves or E2 Environmental Conservation are required to submit a Visual Impact Assessment (VIA) with their development application. Depending on the nature of the development, the VIA is to be prepared by either the designer of the development or a suitably experienced and qualified professional.

Visual Impact Assessment Type 1 (VIA 1)

The following information is to be submitted when undertaking a VIA for Category 1 development:

- 1) Describe the existing visual landscape character of the site and surroundings, taking into consideration existing features such as: the natural landscape (e.g. ridgelines, hillsides, slopes, watercourses and vegetation); the built form (e.g. buildings and structures, roads and other infrastructure); and land use patterns (e.g. in rural areas, existing agricultural patterns and scale). Refer to Penrith City Council’s “Landscape Character Strategy” (2006).
- 2) Provide ground level photographs confirming the scenic prominence of the site and surrounding locality relative to public vantage points. Provide a map to indicate the location from where the photograph is taken and an arrow indicating the direction it was taken.

- 3) Identify the visual impacts and list the mitigation measures employed to reduce the visual impact of the development.
- 4) Superimpose a sketch of all components of the development (e.g. buildings, fences, driveways, dams and signage), as well as all mitigation measures (e.g. mature vegetation, colours and screens) onto at least three photo images taken from relevant viewpoints, to illustrate the appearance of the final development.

Visual Impact Assessment Type 2 (VIA 2)

The following information is to be submitted when undertaking a VIA for Category 2 development:

- 1) Baseline Study – Describe and map the existing visual landscape character and determine the objectives for managing visual landscape character. Refer to Penrith City Council's "Landscape Character Strategy" (2006). Describe and map the site and surroundings, taking into consideration existing features such as: the natural landscape (e.g. ridgelines, hillsides, slopes, watercourses and vegetation); the built form (e.g. buildings and structures, roads and other infrastructure); and land use patterns (e.g. in rural areas, existing agricultural patterns and scale).
- 2) Describe the proposed development:
 - a) Analyse, describe and illustrate the main visual components of the proposed development, particularly elements likely to be visible;
 - b) Describe what different development options (e.g. siting options, different building designs (including orientation, form, colours and materials) and landscape designs) have been considered;
 - c) Provide plans showing locations and the extent of major visual features. Include elevations of buildings and other major structures, showing elements such as height, colours and proposed materials; and
 - d) Where appropriate, include a projected timeline describing changes to the proposed development over a period of time.
- 3) Identify and evaluate the potential visual impacts:
 - a) Identify the views and likely viewers affected;
 - b) Identify and describe the likely changes to the visual landscape character and views; and
 - c) Evaluate the impacts showing the relationship between 'sensitivity' of the affected landscape (the extent to which the landscape is able to accommodate the type and scale of development without adverse effect on character or value) and 'magnitude' of the impact (a combination of extent, scale and duration of any impact).
- 4) Demonstrate visual mitigation measures:
 - a) Determine whether or not the proposed development meets the objectives for managing visual landscape character established in step a) above;
 - b) Identify measures that reduce the negative impacts and facilitate the positive impacts (e.g. layout; choice of site level; reduced proportions; reflectivity of colour of materials;

articulation; extent of cut and fill; visual buffers; and extent of vegetation removed and retained); and

- c) Demonstrate a commitment to implementation of the measures and, where relevant, submit a contingency plan should mitigation not be successful.
- 5) Provide a diagrammatic 'summary drawing' to show how all mitigation measures work together in response to the development.

Submission Material for VIA 1 and 2

Appropriate information should be submitted to support the visual impact assessment and may include:

- a) Succinct and understandable text;
- b) Illustrations that are closely linked to the text, including annotated maps, plans, overlays and photographs;
- c) Aerial photographs showing the site and surroundings, predominant patterns of land use, buildings, vegetation and gardens;
- d) Ground level photographs confirming the scenic prominence of the site and surrounding locality relative to public vantage points. Care should be taken in selecting viewpoints and the focal length of camera settings, so as to represent what the eye sees and not mislead interpretation. Panoramic views are best presented as a sequence of such photographs rather than a wide angle photo. A map should be provided to indicate the location from where the photograph is taken and an arrow indicating the direction it was taken;
- e) Measured surveys describing topography and natural features, and locating structures and services;
- f) Charts and tables to convey complex information and allow comparisons to be made (e.g. landscape data, impact magnitude and significance);
- g) Visualisations such as photo montages, video representations, 3D computer-generated models, with viewpoints selected with care;
- h) Specialist reports, such as an architectural concept report or a landscape concept plan.

Council may request additional specific information to assess the ability of a proposal to address the principles for protecting areas with scenic and landscape values, depending on the specific circumstances of the proposal and the site.

4.14. Heritage

4.14.1. Heritage Impact Statements

As a minimum, the following issues must be addressed in a Heritage Impact Statement:

- 1) **For development that would affect a heritage item:**

- a) The heritage significance of the item as part of the environmental heritage of Penrith;
- b) The impact that the proposed development will have on the heritage significance of the item and its setting, including any landscape or horticultural features;
- c) The measures proposed to conserve the heritage significance of the item and its setting;
- d) Whether any archaeological site or potential archaeological site would be adversely affected by the proposed development;
- e) The extent to which the carrying out of the proposed development would affect the form of any significant subdivision pattern; and
- f) The issues raised by any submission received in relation to the proposed development in response to the notification or advertising of the application.

2) For development that would be carried out in a heritage conservation area:

- a) The heritage significance of the heritage conservation area and the contribution which any building, work, relic, tree or place affected by the proposed development makes to this heritage significance;
- b) The impact that the proposed development would have on the heritage significance of the heritage conservation area;
- c) The compatibility of any proposed development with nearby original buildings and the character of the heritage conservation area, taking into account the size, form, scale, orientation, setbacks, materials and detailing of the proposed development;
- d) The measures proposed to conserve the significance to the heritage conservation area and its setting;
- e) Whether any landscape or horticultural features would be affected by the proposed development;
- f) Whether any archaeological site or potential archaeological site would be adversely affected by the proposed development;
- g) The extent to which carrying out of the proposal development in accordance with the consent would affect any historic subdivision pattern; and
- h) The issues raised by any submission received in relation to the proposed development in response to the notification or advertising of the application.

3) For development that would affect a place of potential heritage significance:

- a) The heritage significance of the place as part of the environmental heritage of Penrith;
- b) The impact that the proposed development will have on the heritage significance of the place and its setting, including any landscape or horticultural features;
- c) The measures proposed to conserve the heritage significance of the place and its setting;

- d) Whether any archaeological site or potential archaeological site would be adversely affected by the proposed development; and
- e) The extent to which carrying out of the proposal development in accordance with the consent would affect any historic subdivision pattern.

4) For development within the vicinity of a heritage item:

- a) A Heritage Impact Statement shall be lodged with a development application for buildings or works in the vicinity of a heritage item. This requirement extends to development that:
 - i) May have an impact on the setting of a heritage item, for example, by affecting a significant view to or from the item or by overshadowing; or
 - ii) May undermine or otherwise cause physical damage to a heritage item; or
 - iii) Will otherwise have any adverse impact on the heritage significance of a heritage item or of any heritage conservation area within which it is situated.
- b) As a minimum, the following issues must be addressed in the Heritage Impact Statement:
 - i) The impact of the proposed development on the heritage significance, visual curtilage and setting of the heritage item;
 - ii) Details of the size, shape and scale of, setbacks for, and the materials to be used in, any proposed buildings or works; and
 - iii) Details of any modification that would reduce the impact of the proposed development on the heritage significance of the heritage item.

4.14.2. Heritage Conservation Management Plan

A Heritage Conservation Management Plan may be required where a proposal could affect the significance of a heritage item, heritage conservation area or place of potential heritage significance. A Conservation Management Plan guides the future development and management of a heritage item, place or area in a way that protects its heritage significance. It not only identifies a preferred use for the item, place or area but also how any proposed changes will be implemented so that the maximum heritage significance is retained. As such, it provides a framework for investigating, assessing and managing the heritage significance of heritage items, places or areas.

The issues to be addressed in the Conservation Management Plan will vary depending on the heritage item and the proposed development. Conservation Management Plans must be prepared by a qualified heritage consultant in accordance with the guidelines of the NSW Heritage Office. The following is provided as a guide only on the information to be included in a Conservation Management Plan:

- a) An investigation of the heritage item's historical and geographical context, its history, fabric, research potential, and importance to the community;
- b) A statement of significance, of the nature, extent and degree of significance of the heritage item based on the documentary and physical evidence;

- c) A conservation policy, arising out of the statement of heritage significance, to guide current and future owners of the item on the development potential of the item and its ongoing maintenance. Constraints and opportunities should be identified;
- d) Examination of current proposals for reuse or development, and how they can best be achieved in accordance with the conservation policy. Where proposals may have an adverse impact on the heritage significance of the item, the need for such work must be justified. Where development proposals have not been finalised, several likely options are to be discussed;
- e) Recommendations for how the heritage item can best be managed bearing in mind those responsible and interested in its ongoing conservation. It is to include proposals to review the Conservation Management Plan and the item's maintenance.

4.14.3. Archival Recording Standards

Archival recording is required where demolition or partial demolition of a heritage item, a place within a heritage conservation area, or a potential place of heritage significance is proposed. The archival recording should be undertaken by a heritage consultant experienced in the preparation of an archival recording.

The following is a simple checklist of items that must be included in an archival recording. Additional information may be submitted if it adds to the understanding of the place.

- 1) Title page with subject, author, client, date and copyright;
- 2) Statement of why the record was made;
- 3) Outline history of the item and associated sites, structures and people;
- 4) Statement of heritage significance of the items using "Assessing Heritage Significance" by the NSW Heritage Office (2002);
- 5) Inventory of archival documents related to the item (e.g. company records, original drawings), when available;
- 6) Location plan showing the relationship to surrounding geographical features, structures, roads, vegetation etc. including a north point;
- 7) Base plans - Drafted or hand-drawn base plans shall be prepared and include:
 - a) Cross-references to photographs;
 - b) Names of the relevant features, structures and spaces; and
 - c) A north point.
- 8) Black and white photographic record - One set of 35mm black and white negatives labelled and cross-referenced to base plans and accompanied by informative catalogues are required. Two copies of proof sheets and select medium format prints showing important details shall be provided. Images shall include:
 - a) Views to and from the site (possibly from four compass points);
 - b) Views showing relationships to other relevant structures and landscape features;

- c) All external elevations;
- d) Views of all external and internal spaces (e.g. courtyards, rooms, roof spaces etc.); and
- e) External and internal details (e.g. joinery, construction joints, decorative features, paving types, etc.).

All photographic images shall be mounted and labelled.

- 9) Colour slides - Two copies mounted in archival stable slide pockets, clearly labelled and cross-referenced to base plans. Images shall include:

- a) Views to and from the site and/or the heritage item; and
- b) Views and details of external and internal colour schemes as appropriate.

Selected colour prints may be required. They should be mounted and labelled.

- 10) Measured Drawings - Appropriately scaled drawings printed on archival stable paper shall be provided. For a built item, this may include:

- a) Site plan (1:500 or 1:200);
- b) Floor plan/s (1:100 or 1:50);
- c) Elevations and sections (1:100 or 1:50);
- d) Roof plan/s (1:100 or 1:50);
- e) Ceiling and joinery details (1:20 or 1:10); and
- f) Machinery and services details (e.g. drainage lines).

- 11) Presentation - The archival recording shall be presented to Council as a single bound document preferably in A4 format. Large maps shall be folded and inserted as map pockets attached to the document. Similarly, all photographic images shall be fixed to the document and labelled. No unbound documents or loose supporting materials such as maps, plans, slides, negatives or prints are acceptable.

Two complete copies of the archival recording are required. However, one copy may not include a set of photographic negatives and colour slides. An additional copy of the whole recording must be submitted on electronic media in addition to the two required hard copies.

4.14.4. Archaeological Assessment Report

Archaeological Assessment Reports should contain sufficient data to stand alone; support documents should be unnecessary. They should demonstrate the process and results, providing information in a format that is useful as reference material. Archaeology is a specialised field and many activities, including excavation, must be undertaken or supervised by a trained archaeologist.

