

## APPENDIX G

### Orchard Hills North: Supporting Technical Documents

#### G2 Open Space Strategy



# Orchard Hills North

## Open Space Strategy

Prepared for

Legacy Property

Project number: 2517055

October 2021



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## i. Executive Summary - Open Space Strategy

The open space network has been revised in accordance with the Strategic Road Network Master Plan updates. The proposed strategy provides the required passive open space (POS). Area B calculations have been included throughout this Planning Proposal Report to provide a holistic indication of the open spaces within the Master Plan area. A summary of the total open space calculations is shown below:

	Required Area A	Proposed Area A May 2021	Required Area B	Proposed Area B April 2021
Passive open space	8.51ha	8.51ha	11ha	11ha
Active open space	7.26ha	7.26ha	4.81ha	4.81ha
Total	15.77ha	15.77ha	15.81ha	15.81ha

An additional open space offering in the form of an active transport loop **(1.25ha)** creates a 5km network of active linear space that connects key areas of the site and provides access to surrounding landmarks. This key feature of the development will bring significant health and recreation benefits and better connect the community to open space. The active transport loop (minimum 2.5m wide shared path) is not classed as public open space but does deliver on one of the core objectives of the Penrith Sport and Recreation Strategy which is to 'encourage active and healthy lifestyles for all'.

# 1 Introduction

Legacy Property is proposing to rezone a site in Orchard Hills North, located within the Penrith Local Government Area (LGA). The proposed Area A is approximately 151.92 hectares (ha) with frontages to Caddens Road to the north, Kingswood Road to the west, the Western Motorway to the south and Claremont Meadows residential lots to the east.

Orchard Hills North, is well located being north of the Western Sydney Motorway, in close proximity to the University of Western Sydney (to the north), Nepean Hospital (to the north) and to the Penrith City Centre. South of the Motorway is currently mostly Orchard Hills rural lands, Defence Lands and to the south west is Glenmore Park. Further south, will be the Badgerys Creek Airport.

The rezoning site comprises 54 existing lots (including the school and uniting church) within the proposed Area A (Area A is identified in Figure 1).

The existing fragmented ownership of the site has historically been a barrier to coordinated planning or development of the area, however Legacy Property has now secured agreements covering the majority of Area A.

Legacy Property nominated the Orchard Hills North site under Penrith City Council's Accelerated Housing Delivery Program (AHDP) in October 2017. In November 2017 the site was endorsed by Penrith City Council as a short-term rezoning opportunity to provide for housing delivery over the next 3-5 years.



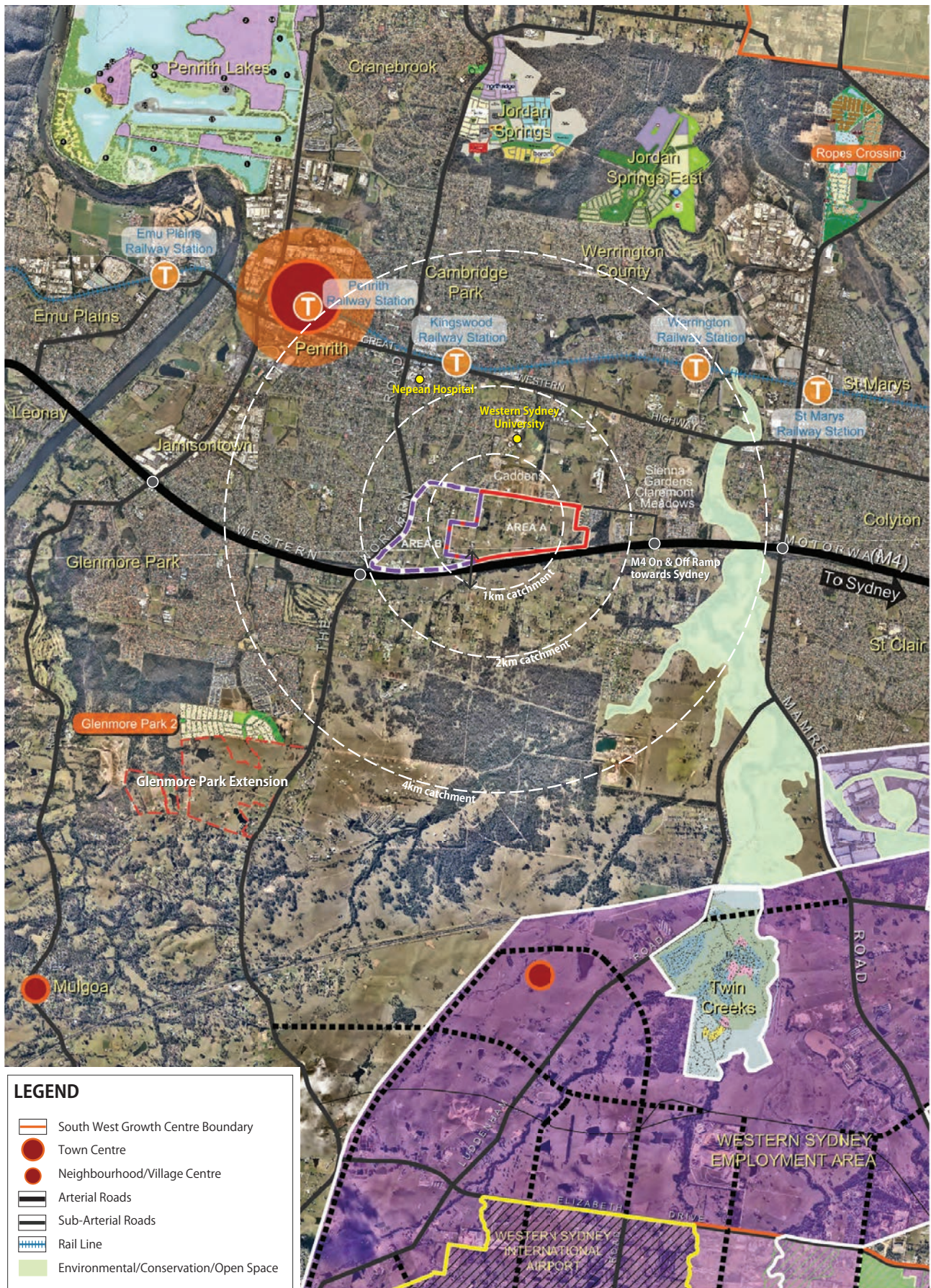


Figure 1 Regional Context

Source: Design and Planning 2021



## 1.1 The Study Area

Legacy Property submitted a Planning Proposal (PP) in March 2018 to rezone land identified as Orchard Hills North, which was subsequently endorsed by Penrith City Council in June 2018. Gateway Determination was received from the Department of Planning and Environment in February 2019.

Rezoning efforts have progressed over 2019/2021 with rezoning anticipated to occur in late 2021.

The Planning Proposal for Orchard Hills North aims to rezone the 151.92ha site from agricultural land to mixed land uses, forming around 1,729 residential lots, a village centre and numerous areas of green space.

Discussions with the Department of Planning and Environment (DP&E) and Council have highlighted the need to consider the logical extension of Area A west (namely the Master Plan area) to The Northern Road, to ensure that future land uses and connections for the entire Orchard Hills North precinct are planned in a holistic manner.

In order to ensure that the future development is fully integrated, a high level Master Plan has been prepared for the entire precinct, covering an area of approximately 263.09ha. The Master Plan considers how Area A (151.92ha) integrates with the balance of the precinct (116.9 ha) and identifies potential future land uses as well as key road connections. It is expected that the Master Plan will provide a framework for the future rezoning of the remaining area, either through a Council Local Environmental Plan (LEP) amendment or a developer/owner led Planning Proposal.



Figure 2 Proposed Area A and Area B

Source: Design and Planning 2021

## 1.2 Background

The cultural landscape of the Orchard Hills North site has developed as a rural landscape over the past 100 years with constantly evolving pastoral practices and declining Cumberland Plain Woodland. Within the last 50 years Orchard Hills North has typically been associated with orchard food production, grazing farming practices with some specialisation in agricultural farming and rural residential communities.

Although genuine food production practices have steadily declined over recent years, and only two lots within the site are currently used for any form of agricultural production, the site remains zoned as RU4 Primary Production Small lots. Today, the majority of the site is utilised for residential purposes and has been substantially cleared.

## 1.3 Our Vision

Orchard Hills North will be a residential community set amongst rolling hills in the rich natural landscape of Western Sydney, offering panoramic views to the Blue Mountains and surrounding areas. The development will incorporate a diverse mix of housing types across 1,729 residential lots, focused around a new village centre that forms the focal point of the future community and offers a high level of convenience for residents.

The over arching vision of Orchard Hills North is to support a safe, welcoming and connected community. This will be achieved through the provision of a wide variety of green spaces and links, connecting each of the future neighbourhood precincts with one another as well as the wider regional community, thereby placing a focus on active transport such as walking and cycling.

## 1.4 Area A Design Principles

A site analysis, supported by extensive technical studies, has informed the following design principles for the Master Plan and Area A:

- Retain key creek lines and capitalise on the opportunity to create a central green link.
- Retain existing significant vegetation as natural bushland.
- Manage and retain views into and out of the site.
- Provide opportunities for a diverse mix of housing types, with medium density housing located around the village centre and major open space.
- Create a new village centre combined with a relocated primary school to establish a community focal point.
- Respect and celebrate heritage buildings and the character of the area.
- Integrate with the community to the north, west and east.
- Link O'Connell Lane, Caddens Road, Frogmore Road and The Northern Road into a meaningful urban road network.
- Improve water quality and water flow.
- Utilise landscaping and topography on the southern boundary to manage noise.
- Promote pedestrian and cycle linkages.
- Generate employment opportunities along the Northern Road.