The content of an Archaeological Assessment Report will depend on the site and the purpose of the study. The NSW Heritage Branch of the Department of Planning is

responsible for developing best practice standards, policies and guidelines for the treatment and conservation of historical archaeological remains that are known or anticipated to exist in NSW. Advice should be sought from the Heritage Branch regarding specific requirements for archaeological assessments.

The following checklist provides a guide to likely minimum information requirements:

- a) Site or study area marked on a map;
- b) Relevant statutory controls/zonings;
- c) Author identification;
- d) Background to the assessment, including reference to previous reports;
- e) Outline of methodology employed;
- f) Sources consulted;
- g) An historical outline/summary;
- h) Analysis of physical evidence (possibly illustrated);
- i) Synthesis (possibly in graphic overlay form);
- j) Likelihood of archaeological remains occurring (known, potential, no archaeological features), may be presented graphically;
- k) Identification of research themes and questions (and how these were derived);
- l) Assessment of significance (statement of significance and/or graded zones);
- m) Identification of issues;
- n) Policy statement;
- o) Recommendations;
- p) Acknowledgments;
- q) Bibliography.

4.14.5. Aboriginal Cultural Heritage Archaeological Survey Report

An Aboriginal Cultural Heritage Archaeological Survey is required for development proposals on land identified as potentially archaeologically sensitive in the Culture and Heritage Section of this DCP. The Department of Environment, Climate Change and Water (DECCW) should be contacted for advice on survey needs and requirements. The following information is taken from the NSW National Parks and Wildlife Service “Aboriginal Cultural Heritage – Standards and Guidelines Kit” to provide an indication of the archaeological survey reporting requirements.

An Archaeological Survey Report must provide a full description of the development and its potential impact on the landscape and heritage resource. This should be a summary of both the impact history of the study area (previous land uses, previous impact assessments and

their results), and the potential impact of the proposed development on cultural heritage. It should include consideration of the impact of the development both during and after construction/implementation (i.e. many sites survive the construction of a development, only to be slowly degraded and disturbed by changes in land use over the longer term). The following information is required, as appropriate, to the specific type of development:

- a) The type of development proposed and how the proposed development is to be implemented;
- b) Flexibility of project design, timing and staging of the proposal; and
- c) Identification of direct and indirect impacts (both short and long term).
- d) The following is an indication of the requirements for a report:
- e) Introduction (including description of study area and proposed activity/development and a description of the impact);
- f) Experience/Qualifications;
- g) Aboriginal Values;
- h) Community Consultation (significance);
- i) Methodology (including details of field work);
- j) Photographs;
- k) Results (including discussion of the study area);
- l) Recommendations;
- m) References (other reports); and
- n) Maps (including maps of study area), glossary, appendices, plates, figures, etc.

4.15. Contamination

Advice on the reporting requirements for contaminated sites should be sought from the relevant state environment agency. The following information is taken from “Guidelines for Consultants Reporting on Contaminated Sites (1997)”. Applicants should refer to this document for full information on reporting requirements.

4.15.1. Contamination Investigation Report / Preliminary Contamination Investigation (Stage 1)

The Preliminary Site Investigation Report should:

- a) Identify all past and present potentially contaminating activities;
- b) Identify potential contamination types;
- c) Discuss the site condition;

- d) Provide a preliminary assessment of site contamination; and
- e) Assess the need for further investigations.

An appraisal of the site history is fundamental to the preliminary assessment and may be used to assess potential site contamination. It is important to review and assess all relevant information about the site, including information obtained during a site inspection.

Where a complete site history clearly demonstrates that site activities have been non-contaminating, there may be no need for further investigation or site sampling.

However, where contaminating activities are suspected or known to have occurred, or if the site history is incomplete, it may be necessary to undertake a preliminary sampling and analysis program to assess the need for a detailed site investigation

4.15.2. Detailed Contamination Site Investigation (Stage 2)

The Detailed Site Investigation Report should give comprehensive information on:

- a) Issues raised in the preliminary investigation;
- b) The type, extent and level of contamination;
- c) and assess:
- d) Contaminant dispersal in air, surface water, groundwater, soil and dust;
- e) The potential effects of contaminants on public health, the environment and building structures;
- f) Where applicable, off-site impacts on soil, sediment and biota; and
- g) The adequacy and completeness of all information available to be used in making decisions on remediation.

If the results of the detailed site investigation indicate that the site poses unacceptable risks to human health or the environment – on-site or off-site, and under either the present or the proposed land use – then a remedial action plan needs to be prepared and implemented, and development consent obtained for these works.

4.15.3. Site Remedial Action Plan (Stage 3)

The Remedial Action Plan should:

- a) Set remediation goals that ensure the remediated site will be suitable for the proposed use and will pose no unacceptable risk to human health or to the environment;
- b) Document in detail all procedures and plans to be implemented to reduce risks to acceptable levels for the proposed site use;
- c) Establish the environmental safeguards required to complete the remediation in an environmentally acceptable manner; and

- d) Identify and include proof of the necessary approvals and licences required by regulatory authorities.

Once remedial work is complete, a report should be prepared detailing the site work conducted and regulatory decisions made.

4.15.4. Validation and Site Monitoring Reports

Reporting requirements are of two types: validation and, where appropriate, ongoing site monitoring.

Validation reporting

Where remedial action has been carried out, the site must be 'validated' to ensure that the objectives stated in the Remedial Action Plan have been achieved. A report detailing the results of the site validation is required.

The extent of validation required will depend on:

- a) The degree of contamination originally present;
- b) The type of remediation processes that have been carried out; and
- c) The proposed land use.

Validation must confirm statistically that the remediated site complies with the clean up criteria set for the site. For guidance, see the NSW EPA's "Contaminated Sites Sampling Design Guidelines". Where applicable, the US EPA's "Methods for Evaluating the Attainment of Cleanup Standards" (1989) can also be used.

The Validation Report must assess the results of the post-remediation testing against the clean-up criteria stated in the Remedial Action Plan. Where targets have not been achieved, reasons must be stated and additional site work proposed to achieve the original Remedial Action Plan objectives.

The Validation Report should also include information confirming that all DECCW and other regulatory authorities' conditions and approvals have been met. In particular, documentary evidence is needed to confirm that any disposal of soil off-site is done in accordance with the Remedial Action Plan.

Ongoing site monitoring reporting

Where full clean-up is not feasible, or on-site containment of contamination is proposed, the need for an ongoing monitoring program should be assessed. If a monitoring program is needed, it should detail the proposed monitoring strategy, parameters to be monitored, monitoring locations, frequency of monitoring, and reporting requirements.

4.15.5. Site Audit (Contamination)

In determining applications for development, Council may require an independent review (Site Audit) of any or all stages of the site investigation, remediation or validation process, conducted in accordance with the *Contaminated Land Management Act* ('CLM Act').

A Site Audit will lead to the provision of a Site Audit Statement, stating for what use the land is suitable, including any conditions that should be adhered to for that land use (e.g. to maintain capping). Only site auditors accredited by the DECCW under the CLM Act can issue site audit statements. A Site Audit Statement must be prepared in accordance with DECCW Guidelines for the NSW Site Auditor Scheme and must be in a prescribed form.

4.15.6. Chemical Use and Storage Report

A chemical use and storage report may be required if the development involves storage of chemicals on the site.

A chemical use and storage report will not be required when:

- a) The use of chemicals is for routine cleaning, and the chemicals to be used are of household or hospital grade;
- b) The total quantity of chemicals to be routinely used or stored on the site does not exceed 100 litres;
- c) The chemicals to be used or stored are not of sufficient acidity, alkalinity or strength to cause significant harm on skin contact, or to the environment if a spill were to occur;
- d) The application outlines the methods proposed to be used to minimise the potential for spills.

A chemical use and storage report will be required where chemicals are proposed to be stored on site or habitually used as part of a development which present a significant hazard to human health or the environment, and where those chemicals are required to be stored in quantities of greater than 100 litres.

A chemical storage and use report must include:

- 1) Detailed description of the use and all methods/procedures associated with the use of each chemical;
- 2) A floor plan of the subject premises depicting the dimensions of the building and indicating the internal layout of all equipment, storage and display areas;
- 3) A comprehensive list of all chemicals/goods and quantities proposed to be utilised and stored;
- 4) A spill response/management plan;
- 5) A description of the method of storage of chemicals/goods on the premises and the type of containment or packaging used including bunding or secondary containment precautions;
- 6) A description of the method of transportation of chemicals/goods to the premises including the size and nature of vehicles, proposed routes and frequency of delivery;
- 7) Details of the number of vehicles likely to be involved and the location of vehicle storage/standing areas;
- 8) Details of on-site water quality control; and

- 9) Details of waste treatment and transportation.

4.16. Noise Impact Statement

Where a Noise Impact Statement, prepared by a suitably qualified acoustic consultant, is required, it should include:

- 1) A description of the proposed development including plans and elevations. For rural development, this includes plans and elevations of any enclosures/external structures and descriptions of building construction and means of ventilation;
- 2) Details of local topography, existing and proposed buildings and exposed or shielded situations which may affect the results and any allowances made in this regard;
- 3) Relevant legislation, standards, guidelines and policies that have been applied;
- 4) Background noise measurements. For rural development, this includes details of existing daytime and night-time background levels and the means by which these levels were obtained;
- 5) Details of instruments and methodology used for noise measurements;
- 6) Noises level data for all major sources, in octave band levels where appropriate;
- 7) A site map showing noise sources, measurements, locations and noise receivers;
- 8) Noise criteria applied to the proposal;
- 9) Noise predictions for the proposed activity;
- 10) Consideration of any other significant or relevant acoustic information concerning the project;
- 11) A comparison of noise predictions against noise criteria. Where appropriate, this should include a comparison of the predicted noise levels with the relevant design criteria at each potentially sensitive receiver location considered;
- 12) A description of proposed mitigation measures, the resultant noise reduction likely, and an assessment of the feasibility and reasonableness of these measures;
- 13) A statement of opinion confirming how compliance with acoustic criteria requirements can be practically achieved; and
- 14) In situations where vibration is considered to be an issue, a suitable assessment of any vibration impacts.

4.17. Requirements relating to land stability, excavation and filling

Any development application that proposes excavation and/or filling, and therefore changes to the levels of a site, is required to clearly address the following:

- 1) Where the excavation and/or filling will occur on the site;
- 2) Justification for the need to change the land levels in terms of the overall development; and
- 3) Any impacts from the changed land levels as a consequence of excavation and/or filling including potential impacts on groundwater levels, flow or quality.

4.17.1. Landfill Validation Report

A Landfill Validation Report is required where importation of fill is proposed. The report must be prepared by an appropriately qualified person and must include:

- 1) The property description of the source of the fill (hereafter called the subject property);
- 2) The site history of the subject property, including present and past land uses;
- 3) Results of any previous site investigations for contaminants on the subject property;
- 4) Present and past zonings of the subject property (e.g. industrial, agricultural or defence purposes);
- 5) Description of the present and past land uses of the land immediately adjacent to the subject property, including any information relating to potential or known contamination;
- 6) Proposed location and purpose for introducing fill onto a property;
- 7) Details of the transporters or contractors responsible for transporting the fill material from its source to its final and approved destination;
- 8) Level of finished fill and extent of proposed fill in relation to adjoining property;
- 9) Methods of controlling erosion and siltation;
- 10) Effect of fill on adjoining property, particularly in relation to water flow;
- 11) Compaction method;
- 12) Advice confirming that the proposed fill is suitable for the proposed use; and
- 13) Advice confirming that land-filling activities comply with relevant criteria and pose no unacceptable risk to human health or the environment.

Council may require a further detailed investigation to occur if contamination is, or may be, present in the fill material to prove that the fill material is suitable for the proposed use.

4.17.2. Geotechnical Report

A Geotechnical Report must be prepared by a suitably qualified consultant and is required where the existing slope on a site is greater than 15% (or the land is likely to be subject to any land stability issues); where on site effluent disposal is proposed (this may be addressed as part of the onsite effluent disposal supporting information); or where excavations are proposed that are likely to impact groundwater, including basement levels. A Geotechnical

Report may be required for other applications due to the characteristics of the particular site or the scale or nature of the development.

The requirements for Geotechnical Reports vary greatly in scope and extent depending on the scale and type of development and the specific characteristics of the site. As a guide, all geotechnical reports will include:

- 1) A description of the site and its existing geotechnical hazards/risks;
- 2) Details of the site substrata [or sub-surface conditions], relevant geological information, advice on groundwater seepage;
- 3) A risk assessment in accordance with the Australian Geomechanics Society [AGS] guidelines; and
- 4) Recommendations on the treatment of any identified hazards and design parameters and data for the construction of the development.

4.18. Water Management Plan

Any application for a new industrial or rural land use that requires the consent of Council and will increase the water needs of a particular area must submit a Water Management Plan which:

- 1) Estimates future water needs of the proposed development;
- 2) Indicates the proposed water source to meet those needs; and
- 3) Outlines water conservation measures to be implemented.

4.19. Dust Suppression Plan

A Dust Suppression Plan is an essential part of controlling dust problems from agriculture, construction and extraction activities. A Dust Suppression Plan should identify potential for dust generation and the control measures to be implemented to minimise dust.

Where a Dust Suppression Plan is required for a proposed development, the plan should include:

- 1) A site description of the existing site and the proposed development;
- 2) A site map showing:
 - a) North point and scale;
 - b) Property boundary, contours, existing landforms, prevailing wind directions and adjacent features;
 - c) All areas and vegetation to be retained or left undisturbed;
 - d) All areas and vegetation that will be disturbed;
 - e) Location of the proposed development/activity;

- f) Location of physical barriers, such as fencing and wind breaks;
 - g) Location of stockpiles and storage areas;
 - h) Traffic routes and stabilised site access/exit points; and
 - i) Any areas with potential for dust generation.
- 3) Details of the dust control measures, including:
- a) Timing of works;
 - b) Areas to remain vegetated, or be revegetated;
 - c) Wind breaks;
 - d) Coverings for stockpiles and transportation;
 - e) Frequency and location of water sprays;
 - f) Identifying wind speed limits for operations; and
 - g) Any other site or operational specific control measures.

4.20. Odour Management Plan

An Odour Management Plan identifies the range of measures to be used to minimise odour impacts. The factors contributing to odour generation are complex and vary according to the land use or industry producing the odour. Reference to industry specific guidelines and best practice is required. An Odour Management Plan should identify the potential for odour generation and impacts, and management protocols to minimise these.

Where an Odour Management Plan is required, the plan should include:

- 1) A description of the proposed development including plans and elevations. For rural development, this includes plans and elevations of any enclosures/external structures and descriptions of building construction and means of ventilation;
- 2) Details of the site characteristics (including topography, prevailing winds, adjacent land uses, location and proximity of neighbours);
- 3) Details of the odour that will be generated by the development, including offensiveness, intensity and frequency of odour emissions;
- 4) A site map showing odour sources;
- 5) A description of proposed mitigation measures, the resultant odour reduction likely, and an assessment of the feasibility and reasonableness of these measures; and
- 6) Details of relevant legislation, standards, guidelines and policies that have been applied.

4.21. Social Impact Assessment

A Social Impact Assessment will be required for all major development types which are likely to have a significant social impact on the existing community. For example, large subdivisions (residential or rural residential) or large housing developments.

A Social Impact Assessment must:

- 1) Identify the Community - Identify the existing community and the proposed future community. This will include a demographic assessment of existing and proposed communities;
- 2) Identify the Needs - Identify the needs of the community based on the assumptions made as part of 1) above. This includes health, recreation, education, employment, etc.;
- 3) Identify the Issues - Identify the issues that will impact on those communities and needs, particularly the ability of existing facilities to meet the needs of existing and proposed communities; and
- 4) Develop Recommendations and Mitigating Measures - Assess how the proposal will avoid or mitigate social impacts, including reference to any additional infrastructure proposed to be provided.

4.22. Economic Impact/Needs Assessment

An Economic Impact Assessment will be required for all development which may have an economic impact on similar uses in the surrounding area, including major retail development (traditional or bulky goods) and child care centres over 40 places.

An economic impact assessment must:

- 1) Identify the likely spheres of impact (traditional retail, bulky goods retail, child care centres, etc.);
- 2) Identify the likely extent of impact, based on proximity, similarity of service, etc.; and
- 3) Demonstrate that there is sufficient market for the proposed use or that the proposed use meets an unmet need in the area.

4.23. Infrastructure Delivery Plan

The preparation and submission of an Infrastructure Delivery Plan (IDP) is required for all new release areas. The IDP is required to identify all infrastructure, including civil works, utility services, community, social, cultural and recreational facilities, to service a new release area and establish a framework for its timely provision.

The IDP should include associated costing (including ongoing operating and maintenance costs) and estimated delivery timeframes for all infrastructure, with a commitment to providing services up front where they are required early in the life of new estates. Where possible, the IDP should demonstrate efficient use and/or extension of existing infrastructure. The IDP should explore opportunities for the delivery of innovative and

sustainable infrastructure, services, facilities and networks with adherence to the principles of social justice, equity and accessibility.

The IDP shall provide an accurate costing for all infrastructure to be provided and a delivery program with key pre-planning design and construction phases identified. The IDP shall incorporate relevant apportionment of costs where it is agreed those will be shared with other providers. The IDP will form the basis for the development of Section 94 Contributions Plans and/or Development Agreements, as well as agreements required to be entered into with the State Government and its agencies for the delivery of regional based facilities.

Specifically, the following infrastructure and services are to be identified and provided for in all new release areas:

- 1) A safe, efficient, and effective road system and cycleway/pedestrian network which links with existing and new infrastructure, public transport services, shopping centres, community facilities and recreation areas;
- 2) Public transport networks and systems which deliver effective access to major destinations and other transport mode connections. A Transport Management and Accessibility Plan (TMAP) (see 4.8.3 in this Appendix) will be required to identify public transport systems improvements generated by new release areas;
- 3) Underground routing of all utility services including gas, water, sewer, electricity and telecommunications (including broad-banding capability);
- 4) Planned development of infrastructure that meets local energy, water and sewer authority standards;
- 5) Modern telecommunication infrastructure with the capacity to support multiple telecommunications services, such as high-speed internet (including broad band), voice and data systems, and community intranets. Shared service corridors should have capacity to accommodate technology advancements and any increases in demand; and
- 6) Community, social, cultural, educational and recreational facilities to service the new community.

Further, the IDP must address the following matters:

- 1) Identify the estimated costs of community, cultural and recreational facilities and services and timeframes for delivery (e.g. relationship to housing production);
- 2) Develop strategies for the upfront provision of a baseline level of services and facilities to service the initial population. This includes a framework for the timely provision of social infrastructure including small-scale retail/convenience store, access to transport/bus services and open space/recreation areas, facilities and meeting places to support a healthy community (e.g. playgroups, parent groups, youth activities, seniors group, children services, medical, mail box, telephone, etc) to service the initial population;
- 3) Provide accurate costings for all infrastructure and identify a delivery program with key pre-planning design and construction phases. It shall also incorporate relevant apportionment of costs where it is agreed those will be shared with other providers;
- 4) Identify and cost all necessary maintenance requirements for infrastructure assets proposed to be transferred to Council for ownership and ongoing care including future replacement costs where necessary;

- 5) Identify the interim management and maintenance arrangements for infrastructure assets which will be retained in the short term by the developer pending transfer to Council; and
- 6) Develop Plans of Management consistent with the requirements of the Local Government Act for all open space areas proposed to be transferred to Council.

4.24 3D Modelling for Development within St Marys Town Centre

Council officers may request for any development in the St Marys Town Centre with an estimated cost greater than \$1 million, or development that exceeds two-storeys in height, or development that is in a prominent location, to be accompanied by a 3D file of the proposed development in the context of the St Marys Town Centre 3D Model.

The 3D Model will be used on the basis of a two-way sharing of data, with Council providing to the prospective developer, a 3D file extract of the relevant area from the Model in the early stages of design, in order to assist in design development.

Architects and developers will be informed at the initial enquiry stage of the 3D Model requirement and encouraged to contact Council's GIS Unit to arrange for the provision of an extract from the St Marys 3D Model, or to discuss technical issues.

The process will be the subject of a licence agreement between the developer and Council and will be subject to payment of the prescribed fee, both on the provision of the 3D Model extract and at the development application stage. The agreement will require that the developer import the digital 3D plans of the proposed development into the supplied model extract for submission with the development application. The computer file extract, with the proposed development included, would be imported back into the 3D Model to facilitate assessment of the proposal by Council's Development Services Unit, other Council officers, other interested persons and ultimately Council itself.

A fee for the use of this service will be negotiated.

Table of Contents

F4 TECHNICAL INFORMATION	2
1. POLICY AND GUIDELINE DOCUMENTS OF COUNCIL	3
2. TECHNICAL INFORMATION	3
2.1 SOCIAL PRINCIPLES	3
2.2 ECONOMIC PRINCIPLES	8
2.3 ENVIRONMENTAL PRINCIPLES	9
2.4 BUILT FORM AND INFRASTRUCTURE PRINCIPLES	11
2.5 SPECIFIC LAND USE PRINCIPLES	13
2.6 SITE PLANNING	13
2.6.1 REGIONAL ANALYSIS	14
2.6.2 LOCAL ANALYSIS	15
2.6.3 SITE ANALYSIS	15
2.7 KEY AREAS WITH SCENIC AND LANDSCAPE VALUES	16
2.7.1. GATEWAYS	16
2.8 VEGETATION	17
2.9 LANDSCAPE TECHNICAL SPECIFICATIONS	18
2.9.1 TREE/VEGETATION PROTECTION DURING CONSTRUCTION	18
2.9.2 LANDSCAPE QUALITY ASSURANCE STANDARDS	19
2.9.3 ABOVE GROUND ON SITE STORMWATER DETENTION AND LANDSCAPING	22
2.10 GREEN ROOFS AND ROOF GARDENS	23
2.11. CONTAMINATED LANDS	24
2.11.1. LIST OF POTENTIALLY CONTAMINATING ACTIVITIES	24
2.11.2. LIST OF INDUSTRIES AND CHEMICALS USED	25
2.11.3 OPTIONS AVAILABLE IN THE DEVELOPMENT APPLICATION PROCESS	31
2.11.4 OPTIONS AVAILABLE IN THE REZONING PROCESS	32
2.12 WASTE GENERATION RATES	33
3. OTHER GUIDELINES, DOCUMENTS AND TECHNICAL INFORMATION	35
3.1. NSW STATE LEGISLATION	35
3.2. COMMONWEALTH LEGISLATION	35
3.3. STATE ENVIRONMENTAL PLANNING POLICIES (SEPP)	35
3.4. RESIDENTIAL FLAT DESIGN CODE 2002	35
3.5 CERTIFICATION SYSTEMS	36
3.5.1 NATIONAL AUSTRALIAN BUILT ENVIRONMENT RATING SYSTEM	36
3.5.2 GREEN STAR	36
3.5.3 BUILDING SUSTAINABILITY INDEX (BASIX)	36
3.6 NATIVE VEGETATION OF WESTERN SYDNEY	37
3.7 THREATENED SPECIES ASSESSMENT GUIDELINES – THE ASSESSMENT OF SIGNIFICANCE (2007)	37
3.8 SIGNIFICANT IMPACT GUIDELINES 1.1 - MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE (2009)	37
3.9 PLANNING FOR BUSHFIRE PROTECTION	37
3.10 WATER EXTRACTION LICENSES AND APPROVALS	37

F4 Technical Information

A. Background

This Appendix contains more detailed information to support the controls in this DCP. It also refers to policies of Council.

It is recommended that applicants contact Council's Development Services Department to check for updates to this information prior to commencing their development application.

B. General Objectives

- a) To provide technical information to support the controls in other sections of the DCP;
- b) To refer to existing policies and guidelines of Council; and
- c) To provide information about the existing policies and guidelines of other agencies and organisations.