## 1.5 Structure Plan Area A and Area B

It is proposed to rezone the site from RU4 Primary Production Small Lots, under Penrith Local Environmental Plan (PLEP) 2010, to part R1 General Residential, B2 Local Centre, RE1 Public Recreation, E2 Environmental conservation and E4 Environmental living in the south eastern corner of the site, as well as provide for appropriate controls relating to minimum lot size, height, heritage items, and visual landscape.

The rezoning of Orchard Hills North will provide approximately 1,729 residential allotments. It is expected that the site will ultimately provide a broad mix of dwelling types on allotments ranging from larger environmental living lots (2,000m<sup>2</sup>) to traditional detached residential lots (250-550m<sup>2</sup>) as well as some medium density townhouse product. The proposed village centre will provide approximately 6,000-8,000m<sup>2</sup> of retail space supported by cycle and pedestrian links with approximately 17.5ha of open space, bushland and riparian corridors.

The location of parks and open space areas have been carefully selected to enhance the existing value of the natural landscape, such as hill tops and creek lines, and to retain the significant bushland areas, in order to provide the highest level of amenity for future residents.

The site is physically and strategically suited for urban development, noting that:

- It is a discrete area formed by the boundary of an existing urban area and major road infrastructure.
- It adjoins an existing residential subdivision, and in close proximity to the hospital, Western Sydney University and the Penrith CBD.
- There are limited environmental or physical constraints that would prevent redevelopment
- It is outside the Western Sydney Priority Growth Area and is therefore better placed to be rezoned through a developer led PP
- Upgrades are currently being undertaken to the Northern Road, which the Orchard Hills site is located east thereof, and gains access thereto. Thus, the rezoning of the land will support the Government's cost of infrastructure and will result better utilisation of the land

— It is able to capitalise on the availability of new and existing infrastructure, such as the recently completed Werrington Arterial Road and new M4 on and off-ramps, the signalisation of the Frogmore Road/Northern Road intersection as part of The Northern Road upgrade, and four train stations within 4.5km of the site (Penrith, Kingswood, Werrington, St Marys).

The indicative Urban Design Structure Plan for the site is identified in Figure 3 below\*.

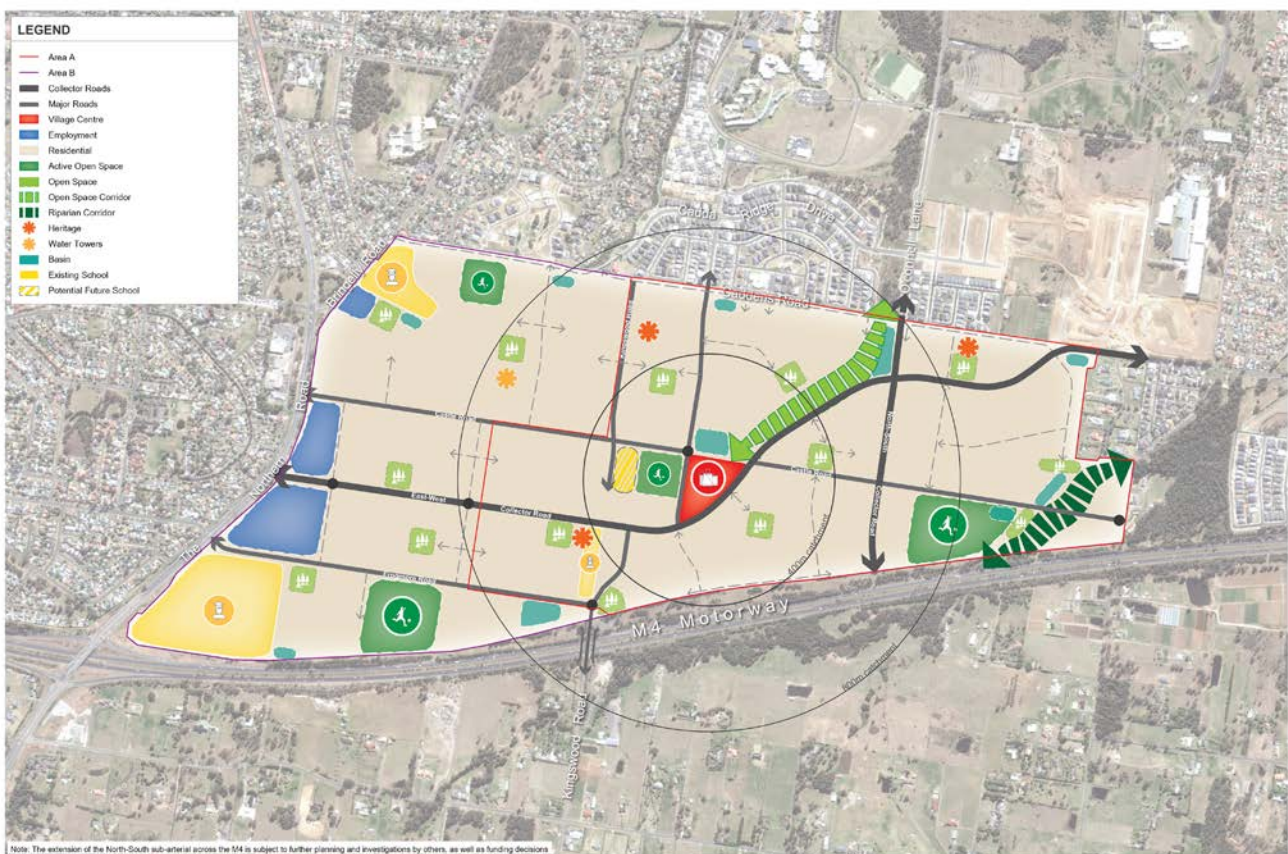


Figure 3 Indicative Structure Plan - Area A and Area B

Source: Design and Planning 2021

\* Further indicative information relating to Master Plan Area B can be found on pages 78 - 71 of this report.

## 2 EXISTING CONDITIONS

### 2.1 Site Location and Context

The Orchard Hills North site is 151.92ha and is located within Penrith City Council's local government area. Orchard Hills North is bound by Caddens and Caddens Hill developments and Caddens Road to the north, Claremont Creek and the suburb of Claremont Meadows to the east, the M4 Motorway to the south and is partially bound in parts by length of Kingswood Road to the west with potential land acquisition opportunities into the Master Plan area further the west.

The subject site is surrounded by a variety of social infrastructure and transport corridors. It is located directly to the north of the M4 motorway and south of Caddens Road. Penrith Town Centre is located approximately 5km to the west of the subject site and can be accessed via the M4, the Northern Road or the Great Western Highway road network. The site is supported by numerous educational facilities including the Kingswood Campus of the Western Sydney University and the Nepean Campus of TAFE NSW to the north, with Kingswood High School, Montgrove College and Penrith Christian College to the west. The Nepean district hospital is located 3km to the north west of the site.

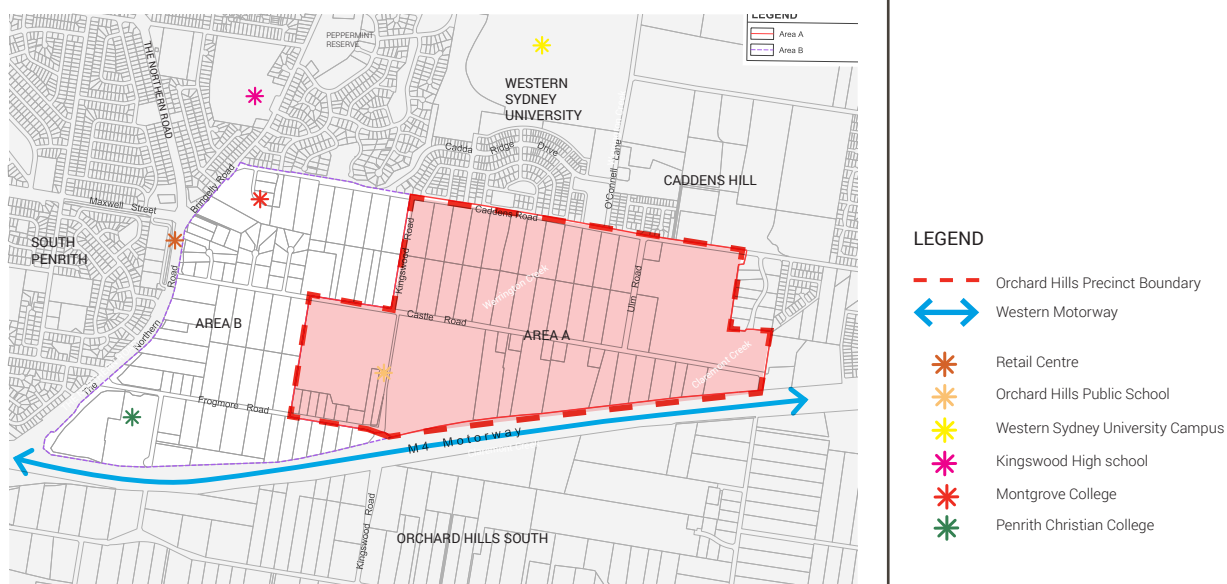


Figure 4 Site Context Plan

## 2.2 Heritage

An assessment of both indigenous and non-indigenous heritage reports was undertaken by Kelleher Nightingale Consulting and NBRs Architecture Heritage respectively.

No Aboriginal artefacts or sites were identified within the study area. The cultural landscape of Orchard Hills North site has developed as a rural landscape over the past 100 years with constantly evolving pastoral practices and declining Cumberland Plain Woodland and River-Flat Eucalypt Forest.