C. Other Information

This Appendix refers to the technical information and policies of Council. In many cases, applicants will also be required to comply with the policies and technical standards of State and Commonwealth agencies and utility agencies. Applicants should directly contact these agencies to obtain this information.

1. Policy and Guideline Documents of Council

The following policy and guideline documents provide background and technical information to support Penrith DCP 2014 and are separately available from Council's website at www.penrithcity.nsw.gov.au:

- Penrith City Council Landscape Character Strategy (2006)
- Penrith City Council Sustainability Blueprint for Urban Release Areas (June 2005)
- Penrith City Council Biodiversity Strategy (May 2004)
- Penrith City Council - Heritage Study (May 2006) prepared by Paul Davies Pty Ltd
- Penrith Integrated Transport and Land Use Strategy 2008
- Penrith City Council On-site Sewage Management and Greywater Reuse Policy (April 2014).
- City Strategy

2 Technical Information

2.1 Social Principles

A. Background

A socially sustainable society is one that is just, equitable, inclusive and democratic, and provides quality of life for current and future generations.

As the population of Penrith grows, increasing residential and working populations will put pressure on open space areas and natural resources as well as on the existing built form, services and infrastructure. Increasing the population in an area will require an increase in amenity to ensure that places remain liveable for the whole community.

Understanding the social context and needs of the local community in terms of lifestyle, affordability, access to social facilities and employment opportunities influences the choice and location of all land uses. Quality design outcomes and successful project delivery requires an integration of the proposed development's aims, Council's goals for a particular area and processes which involve and support the local community.

B. Objectives

The objective of this section is for development proposals to consider and, where relevant, address the following:

- a) Conducting a social impact assessment for major developments;

- b) Ensuring a development addresses Council's social goals as set out in the Principles in Chapter B of this DCP;
- c) Ensuring a development addresses the proximity and accessibility of community facilities in the area; and
- d) Promoting housing choice in the form of a mix of dwelling types, affordability and accessibility.

C. Social Impact Assessment

The key way to determine whether a proposed development will impact on social sustainability is to conduct a Social Impact Assessment (SIA). A SIA will not be required for all developments. However, an applicant (in collaboration with Council) should assess whether there will be any social impacts, and if so, lodge a SIA with the application. The types of development that may require a SIA include residential developments, new industry, commercial development, retail development, entertainment and place of worship.

A social impact assessment can be defined as,

"The processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment." (International Principles of SIA).

The aim of a SIA is to predict, anticipate and understand what may happen as a result of a development. In doing this, it aims to find out how to maximise the desired outcomes and minimise the adverse outcomes to the community.

A SIA should include an in depth assessment about actual and potential social impacts. Both positive and negative impacts need to be considered as well as the extent of the impact.

Council, the applicant and the community all have a role in the identification and assessment of social impacts that may result from a development. For the purposes of everyday planning, such as major changes in land use, social impact assessment requires an analysis of three key factors:

- Impact on the existing community;
- Impact on the community associated with the new development; and
- Impacts on the future community.

To do this, the following steps are generally taken:

- a) Identifying the Community** - Identifying the existing, future, and proposed communities;
- b) Identifying the Needs** - Identifying the needs that relate to the existing, future and proposed communities;
- c) Identifying the Issues** - Identifying the issues that will impact on those communities and needs; and

- d) Developing the Recommendations and Mitigating Measures** - Assessing how the proposal will avoid or mitigate social impacts. Once impacts have been identified, measures to address these impacts, called mitigating measures, and recommendations can be developed.

Further details of these steps are provided below.

1. Identifying the Community

Identifying the community involves the following steps:

- a) Identify the existing community (residents, businesses, schools, churches, surrounding land uses, age structure, household types, income etc.) by:
 - Looking at ABS Census of Population and Housing.
 - Looking at SEIFA (Social Economic Index of advantage/disadvantage and wellbeing), Community Profile; and Community Atlas and population forecast on Council's website;
 - Looking at regional plans.
 - Looking at Council's City Strategy which includes policy documents: Penrith Inclusion Plan; Planning for an Ageing Community Strategy 2010; Service for Men Study; Women's Services Advocacy Strategy; Youth Action Plan 2010.
- b) Identify the future community using population projections (see Population Forecast on Council's website).
- c) Identify the future community that your proposal would bring to the area (i.e. if you are proposing a major residential development then provide a snapshot of total number and breakdown of some key characteristics - age, household type, size, etc).

2. Identifying the Needs

Identifying the needs involves the following steps: (This will require some discussion with local service providers and the existing community).

- a) Identify the level of services and facilities that the existing community has available (e.g. type of service, availability of service, affordability of service).
- b) Identify the current gaps in current service and facility provision.
- c) Identify what the needs of the future community will be and what services will be required to meet this need.

3. Identifying the Issues

When considering the issues you need to be mindful of both positive and negative impacts, e.g. will the development bring more children into the area and therefore make better use of or put pressure on existing school infrastructure.

The key issues to be considered in a SIA are outlined in Table F4.1. The table is intended to guide you in developing your SIA. You need to address the areas that are relevant to your application. Remember to document who you consulted, what issues were raised, how

you will enhance positive and reduce negative impacts and whether there are any other issues you need to consider.

Table F4.1

Possible Social Impacts (positive and negative)	Questions to consider
Demographic and population change	<p>Will the proposal create a significant change to the existing population in terms of overall numbers and makeup (i.e. will it double the size, will it create a significant increase in older people, etc)?</p> <p>What is the current makeup of the existing community (e.g. age groups, family type, household income, employment status etc)?</p> <p>What is the total expected increase/decrease? What percentage is this of the total population of the suburb, area, LGA?</p>
Accommodation and housing	<p>Will the proposal change the current provision of housing? Will it create shortages or too much? Will it impact on affordability? Will it change the household size and characteristics of the community for the positive or negative? Will the proposal respond to current demands in housing type, etc.? You may need to undertake an assessment on housing affordability.</p> <p>Consider quantity, type and density of housing.</p>
Mobility and access	<p>Will the proposal create a strain on existing transport services? Can the existing transport services be augmented to meet demand or will they need to be expanded? Can people currently get to places they need to go to (e.g. what is the current level of mobility, what is needed, etc)?</p>
Community facilities and social infrastructure requirements	<p>What facilities and infrastructure is currently available? How will the proposal impact on existing community access to these facilities? Can existing facilities meet the anticipated increase in demand? Will the proposal result in the need to upgrade existing facilities or will new facilities be required? What new facilities may be required?</p>
Needs of service age groups	<p>What service age groups currently meet in the area? Will the proposal create impacts on existing social groups? Will the proposal create the need for new service age groups? For example, if the development is for student accommodation or seniors housing, will the community be able to service this group? Will this new group create impacts on the existing community?</p>
Heritage and cultural values and beliefs	<p>Will the proposed development impact on Indigenous and European heritage? Is there an item of local significance to be considered on the site? How will the existing or incoming communities' cultural needs be met?</p>
Community identity	<p>Will the proposal change the socio economic makeup of the</p>

Possible Social Impacts (positive and negative)	Questions to consider
and cohesion	community? Will the proposal change the age characteristics of the community? Can the incoming community integrate with the existing community to ensure community cohesion or will it create issues? How will these issues be minimised?
Cohesion of the development and its surrounds	Is the proposal consistent with development that surrounds it? Is the proposal significantly larger in scale and type than existing development? Is the proposal going to result in a distinct change in the locality (e.g. from rural to urban)?
Health	Will the proposal create issues associated with health? There are a number of social indicators of health. Examples include opportunities for building community interaction, community capacity, wealth, activity, etc.
Leisure and recreation	Will the proposal create opportunities or constraints for leisure and recreation? Does the proposal meet the future community's needs in this area? Will the proposal create demands on existing recreation and leisure facilities that cannot be met? Will the proposal justify the ongoing operation of recreation and leisure facilities?
Risk perception in the community and crime and public safety	Have CPTED principles being considered? (Chapter C1 'Site Planning and Design Principles' contains information about CPTED). Will the proposal create a higher incidence of crime or create more opportunities for informal surveillance? Will the proposal create more opportunities for crime?
Social amenity	Will the proposal contribute or impact on the overall character of an area? For example, will changes impact on open land, trees, historic buildings and the inter-relationship between all elements in the environment? Will the proposal contribute to or impact on the overall social makeup of an area in terms of population, levels of service and facility provision, etc.?
Equity and universal design	An overarching principle of social inclusion is that of equity of access to resources, services and opportunities. This includes the principle of universal design which seeks to promote accessibility in both the public and private domains to all people. How has the principle of equitable access and universal design been incorporated into the proposal?
Employment	Will the proposal create employment opportunities and contribute to the surrounding community? Will the proposed employment be able to be met in the local community with local skills or will a whole new group of people be required? Will the proposal lead to issues of displacement? Use your demographic profile to discuss.
Local economic effects	Will the proposal boost or take away from the local economy? Will the proposal threaten the existing economic environment?

Possible Social Impacts (positive and negative)	Questions to consider
Property value	This can be incorporated into the principle above and it may be useful to use an economic consultant. However, you may be able to research impacts of similar proposals to yours and whether there were any impacts to property values.

4. Developing the Recommendations and Mitigating Measures

Against each issue, the impacts for existing residents within the community and impacts on future residents of the development need to be considered and strategies or mitigating measures, if appropriate, to address any impacts identified.

Recommendations will identify the means by which the negative impacts associated with the proposal may be minimised or avoided and the positive impacts enhanced.

Mitigating measures are those steps that could be taken to reduce or enhance the levels of impact identified (e.g. provision of a transport service, creation of community facilities, provision of a bus shelter, etc) to meet future community needs. These measures are usually required to be provided by the developer (e.g. if your proposal will increase demand on public transport, you may need to recommend augmenting the existing public transport provision or creating a new service that meets your development's needs).

The final recommendation of the SIA needs to support or not support the proposal. You need to outline reasons why.

2.2 Economic Principles

A. Background

Economic capacity is tied to the physical ability of a locality to support growth and change, including the provision of community infrastructure and services. It is important to balance the interests of the public domain and the community's goals with realistic commercial expectation, market demands, real estate and development profit.

Not every aspect of economic sustainability will be governed by this DCP. However, several key aspects of economic sustainability addressed in this DCP include, but are not limited to:

- a) The economic equity of access to natural resources;
- b) Economic cost of provision of transport, services and infrastructure;
- c) Economic impacts of specific land uses.

B. Objectives

The objective of this section is for development proposals to consider and, where relevant, address the following:

- a) Conducting an economic impact analysis for major developments;
- b) Ensuring a development addresses Council's economic goals as set out in the Principles in Chapter B of this DCP;
- c) Ensuring a development addresses the proximity and accessibility of employment and services in the area; and
- d) Promoting development that is economically sustainable.

C. Economic Assessment

The key way to determine whether a proposed development will impact on economic sustainability is to conduct an Economic Assessment. An economic assessment will not be required for all developments. However, an applicant (in collaboration with Council) should assess whether there will be any significant economic impacts from a proposal, and if so, lodge an economic assessment with the application. Many economic impacts are closely related to social impacts and this should be addressed.

1. Market demand

Is the proposal based on a thorough market appraisal to determine the need for the proposed land use, the required amount of floor space needed and whether the market has any particular design requirements? This needs to be assessed not just for the immediate future, but also for longer term projections. If there is uncertainty, then proposals need to include a level of adaptability to allow it to change as the market demand requires.

2. Employment

Will the proposal create employment and contribute to the surrounding community? Will the proposed employment be able to be met in the local community with local skills or will a whole new group of people be required, leading to issues of displacement, opportunities, etc.? Use your demographic profile to discuss.

3. Local economic effects

Will the proposal boost or take away from the local economy? Will it threaten the existing economic environment?

4. Property value

This can be incorporated into the principle above and it may be useful to use an economic consultant. However, you may be able to research impacts of similar proposals to yours and whether there were any impacts to property values.