Within the last 50 years the district of Orchard Hills North has typically been associated with orchard food production, grazing farming practices with some specialisation in agricultural farming and rural residential communities. Although genuine food production practices have steadily declined over recent years the site is still zoned as RU4 and as such the dominant landscape character is still rural residential. However, three properties within the site and one within the structure site have been identified by Penrith Local Environmental Plan, 2010 as having historical significance.

Any proposals for future development should conserve the heritage significance of the heritage items identified on site (identified as 1155, 1845, 1657 and 1153 on the LEP map) and known as Brick Farm House, Lindfield, Orchard Hills Uniting Church and Water Reservoir.

Any future development should aim to conserve the heritage significance of heritage items within and in the vicinity of the site through appropriate visual curtilage created by increased front and side boundary widths to the heritage item and appropriate side boundary set back to all future lots adjoining any heritage item.



Brick Farmhouse



Lindfield



Orchard Hills Uniting Church



Water Reservoir



## 2.3 Vegetation and Habitat

Most of the site has been cleared of native vegetation for uses such as grazing and horse agistment, residential development and semi-rural activities. The clearing of native vegetation has allowed the site to be dominated by exotic pasture grasses and shrub species. Remnants of native vegetation remaining on site have been subject to high levels of disturbance such as rubbish dumping and noxious weed invasion.

An ecological assessment was undertaken by Cumberland Ecology in 2018. The report states that the vegetation within the site is identified strands of Cumberland Plain Woodland and River Flat Eucalypt Forest: both vegetation types are Endangered Ecological Communities (EEC) under the Threatened species Act 1995.

Five threatened fauna species were identified within Area A. Although not recorded in Area A, four threatened species have also been recorded in the surrounding location due to the presence of suitable foraging habitat.

## 2.4 Topography and Geology

The site's topography is characterised by undulating hills with some outcrops and low-lying areas coinciding with streams and creeks.

Mapping shown on the Soil Landscapes of the Penrith 1:100 000 Sheet Map (Bannerman and Hazelton, 1990) indicates that the subject site is underlain by Luddenham, South Creek and Blacktown Soil landscapes.

The Luddenham unit is described as an erosional soil landscape with dark podzolic soils or massive earthy clays on crests, with moderately deep red podzolic soils on upper slopes and moderately deep yellow podzolic soils and prairie soils distributed throughout the lower slopes and drainage lines (Bannerman and Hazelton, 1990).

The South Creek unit is described as an alluvial soil landscape comprised of deep layered sediments over bedrock or relict soils with structured plastic clays or structured loams occurring along drainage lines with red and yellow podzolic soils commonly forming terraces (Bannerman and Hazelton, 1990).

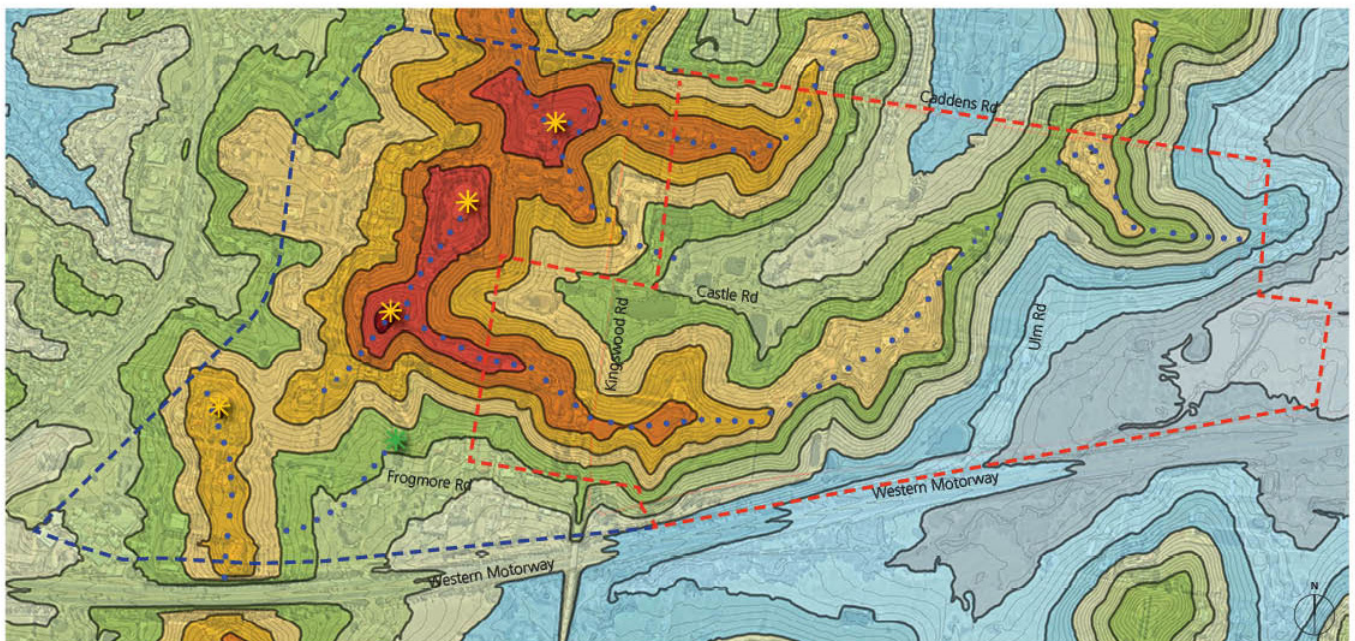
A small area of the subject site in the south eastern corner falls within the distribution of the Blacktown Soil Landscape unit.



#### LEGEND

- Orchard Hills North Area A
- Orchard Hills North Master Plan Area
- Cumberland Plain Woodland
- River-Flat Eucalypt Forest

Figure 5 Existing Native Vegetation Diagram



#### LEGEND

- |  |   |   |  |
|--|---|---|--|
| <span style="color: lightgrey;">■</span> 35 to 40m | <span style="color: lightgreen;">■</span> 55 to 60m | <span style="color: yellow;">■</span> 75 to 80m | <span style="color: yellow;">★</span> High Points                          |
| <span style="color: lightblue;">■</span> 40 to 45m | <span style="color: green;">■</span> 60 to 65m      | <span style="color: orange;">■</span> 80 to 85m | <span style="color: blue;">●</span> Ridge Line                             |
| <span style="color: cyan;">■</span> 45 to 50m      | <span style="color: green;">■</span> 65 to 70m      | <span style="color: red;">■</span> 85 to 90m    | <span style="color: red;">---</span> Orchard Hills North Area A            |
| <span style="color: blue;">■</span> 50 to 55m      | <span style="color: yellow;">■</span> 70 to 75m     | <span style="color: darkred;">■</span> > 90m    | <span style="color: blue;">---</span> Orchard Hills North Master Plan Area |

Figure 6 Existing Contour Map

## 2.5 Hydrology

The watercourses within the subject site form part of the Hawkesbury-Nepean Catchment. The two primary watercourses occurring within the subject site include Werrington Creek and Claremont Creek, occurring alongside a number of associated minor drainage lines. The headwaters of Werrington Creek are located within the south-west area of the subject site. Werrington Creek flows through the subject site for approximately 950m in a northerly direction. Werrington Creek is a tributary of Claremont Creek, with which it joins north of the subject site. The headwaters of Claremont Creek are located south of the subject site with the main body of the creek occurring as a 650m stretch through the subject site. Claremont Creek is a tributary of South Creek. Claremont Creek continues north for approximately 3km before flowing into South Creek. Twenty-four (24) farm dams are scattered throughout the subject site, with ten occurring along watercourses or drainage lines.

## 2.6 Site Character

The overall character of the site is created by the undulating rural topography with its distinct north south and east west ridge line which provides expansive distant views of the Blue Mountains to the west, the education and conservation lands of Werrington in the north, rural farms of Orchard Hills in the south and the riparian corridor of Claremont Creek and South Creek to the east.

The landscape character is dominated by a framework of numerous large rural lifestyle lots and the inclusion of approximately 5Ha of commercial market gardens. The semi-rural character prevails and is viewed as being predominately a composition of pasture grasslands, cleared paddocks with some grazing, isolated semi-rural buildings and clumps of remnant Cumberland Plain Woodland and River Flat Eucalyptus Forest trees. The physical presence of numerous farm dams, overland flow rivulets that form Werrington Creek to the north and Claremont Creek to the east further enhance the prevailing rural character of the site.

The open space principles of the Orchard Hills Master Plan area are based on creating an open space framework that retains this unique rural character where practical, utilise the high points along the ridge lines to maximise views and incorporate the heritage values of the site. These core features are to be further enhanced by retention of the natural environment which includes pockets of remnant woodland to be retained in open spaces, conservation parks and delivers sustainability in the revegetation of creek line corridors.