2.3 Environmental Principles

A. Background

There are a number of environmental objectives and controls set out in this DCP. The broad aim in addressing these environmental issues is to address them in a holistic manner - to avoid fixing one problem by causing another. For this reason, environmental issues have been grouped as issues relating to:

- a) Vegetation Management ;
- b) Water Management;
- c) Land Management;
- d) Waste Management; and
- e) Landscape Design.

In addition, there are a number of 'human environment' issues that impact on the natural environment, including:

- a) Site Planning and Design Principles;
- b) Culture and Heritage;
- c) Public Domain;
- d) Advertising and Signage; and
- e) Transport, Access and Parking.

Therefore, environmental issues permeate all aspects of development and all of these chapters need to be addressed to understand the potential impact of any development proposal.

B. Objectives

The objective of this section is for development proposals to consider and, where relevant, address the following:

- a) Conducting a environmental assessment for major developments;
- b) Ensuring a development addresses Council's environmental goals as set out in the Principles in the DCP Principles Section of this DCP;
- c) Ensuring a development responds to the environmental constraints and opportunities as set out in the Site Planning and Design Principles Section of this DCP; and
- d) Ensuring that development is environmentally sustainable.

C. Environmental Assessment

The environmental principles that should be covered by the contextual analysis and addressed by the design/development (as set out in this DCP) include:

Air Quality and Climate

- a) Protecting air quality.

Vegetation Management and Landscape Design

- a) Protecting threatened species, populations or ecological communities

- b) Protecting wildlife/fauna and habitats
- c) Protecting native vegetation/bushland and biodiversity corridors
- d) Protecting significant trees and landscape
- e) Minimising weed species and infestation
- f) Minimising bushfire risk.

Water Management

- a) Protecting water catchments and surface water and ground water (quality and quantity)
- b) Protecting watercourses, wetlands, groundwater dependent water systems and riparian corridors
- c) Managing flood liable lands
- d) Managing stormwater and drainage patterns.

Land Management

- a) Protecting soils and soil quality/condition
- b) Responding to topography, landform and site stability
- c) Minimising earthworks, excavation and filling
- d) Minimising erosion and sedimentation
- e) Addressing contaminated soils
- f) Addressing salinity
- g) Addressing and avoiding landfill.

Waste Management

- a) Minimising and managing existing and potential waste generation during design and operation, demolition and construction
- b) Managing on-site sewage
- c) Addressing hazardous waste.

2.4 Built Form and Infrastructure Principles

A. Background

In addition to the principles of sustainability, there are a number of built form and infrastructure principles that are supported by more than just economic, social or environmental reasoning. These are sometimes referred to as principles of good 'urban design'.

B. Objectives

The objective of this section is for development proposals to consider and, where relevant, address the following:

- a) Conducting an urban design assessment for major developments;
- b) Ensuring a development addresses Council's built form and urban design goals as set out in the Principles in Section B – DCP Principles of this DCP; and
- c) Ensuring a development responds to the built form constraints and opportunities as set out in Section C1 of this DCP.

C. Urban Design Assessment

The built form and infrastructure principles that should be covered by the contextual analysis and addressed by the design/development (as set out in this DCP) include:

Site Planning and Design Principles

- a) Responding to climatic conditions and maximising passive solar design and energy conservation in the built form
- b) Responding to topography and minimising visual impact
- c) Responding to areas of scenic or visual importance
- d) Providing appropriate height, scale and massing
- e) Providing an articulated built form
- f) Designing for safety and security
- g) Providing accessibility.

Culture and Heritage

- a) Minimising impact on heritage items, conservation areas or landscapes
- b) Providing appropriate development in the vicinity of heritage items
- c) Minimising impact on archaeological sites.

Public Domain

- a) Providing open spaces and recreational opportunities
- b) Providing outdoor dining and trading areas
- c) Enhancing the streetscape
- d) Providing public art opportunities
- e) Providing pedestrian amenity.

Advertising and Signage

- a) Controlling signage and advertising to minimise visual impact and integrate with existing built form and landscape character.

Transport, Access and Parking

- a) Protecting the character of key transport corridors
- b) Integrating access and driveway design into site design
- c) Integrating vehicle parking into site and building design
- d) Integrating alternative transport means such as footpaths and cycleways.

Noise and Vibration

- a) Providing acoustic amenity.

Infrastructure and Services

- a) Providing utilities such as water, sewerage, gas, electricity, telephone
- b) Managing on-site sewage
- c) Controlling the design of infrastructure, engineering and construction works.

2.5 Specific Land Use Principles

In addition to the above controls that apply to all land uses, applicants are required to provide contextual analysis and respond in the design/development to issues described in the specific land use chapters including:

- a) Rural Land Uses
- b) Residential Land Uses
- c) Commercial and Retail Land Uses
- d) Industrial Land Uses
- e) Other Land Uses.

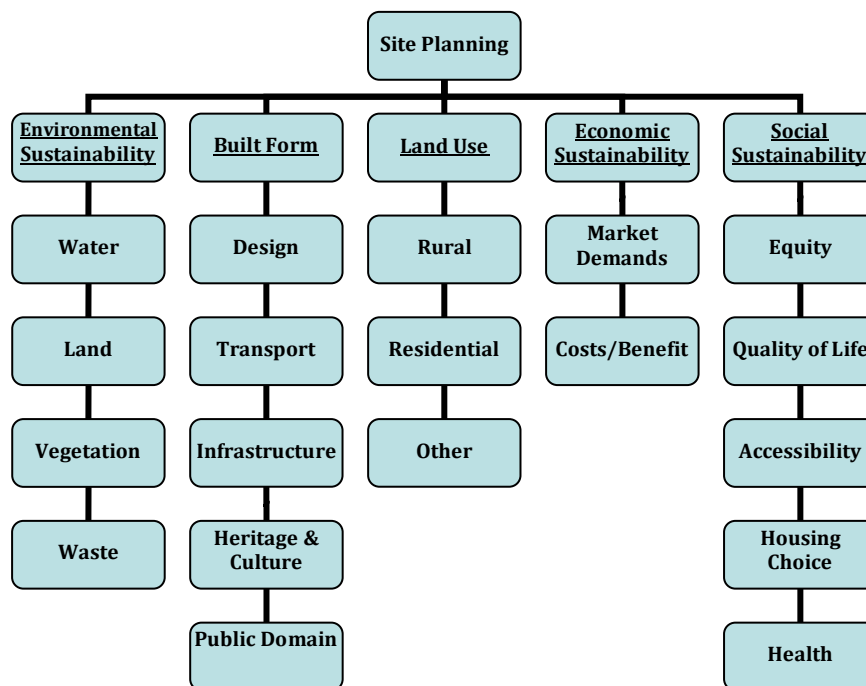
2.6 Site Planning

Planning of a site needs to analyse the opportunities and constraints of a site for a proposed development across a number of broad issues. Figure F4.1 below provides a general guide to the wide range of factors that influence the design, layout, construction and ongoing use and maintenance of a development site. These issues can be broadly categorised as follows.

- a) Social opportunities and constraints;

- b) Economic opportunities and constraints;
- c) Environmental opportunities and constraints; and
- d) Built form and infrastructure opportunities and constraints.

Figure F4.1



2.6.1 Regional Analysis

Regional analysis involves looking at the regional context, including but not limited to:

- a) Regional locational context and urban centres (e.g. nearest major centres);
- b) Regional topography (e.g. general terrain for region);
- c) Regional transport (e.g. major rail and road connections);
- d) Regional environmental systems (e.g. major watercourses and open space connections/facilities); and
- e) Regional infrastructure/services (e.g. major shopping, cultural, civic, educational facilities and services/utilities).

Regional contextual analysis can range from 10 to 100 kilometres from the site (depending on the scale of development, the proposed land uses and its impacts). Regional transport networks, cycle and pedestrian routes, existing land uses, ecological and infrastructure systems, open space networks and visual connections extend beyond the local boundaries and have significant influence on local decision making and appropriate land use outcomes.

Not all of the elements listed above will be relevant for every development or site. It is strongly recommended that you contact Council's Development Services Department to discuss the requirements for your proposal prior to lodgement of a development application.

2.6.2 Local Analysis

Local analysis involves looking at the local context around the site, including but not limited to:

- a) Local locational context (e.g. nearest neighbourhood and local centres);
- b) Local climate (e.g. prevailing winds);
- c) Local infrastructure/services (e.g. local shopping, education, employment, utilities and community facilities);
- d) Local topography (e.g. nearest mountains and valleys);
- e) Local transport (e.g. local rail, bus and pedestrian/bicycle paths);
- f) Local street hierarchy and layout;
- g) Local visual analysis (e.g. visibility of site from local area);
- h) Local environmental systems (e.g. local watercourses, drainage channels, and parks);
- i) Local built form outcomes (e.g. area character);
- j) Local subdivision pattern (e.g. block and road pattern);
- k) Local heritage items, conservation areas or streetscapes; and
- l) Adjacent land uses.

Local contextual analysis can range from 50 metres to 10 kilometres from the site (depending on the scale of development).

Not all of the elements listed above will be relevant for every development or site. It is strongly recommended that you contact Council's Development Services Department to discuss the requirements for your proposal prior to lodgement of a development application.

2.6.3 Site Analysis

Site analysis involves looking at the features of the site and the immediately surrounding area and, where possible, presenting the information in a diagram(s). That diagram should include the following minimum elements:

- a) The site's dimensions and areas;
- b) North point and the site's orientation (e.g. solar access);
- c) Topography (with 0.5 to 1 metre contours);
- d) Road and pedestrian access points;

- e) Services and infrastructure (e.g. electricity poles, stormwater drainage lines, natural drainage, kerb crossings and easements);
- f) Rights of way;
- g) Views to and from the site;
- h) Site overland flows and drainage patterns;
- i) Geotechnical characteristics of the site and suitability for development;
- j) Location of site in relation to shops, community facilities and transport;
- k) Heritage items on site or on adjoining properties;
- l) Form and character of adjacent and opposite buildings in the streetscape, including both sides of any street that the development fronts;
- m) Location and use of any existing buildings or built features on the site;
- n) Location and important characteristics of adjacent public, communal and private open spaces;
- o) Location of significant vegetation on the site;
- p) Location of any significant noise sources on and in the vicinity of the site; and
- q) Assessment of site contamination and/or remediation.

Site analysis includes the site and the immediate context - usually up to 50 to 100 metres in any direction from the site (depending on the scale of development, the proposed land uses and its impacts). Site analysis should include plan and section drawings of the existing features of the site at the same scale as the site plan and landscape plan.

Not all of the elements listed above will be relevant for every development or site. It is strongly recommended that you contact Council's Development Services Department to discuss the requirements for your proposal prior to lodgement of a development application.

2.7 Key Areas with Scenic and Landscape Values

This section provides further information on what is meant by gateways and why they are important.

2.7.1. Gateways

Gateways are distinctive sites or spatial sequences which denote a change in a spatial or visual experience. They serve to reinforce the legibility of the environment. The design of development at these sites requires a special response given the visual sensitivities of these locations.

Gateways have a variety of configurations and scales from regional significance to neighbourhood scale. They can be marked by changes such as land use, density of development, vegetation, topography and space. Gateways should relate to a region's

natural resources, scenic views and local cultural heritage. Some are site specific places of environmental identity and others provide a sense of transition or even anticipation. They can identify entrances and destinations.

Located mostly on thoroughfares that convey significant numbers of people, such as major roads and rail corridors, gateways communicate to people that they are entering a unique or different area. The sense of arrival is important in gaining a first impression of a place, contributing to how we perceive the City and can be a lasting positive experience. A legible gateway defines the edges or boundaries of a place on the continuous and recognisable environmental identity of the road or rail corridor, marking it as a special place or landscape.

It is the combination of particular landscape elements, buildings and the sense of place that contributes to the clear legibility and recognisable environmental identity of gateways. Particular landscape elements that contribute to the overall character and environmental identity of the place include vegetation, street trees, road width, depth of front setbacks and lighting. Views to distant natural features and backdrops provide a context to the site, also contributing to the uniqueness of the place or its 'sense of place'. Gateways should be distinctive, bold and uncomplicated.