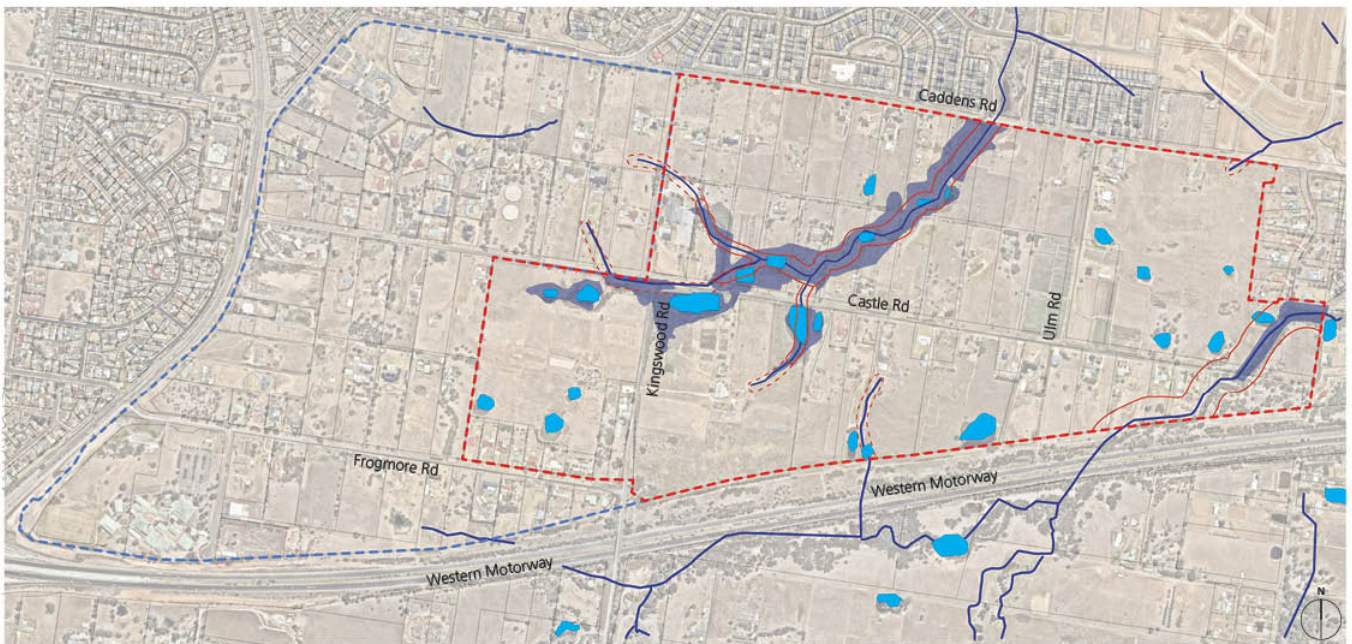


Figure 7 Flood Zone and Riparian Corridor Plan

#### LEGEND

- |  |  |
|--|--|
| <span style="color: red;">---</span> Orchard Hills North Area A            | <span style="color: red;">---</span> Riparian Extent                           |
| <span style="color: blue;">---</span> Orchard Hills North Master Plan Area | <span style="color: red;">---</span> Potential Riparian Corridor to be Removed |
| <span style="color: blue;">---</span> Watercourse                          | <span style="background-color: lightblue;"> </span> 1% AEP Flood Extent        |
| <span style="background-color: lightblue;"> </span> Existing Farm Dam      |  |



Figure 8 Land Use and Character Diagram

#### LEGEND

- |   |  |   |
|---|--|---|
| <span style="background-color: yellow;"> </span> A Land Use - Rural / Lifestyle lots                    | <span style="background-color: lightblue;"> </span> F Land Use - Community Activities/Churches | <span style="color: red;">*</span> Church                             |
| <span style="background-color: green;"> </span> B Land Use - Rural Lifestyle/Agistment/Grazing Paddocks | <span style="background-color: lightgreen;"> </span> G Land Use - Educational                  | <span style="color: orange;">*</span> Heritage Listed Building / Item |
| <span style="background-color: purple;"> </span> C Land Use - Manor Style / Semi - Suburban Lots        | <span style="background-color: orange;"> </span> H Land Use - Commercial/Retail                | <span style="color: blue;">*</span> Water Tanks                       |
| <span style="background-color: darkgreen;"> </span> D Land Use - Agriculture / Market Gardens           | <span style="background-color: pink;"> </span> I Land Use - Infrastructure                     | <span style="color: yellow;">*</span> Mobile phone transmission tower |
| <span style="background-color: darkblue;"> </span> E Land Use - Existing Vegetation                     |  |   |

- |  |
|--|
| <span style="color: blue;"> </span> Water body                             |
| <span style="color: lightblue;"> </span> Creek corridor                    |
| <span style="color: green;"> </span> Western Motorway M4 Corridor          |
| <span style="color: red;">---</span> Orchard Hills North Area A            |
| <span style="color: blue;">---</span> Orchard Hills North Master Plan Area |



## 3 LANDSCAPE DESIGN OPPORTUNITIES

The analysis of the existing site conditions has identified, along with some physical constraints, a series of opportunities for the Orchards Hills North site. These have been used to inform the concept design of the new development.

The exiting rural landscape characterised by rolling hills is the core characteristic of the Orchards Hills site. The opportunity to reinforce the low lying riparian areas with endemic vegetation, emphasis the topographical changes and maintain views within and beyond the site will contribute to the rural character quality within the development.

### 3.1 Heritage

It is understood from the Aboriginal Heritage Study undertaken for the rezoning site that no Aboriginal artefacts or archaeological site were identified within the study area.