Gateways may also be located at sites such as significant community congregation areas, public art installations, municipal buildings and ceremonial places. By distinction, a gateway in this context is not the ubiquitous 'entry feature'. It is not a monument to establish a development, nor a marketing tool to create a distinct boundary between a new development and surrounding developments and land uses.

Types of gateways in the City of Penrith may include:

- a) Crossings;
- b) Village bookends;
- c) Land use interfaces;
- d) Intersections; or
- e) Cultural elements.

Chapter C1 'Site Planning and Design Principles' identifies the gateways in the City of Penrith.

New development must contribute to the importance of these gateway locations through sensitive integration in the gateway setting and excellence of design.

2.8 Vegetation

Contact Council for advice.

2.9 Landscape Technical Specifications

2.9.1 Tree/Vegetation Protection during Construction

Trees, which are to be retained, are to be protected during construction. The method and detail of the protection is to be provided by the consulting arborist who prepared the Tree Management Plan.

2.9.2 Landscape Quality Assurance Standards

1. Landscaping materials

Standards have been developed to guide the manufacture of composts, soil conditioners, potting mixes, topsoils, landscape soil mixes and mulches. The standards detail the processing requirements for these products as well as the physical and chemical requirements of these products.

All of the products required for landscaping works specifications must first meet the requirements of the relevant Australian Standards:

AS 4419 Soils for Landscaping and Garden Use

This Standard sets requirements for bulk density, organic matter, weed content, wettability, pH, electrical conductivity, ammonium toxicity, phosphorous content, dispersability, toxicity, nitrogen drawdown, permeability, soil texture and large particles.

AS 4454 Composts, soil conditioners and mulches

This Standard sets requirements for compliance with National health standards; physical, chemical, pasteurization and composting requirements; weed propagules; packaging; marking and documentation; and product analysis.

One of the most effective ways of achieving environmental sustainability is through specifying the use of landscaping materials that contain a minimum percentage of recycled garden and wood waste, as follows:

Mulches	100%
Composts and soil conditioners	80%
Landscaping, garden mixes and on slab soils	40%
Top dressing mixes	20%
Potting mixes	40%

Quality Assurance of products

Some landscaping products have been certified to the relevant Australian Standard and contain the minimum percentages of composted garden and wood waste as specified above.

In order to ensure the quality and environmental sustainability of products delivered to the site, contractors will be required to:

- a) Source product from any of the certified range of products. For example, the certified 'Garden to Garden' manufacturers are available from Waste Service NSW. Your selected manufacturer must provide you with a Manufacturers Australian Standards Licence Number for that particular product; or
- b) If you source product from outside the Garden to Garden range you must:
 - i) Provide certified proof that the manufacturer you have chosen has a Quality Assurance System in place;

- ii) Provide a current test certificate from an approved independent laboratory indicating full compliance with all the physical and chemical requirements (including toxicity and containment levels) of the relevant Australian Standard for the batch from which the product has been sourced; and
- iii) Provide records that will satisfy the principal's representative that the products provided contain the minimum percentage of recycled garden and wood waste as outlined in the specification.

2. Plant Material

Plant substitutions may only be made with written consent of those preparing/designing Landscape Plans. All plants are to be obtained from a nursery located in an area having a similar climate to the site or hardened off for a minimum six week period. All plant material is to be:

- a) True to species and sizes;
- b) Healthy, of good form, not soft or forced;
- c) With large robust root systems that are not root bound;
- d) Free from disease and insect pests; and
- e) Trees are to have a single leading shoot and conform to 'NATSPEC Specifying trees - a guide to assessment of tree quality' (Clark 2003). The NATSPEC guide provides a list of important characteristics which should be checked when assessing the quality of tree stock, and briefly explains why they matter.
- f) In line with current standards.

3. Before planting

Pre-planting

Parts of the site to be landscaped are to have all weeds removed prior to landscaping work commencing. Use hand tools on smaller weeds and, as a last resort, spot application of herbicide to larger, perennial and vigorous weeds.

Backfill retaining walls and make other garden beds after brickwork, electrical and drainage works and adjoining pavements have been completed. Water to settle the soil down and eliminate air pockets. This must be done with a fine gentle spray to prevent surface erosion. If planting is delayed by more than one week from backfilling or other soil preparation then mulch is to be applied to each area left unplanted.

Hardening off plants

Plant root systems shall be maintained moist at all times with particular attention being paid to watering during the onsite installation period before and during planting`.

4. Further Information and Contacts

General Contacts

- a) Australian Institute of Horticulture

- b) Australian Institute of Landscape Architects
- c) Australian Institute of Landscape Designers and Managers
- d) NSW Landscape Contractors Association
- e) National Arborists Association of Australia.

Government Agencies and Authorities

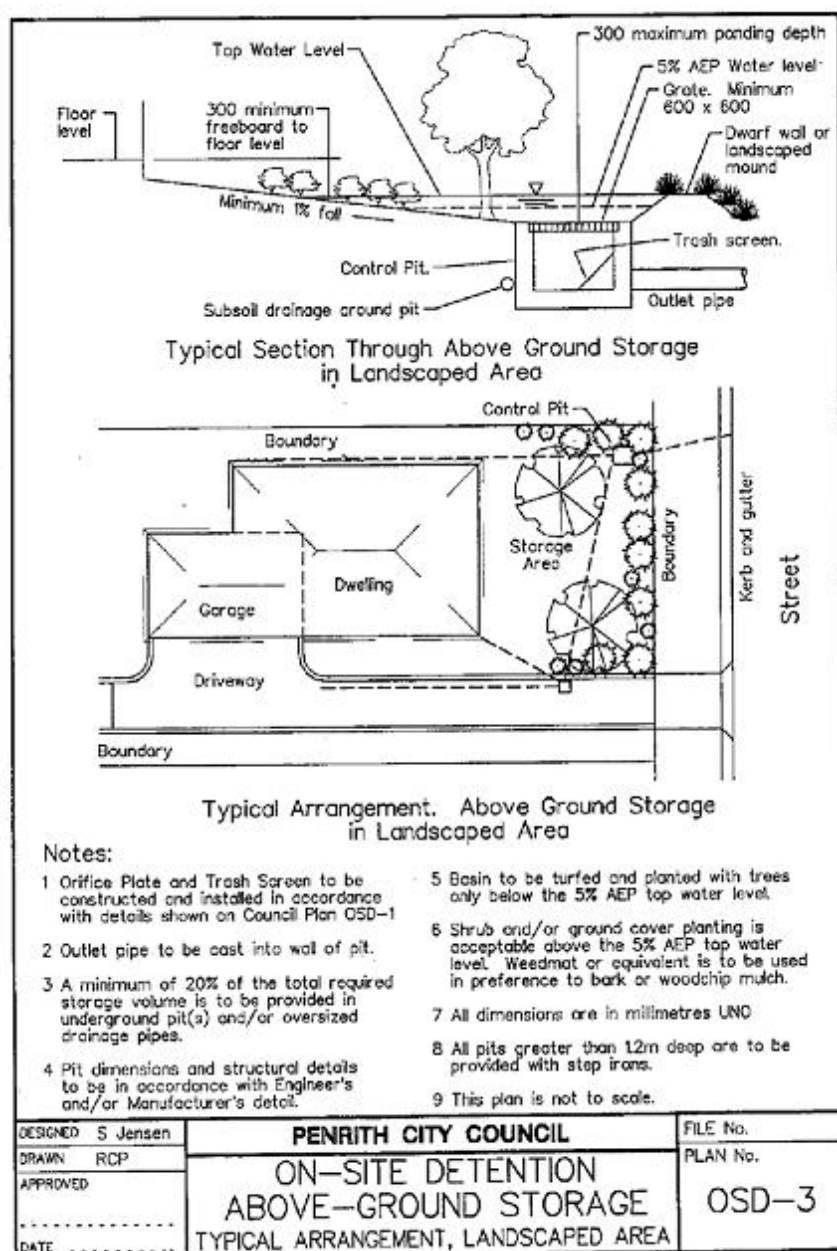
- a) NSW Department of Planning and Environment
- b) NSW Office of Environment and Heritage
- c) NSW Environment Protection Authority.

Non-government agencies

- a) Australian Association of Bush Regenerators
- b) Australian Garden History Society
- c) Australian Plant Society
- d) Landcare Australia
- e) Landcare/Bushcare/Coastcare
- f) Local Government and Shires Association
- g) National Trust.

2.9.3 Above Ground On Site Stormwater Detention and Landscaping

Figure F4.3



2.10 Green Roofs and Roof Gardens

A. Background

Roof space has significant potential to contribute to the amenity, comfort and sustainability of our cities and surrounding areas. Green roofs are one way in which roof spaces can be designed, or retrofitted, to enhance urban areas.

Green roofs are divided into two broad categories, extensive and intensive. Intensive gardens are similar to traditional parks or gardens, but are raised above the ground level, at the top of buildings or at an intermediate level. Extensive gardens are typically not intended for recreational use, are comprised of hardy, low maintenance ground cover species covering large areas of roof space.

Extensive	Intensive
<ul style="list-style-type: none">• Have shallow layer of soil (less than 15cm)• Use hardy groundcover plants (drought and heat tolerant)• Entire area often not suitable for recreational use• Require minimal maintenance• In many cases existing buildings can be retrofitted to enable installation	<ul style="list-style-type: none">• Similar to traditional gardens• Use deeper soils to enable planting of trees and shrubs• Often used as open space or recreation• Are more expensive to construct and maintain• Require purpose built structures and reinforcing due to increased weight• Can incorporate decorative paving and shade structures

B. Benefits

Green Roofs (extensive and intensive) provide a range of benefits, directly (to the individual building) and indirectly (contributing to improved amenity within the urban area).

These benefits can be grouped as amenity, environmental and economic benefits.

1. Amenity Benefits

Leisure and functional open space – In urban environments with limited areas of open space, intensive green roofs and elevated gardens provide recreational space.

Visual amenity value – A significant benefit of intensive and extensive green roofs is the enhanced view and amenity from overlooking buildings.

2. Environmental Benefits

Air quality - Vegetation has the capacity to filter out fine air-borne particles and gaseous pollutants. This process is increasingly beneficial as the cumulative area of vegetation increases.

Ecological value - The enhancement of biodiversity through the use of green roofs is closely linked to the type of vegetation being used and its location.

Water management - Green roofs provide a stormwater detention and retention function, slowing runoff of rainfall into stormwater systems. The transpiration of water held in the soil can also reduce the volume of stormwater runoff.

Reduced 'heat island effect' - The urban heat island effect is localised warming due to the increase in the large amounts of paved and dark coloured surfaces, such as roads, roofs and car parks as a result of urban development. Increasing vegetation and reducing the hardscape on site will assist the urban heat island effect.

3. Economic Benefits

Building insulation and energy efficiency - One of the most important tangible benefits that green roofs offer is reduced maintenance and cooling costs due to increased building insulation and energy efficiency.

Employee satisfaction - Green roofs provide various social benefits by providing 'green relief' to the urban landscape. Green roofs have the potential to increase employee satisfaction by enhancing their surroundings. This, in turn, could improve productivity (*Growing Up-The Blueprint to Green Proof Melbourne*).

Green roof design, construction and maintenance

A green roof is comprised of a series of layers that provide an environment suitable for plant growth and protecting the underlying building structure, shown in Figure F4.4. Appropriate design, construction and maintenance is critical to ensure success. See the following links for further information in this regard: greenroofs.wordpress.com/ and commons.bcit.ca/greenroof/case.html.

C. Further information

Green Roofs Australia (www.greenroofs.wordpress.com) has further information on a range of case studies and examples of green roofs in Australia and internationally, as well as information about technical guidelines and manuals.

2.11. Contaminated Lands

2.11.1. List of potentially contaminating activities

This list is for guidance only as examples of activities that can cause contamination of a site. The list is not exhaustive.

Some activities that may cause contamination:

• acid/alkali plant and formulation	• agricultural/horticultural activities
• airports	• asbestos production and disposal
• chemicals manufacture and formulation	• defence works
• drum re-conditioning works	• dry cleaning establishments
• electrical manufacturing (transformers)	• electroplating and heat treatment premises
• engine works	• explosives industry
• gas works	• iron and steel works
• landfill sites	• metal treatment
• mining and extractive industries	• oil production and storage
• paint formulation and manufacture	• pesticide manufacture and formulation
• power stations	• railway yards
• scrap yards	• service stations
• sheep and cattle dips	• smelting and refining
• tanning and associated trades	• waste storage and treatment
• wood preservation	

Source: ANZECC and NHMRC 1992, Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites.

2.11.2. List of industries and chemicals used

This list is for guidance only as examples of activities that can cause contamination of a site. This list is not exhaustive.

Industry	Type of Chemical	Associated Chemicals
Agricultural/ horticultural activities		See fertiliser, insecticides, fungicides, herbicides under 'Chemicals manufacture

Industry	Type of Chemical	Associated Chemicals
		and use'.
Airports	Hydrocarbons Metals	Aviation fuels Particularly aluminium, magnesium, chromium
Asbestos production and disposal		Asbestos
Battery manufacture and recycling	Metals Acids	Lead, manganese, zinc, cadmium, nickel, cobalt, mercury, silver, antimony Sulphuric acid
Breweries/distilleries	Alcohol	Ethanol, methanol, esters
Chemicals manufacture and use	Acid/alkali	Mercury (chlor/alkali), sulphuric acid and nitric acids, sodium and calcium hydroxides
	Adhesives/resins	Polyvinyl acetate, phenols, formaldehyde, acrylates, phthalates
	Dyes	Chromium, titanium, cobalt, sulphur and nitrogen organic compounds, sulphates, solvents
	Explosives	Acetone, nitric acid, ammonium nitrate, pentachlorophenol, ammonia, sulphuric acid, nitroglycerine, calcium cyanamide, lead, ethylene glycol, methanol, copper, aluminium, bis(2-ethylhexyl) adipate, dibutyl phthalate, sodium hydroxide, mercury, silver
	Fertiliser	Calcium phosphate, calcium sulphate, nitrates, ammonium sulphate, carbonates, potassium, copper, magnesium, molybdenum, boron, cadmium
	Flocculants	Aluminium
	Foam production	Urethane, formaldehyde, styrene
	Fungicides	Carbamates, copper sulphate, copper chloride, sulphur, chromium, zinc
	Herbicides	Ammonium thiocyanate, carbamates, organochlorins, organophosphates, arsenic, mercury, triazines
	Paints - Heavy Metals - Solvents	Arsenic, barium, cadmium, chromium, cobalt, lead, manganese, mercury, selenium, zinc, titanium Toluene oils natural (e.g. pine oil) or

Industry	Type of Chemical	Associated Chemicals
		synthetic
	Pesticides - Active ingredients - Solvents	Arsenic, lead, organochlorines, organophosphates, sodium tetraborate, carbamates, sulphur, synthetic pyrethroids Xylene, kerosene, methyl isobutyl ketone, amyl acetate, chlorinated solvents
	Pharmaceutical - Solvents	Acetone, cyclohexane, methylene chloride, ethyl acetate, butyl acetate, methanol, ethanol, isopropanol, butanol, pyridine methyl ethyl ketone, methyl isobutyl ketone, tetrahydrofuran
	Photography	Hydroquinone, sodium carbonate, sodium sulphite, potassium bromide, monomethyl para-aminophenol sulphate, ferricyanide, chromium, silver, thiocyanate, ammonium compounds, sulphur compounds, phosphate, phenylene diamine, ethyl alcohol, thiosulphates, formaldehyde
	Plastics	Sulphates, carbonates, cadmium, solvents, acrylates, phthalates, styrene
	Rubber	Carbon black
	Soap/detergent - General	Potassium compounds, phosphates, ammonia, alcohols, esters, sodium hydroxide, surfactants (sodium lauryl sulphate), silicate compounds
	- Acids	Sulphuric acid and stearic acid
	- Oils	Palm, coconut, pine, teatree
	Solvents - General - Hydrocarbons - Chlorinated organics	Ammonia e.g. BTEX (benzene, toluene, ethylbenzene, xylene) e.g. trichloroethane, carbon tetrachloride, methylene chloride

Industry	Type of Chemical	Associated Chemicals
Defence works		See explosives under 'Chemicals manufacture and use', 'Foundries', 'Engine works', 'Service stations'
Drum reconditioning		See 'Chemicals manufacture and use'
Dry cleaning		Trichlorethylene and 1,1,1-trichloroethane Carbon tetrachloride Perchloroethylene
Electrical		PCBs (transformers and capacitors), solvents, tin, lead, copper, mercury
Engine works	Hydrocarbons Metals Solvents Acids/Alkalis Refrigerants Antifreeze	Chlorofluorocarbons, hydrochlorofluorocarbons, hydrofluorocarbons Ethylene glycol, nitrates, phosphates, silicates
Foundries	Metals Acids	Particularly aluminium, manganese, iron, copper, nickel, chromium zinc, cadmium and lead, and oxides, chlorides, fluorides and sulphates of these metals Sulphuric and phosphoric Phenolics and amines Coke/graphite dust
Gas works	Inorganics	Ammonia, cyanide, nitrate, sulphide, thiocyanate Aluminium, antimony, arsenic, barium, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, vanadium, zinc
	Organics	BTEX, phenolics, PAHs and coke
Iron and steel works		BTEX, phenolics, PAHs, metals and oxides of iron, nickel, copper, chromium, magnesium manganese and graphite

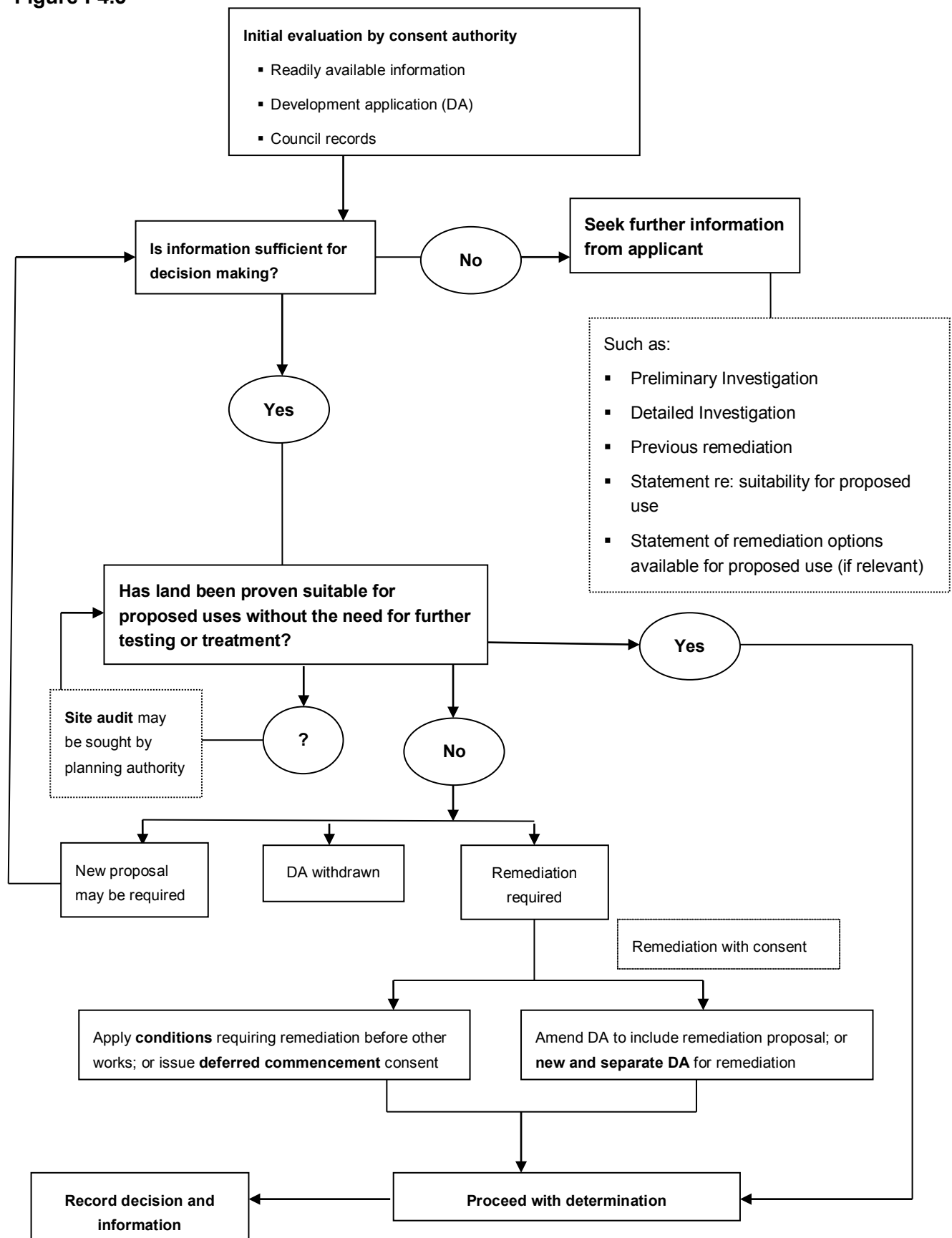
Industry	Type of Chemical	Associated Chemicals
Landfill sites		Alkanes and ammonia, sulphides, heavy metals, organic acids
Marinas	Antifouling paints	See engine works, electroplating metals under 'Metal treatments' Copper, tributyltin (BTB)
Metal treatments	Electroplating - Metals - Acids - General Liquid carburizing baths	Nickel, chromium, zinc, aluminium, copper, lead, cadmium, tin Sulphuric, hydrochloric, nitric, phosphoric Sodium hydroxide, 1,1,1-trichloroethane, tetrachloroethylene, toluene, ethylene glycol, cyanide compounds Sodium, cyanide, barium, chloride, potassium chloride, sodium chloride, sodium carbonate, sodium cyanate
Power stations		Asbestos, PCBs, fly ash metals, water treatment chemicals
Printing shops		Acids, alkalis, solvents, chromium (see photography)
Railway yards		Hydrocarbons, arsenic, phenolics (creosote), heavy metals, nitrates and ammonia
Scrap yards		Hydrocarbons, metals, solvents
Service stations and fuel storage facilities		Aliphatic hydrocarbons BTEX (i.e. benzene, toluene, ethylbenzene, xylene) PAHs Phenols Lead
Sheep and cattle dips		Arsenic, organochlorines and organophosphates, carbamates, and synthetic pyrethroids
Smelting and refining		Metals and the fluorides, chlorides and oxides of copper, tin, silver, gold, selenium, lead, aluminium

Industry	Type of Chemical	Associated Chemicals
Tanning and associated trades	Metals General	Chromium, manganese, aluminium Ammonium sulphate, ammonia, ammonium nitrate, arsenic phenolics, formaldehyde, sulphide, tannic acid
Water and sewerage treatment plants	Metals	Aluminium, arsenic, cadmium, chromium, cobalt, lead, nickel, fluoride, lime and zinc
Wood preservation	Metals	Chromium, copper, arsenic Naphthalene, ammonia, pentachlorophenol, dibenzofuran, anthracene, biphenyl, ammonium sulphate, quinoline, boron, creosote, organochlorine pesticides

Source: Appendix 1 of the Australian Standard AS4482.1 – 2005 – Guide to the investigation and sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds.

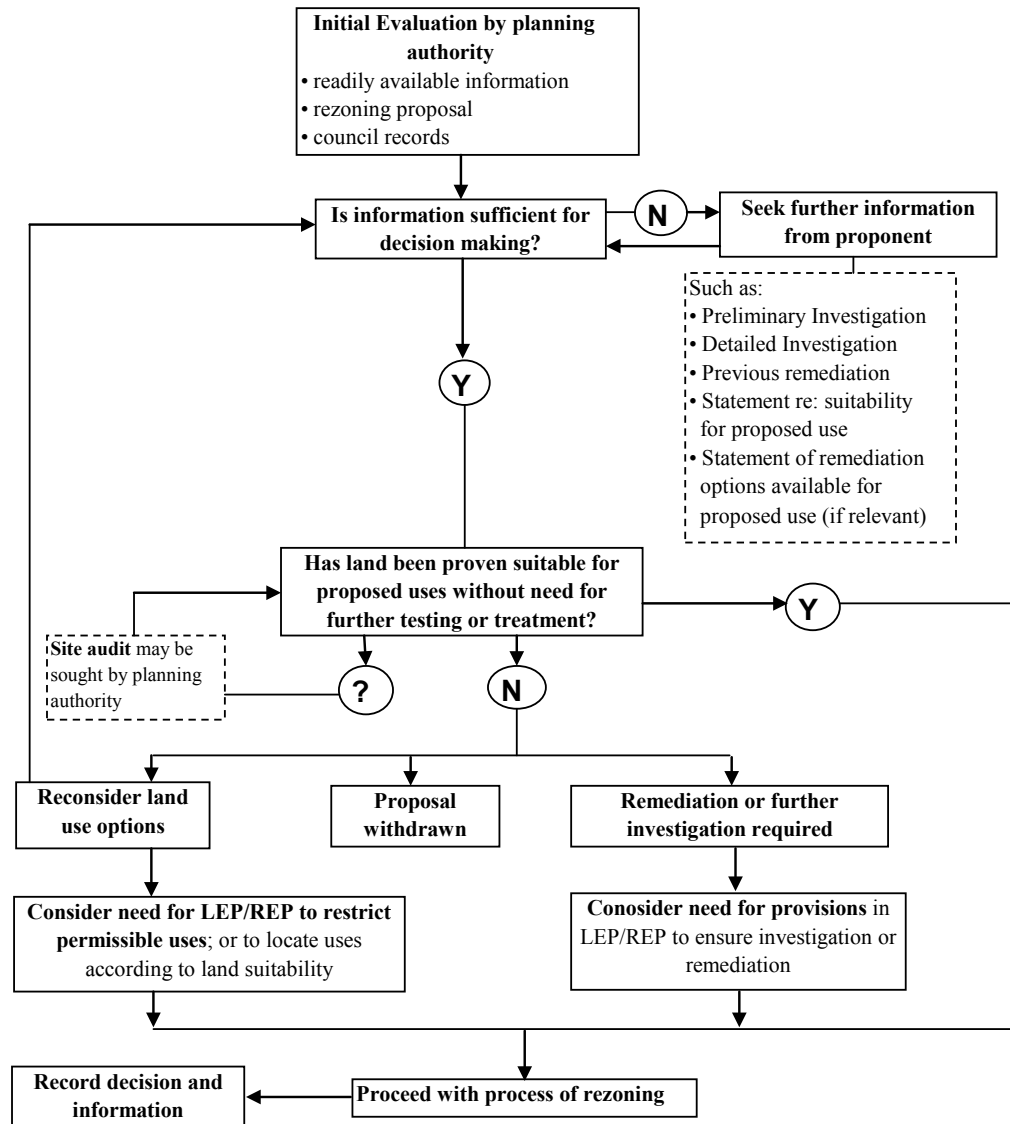
2.11.3 Options available in the development application process

Figure F4.5



2.11.4 Options available in the rezoning process

Figure F4.6



2.12 Waste Generation Rates

Generation Rates – Construction

When estimating wastes for a waste management plan, it is important to remember that no two building sites are the same and that the volumes of waste generated depend on factors such as the design of the building, the waste minimisation practices in place, and the skill of the tradespersons involved.

It is for this reason that applicants are only required to provide estimate volumes on the waste management plan. These estimates can be later checked against recycling and disposal receipts.

There are many techniques that can be used to estimate volumes for construction and demolition wastes. The method detailed below is a simple yet accurate method of estimating waste quantities for a waste management plan:

- a) Quantify materials for the project;
- b) Use margins normally allowed for ordering; and
- c) Copy these quantities across to your waste management plan.

Generation Rates – Residential

The volumes in Table F4.7 are provided as a general guide to assist in the estimation of wastes for the ongoing use of a residential development.

It is recommended that applicants confirm details of Council's current waste and recycling services prior to designing waste storage areas.

Table F4.7

Waste Stream	Allowance
Garbage	80 L/Unit/Week
Co-mingled Recycling	40 L/Unit/Week
If paper and containers are collected separately	
Paper Recycling	25 L/Unit/Week
Containers Recycling	15 L/Unit/Week

Generation Rates - Commercial

The volumes in Table F4.8 are provided as a general guide to assist in the estimation of wastes for the ongoing use of various commercial type developments.

Table F4.8

Type of Premises	Waste Generation	Recycling Generation
Backpackers accommodation	40L/occupant/week	20 litres/occupant/week
Boarding house, Guest house	60L/occupant/week	20 litres/occupant/week
Hotel or motel accommodation	5L/bed/day 50L/100m ² /bar area/day 10L/1.5m ² /of dining area/day	50L/100m ² /of bar and dining areas/day
Registered club	50L/100m ² /bar area/day 10L/1.5m ² /dining area/day	50L/100m ² /of bar and dining areas/day
Food Premises		
- Butcher	80L/100m ² floor area/day	Discretionary
- Delicatessen	80L/100m ² floor area/day	Discretionary
- Fish shop	80L/100m ² floor area/day	Discretionary
- Greengrocer	240L/100m ² /day	120L/100m ² /day
- Restaurants	10L/1.5m ² floor area/day	2L/1.5m ² /day dining
- Supermarket	240L/100m ² floor area/day	240L/100m ² /day
- Takeaway	80L/100m ² floor area/day	Discretionary
Offices	10L/100m ² /day	10L/100m ² /day
Retail		
(other than food sales)	50L/100m ² floor area/day	25L/100m ² floor area/day
Shop less than 100m ² floor area	50L/100m ² floor area/day	50L/100m ² floor area/day
Shop over 100 m ² floor area	60L/100m ² floor area/day	Discretionary
Showrooms	40L/100m ² floor area/day	10L/100m ² floor area/day

3. Other Guidelines, Documents and Technical Information

Penrith DCP 2014 makes reference to a range of publications and other technical information produced by organisations and agencies other than Penrith City Council. The following is not an exhaustive or definitive list of available information, however, serves as a starting point for meeting the requirements of Penrith DCP 2014.

3.1. NSW State Legislation

The primary legislation for planning in New South Wales is the *Environmental Planning and Assessment Act 1979*, with further administrative and operational information detailed in the *Environmental Planning and Assessment Regulation 2000*.

In addition, there is a range of New South Wales (and Commonwealth) legislation and/or regulation that may be relevant to your land use or development. All legislative requirements for your land use or development must be met. Information about the currency and status of legislation is available from the NSW Parliamentary Counsel's Office. The official NSW Government site for online publication of legislation is www.legislation.nsw.gov.au. Each NSW Government Department is able to advise of the legislation it administers, and of the requirements under that legislation. You should therefore contact the relevant Department directly. Information about NSW Government Departments can be obtained from the NSW Government Directory on www.directory.nsw.gov.au.

3.2. Commonwealth Legislation

A number of Commonwealth Acts such as the *Environment Protection and Biodiversity Conservation Act 1999* may be relevant. See <http://www.comlaw.gov.au/>.

3.3. State Environmental Planning Policies (SEPP)

State Environmental Planning Policies are environmental planning instruments prepared by the NSW Department of Planning and Environment and made by the Minister for Planning. Unless otherwise stated, the requirements of a SEPP will generally have precedence over Local Environmental Plans (LEPs) or Development Control Plans (DCPs).

The SEPP documents can be obtained from the NSW Government legislation website (www.legislation.nsw.gov.au).

Questions in relation to a particular SEPP should be referred to the NSW Department of Planning and Environment.

3.4. Residential Flat Design Code 2002

Residential Flat Design Code 2002 is available from the NSW Department of Planning and Environment and may also be accessed from www.planning.nsw.gov.au.

The Residential Flat Design Code is a resource to enable councils, planners, developers and architects to improve residential flat design. The Code sets broad parameters for good residential flat design by illustrating the use of development controls and consistent guidelines.

The Design Code supports the ten design quality principles identified in *State Environmental Planning Policy No. 65 — Design Quality of Residential Flat Development*. It supplies detailed information about how development proposals can achieve these principles.

With the other Design Quality Program initiatives, the Residential Flat Design Code provides comprehensive guidance to improving the design quality of residential flat buildings.

3.5 Certification Systems

3.5.1 National Australian Built Environment Rating System

NABERS is a national rating system that measures the environmental performance of Australian buildings, tenancies and homes. NABERS measures the energy efficiency, water usage, waste management and indoor environment quality of a building or tenancy and its impact on the environment. For information on NABERS, see www.nabers.gov.au.

3.5.2 Green Star

Green Star is an environmental rating scheme that provides formal accredited evaluation of the environmental design and achievements of buildings across nine categories (management, indoor environment quality, energy, transport, water, materials, land use and ecology, emissions, innovation). Green Star provides certified ratings of 4, 5 or 6 Stars. Information about Green Star is available from <http://www.gbca.org.au/green-star/>.

The Green Star certification system was developed and is administered by the Green Building Council of Australia, a not-for-profit organisation.

3.5.3 Building Sustainability Index (BASIX)

Information about BASIX is available from www.basix.nsw.gov.au. BASIX is online program that assesses a house or unit design, and compares it against energy and water reduction targets. The design must meet these targets before a BASIX Certificate can be printed. Every development application for a new home must be submitted to Council with a BASIX Certificate.

BASIX uses information such as site location, house size, type of building materials and fittings for hot water, cooling and heating. It is important to realise that the commitments made during the BASIX process are shown on the final certificate and must be marked on the plans, and adhered to during the building process. Any changes made to the house design means another BASIX assessment must be completed and a new BASIX Certificate submitted to Council.

BASIX was introduced by the NSW Government to ensure homes are built to be more energy and water efficient. BASIX is free and allows users to determine how they will meet targets from a wide range of options such as rainwater tanks, water-saving fixtures, improved insulation, passive solar orientation, natural lighting and native plants for gardens.

3.6 Native Vegetation of Western Sydney

The Native Vegetation of the Cumberland Plain Maps and Interpretation Guidelines were prepared by the NSW National Parks and Wildlife Service (part of the Office of Environment and Heritage). The maps and guidelines can be downloaded from the OEH website (www.environment.nsw.gov.au).

3.7 Threatened Species Assessment Guidelines – The Assessment of Significance (2007)

The *Threatened Species Assessment Guidelines – The Assessment of Significance* are designed to help applicants of a development or activity with interpreting and applying the factors of significance assessment. The aim of the guidelines is to help ensure that a consistent and systematic approach is taken when determining whether an action, development or activity is likely to significantly affect threatened species, populations or ecological communities, or their habitats either directly or indirectly. These guidelines are available from the OEH website (www.environment.nsw.gov.au).

3.8 Significant Impact Guidelines 1.1 - Matters of National Environmental Significance (2009)

The Significant Impact Guidelines provide overarching guidance on determining whether an action is likely to have a significant impact on a matter protected under national environment law; i.e. the *Environment Protection and Biodiversity Conservation Act 1999*. These guidelines are available from the Commonwealth Department of Environment website (www.environment.gov.au).

3.9 Planning for Bushfire Protection

Prepared by the NSW Rural Fire Service, 'Planning for Bushfire Protection' provides information on the planning matters that must be considered when developing residential uses in residential, rural residential, rural and urban locations on sites in close proximity to areas likely to be affected by bushfire events. The Rural Fire Service 'Guidelines for Single Dwelling Development Applications' has been designed to assist applicants meet the requirements of 'Planning for Bushfire Protection' when submitting a development application for a single dwelling. These documents can be downloaded from the Rural Fire Service website (www.rfs.nsw.gov.au).

3.10 Water extraction licenses and approvals

The NSW Office of Water is responsible for the overall management of freshwater resources in NSW including water in rivers, streams and lakes (surface water), and water held under the ground in aquifers (groundwater). For further information, see www.water.nsw.gov.au.