The cultural heritage of the has been dominated by the European style agricultural practices over the subject site for the past 100 years. Although the agricultural These site clearing and farming strategies have formed the prevailing rural character of the site as seen today. Sitting within Area A site are three significant heritage buildings know as the Brick House, Lindfield and the Orchard Hills Uniting Church. Conserving these items provide the opportunity to retain elements of the sites heritage that would otherwise be lost. The heritage elements can be emphasised within the development area through improved visual curtilage in and around teach of the sites to increase their presence within a landscape setting and to reduce the visual impact of future development. Certain elements can be drawn upon for reinterpretation within some open space areas to further expand upon the local heritage of the site.

### 3.2 Vegetation

Although the subject site has been predominately cleared of most native vegetation there exists several scattered and fragmented stand of Cumberland Plain Woodland and River-Flat Eucalypt Forest across the site. The opportunity exists to conserve these endangered communities within bushland parks, riparian corridors and in some instances, within opens space areas. Protection of the remnant vegetation allows for the preservation of these threatened communities and provides for additional pockets of native vegetation that inter-connects with the open space areas distributed throughout the site.

The high level of clearing of the native vegetation allows for the introduction of a variety of deciduous and evergreen tree species that will prevail through the streetscape hierarchy and subsequent pockets of public open space. This will create a diverse palette of colour and textures to the development site that is reflective of the orchard farm heritage that once existed over the site.

### 3.3 Topography

The undulating topography generates opportunities for the creation of several key viewing points along the ridge lines to the surrounding immediate suburban context and Blue Mountains beyond. Open space opportunities should be located on or along the ridge line high points where possible to enhance the objective of providing the sense of ridge line vegetation and to preserve views.

The lower slopes surrounding the ridge lines provides the site with a more gentle topography and thus is more conducive for many suitable development opportunities. Nestled in behind the ridge line, these gentle slopes provide the opportunity to locate a local centre, and associated medium density housing without adversely impacting the visual qualities of the site from the surrounding neighbourhoods.

### 3.4 Hydrology

The prevailing overland flow travels from south west of the site to the north east and forms into Werrington Creek beyond Caddens Road. This flow provides the site with the opportunity to incorporate a series of large open water bodies that will enhance the rural character of the site currently provided by the numerous existing farm dams. Water bodies provide the site with a unique landscape setting and provide the development site with a significant focal point for the development along with visual and potentially active amenity.

### 3.5 Reducing the Urban Heat Island Effect

The most striking characteristic of an urban microclimate is the urban heat island (UHI) effect. Urban areas become significantly warmer when there is limited green cover and an abundance of hard surfaces which absorb, store and radiate heat.

In a widely reported era of warming climate, research shows that trees and other plants are an effective way to reduce the urban heat island effect (UHI). Trees in particular, are proven to be most effective in reducing the urban heat island effects (by shading building surfaces, deflecting radiation from the sun and releasing moisture into the atmosphere). The use of trees and vegetation in the urban environment also brings benefits beyond mitigating urban heat islands (including reduced energy use, improved air quality, provide habitat for many species, offer enhanced storm water management and improve quality of life).

The Orchard Hills North development area is located in western Sydney, (an area with already hot temperatures experienced in summer). The following mitigation methods are an opportunity to assist in reducing air temperature across the Orchard Hills North development and provide improved levels of thermal comfort:

- Provide a 'cool pavements' and 'street greening' approach including shrub and ground cover plantings to reduce the maximum ambient temperature of the development. The selected response should provide consideration to the relevant council and Australian Standards both for construction and maintenance.
- Implement larger canopy trees to reduce the impacts of solar radiation and improve comfort at the pedestrian level.
- Provide optimal growing conditions for trees (increasing soil volume where possible to support larger tree growth, reducing compaction and providing additional passive irrigation opportunities such as integrated WSUD)
- Implement good long- term maintenance practices to ensure trees remain healthy and full canopy potential can be reached.

## 3.6 Inclusive and Accessible Open Spaces

The open space network of the Orchard Hills North development will provide spaces which are not only safe, fun and family orientated but that are centred around the principle that everyone should be able to equally share in the fun and be included. This includes considering the right mix of facilities and furniture when developing each open space (so that the needs of all users are considered). Thoughtful selection of furniture such as seats, picnic settings, bins and bubblers will be undertaken with accessibility in mind, as well as the provision of accessible path networks, signage for wayfinding, and the provision of play spaces that offer accessible, inclusive experiences for people of all ages, abilities and backgrounds.

## 3.7 Inclusive Play

Penrith City Council Sport and Recreation Strategy is committed to providing quality play spaces throughout the Penrith LGA and this commitment will be demonstrated in the new play offers at Orchard Hills North development. All spaces will be designed with the NSW Government's best practice inclusive play guidelines 'Everyone Can Play' in mind. These guidelines will be used when developing designs for all new play spaces to create new and exciting parks that provide various forms of play, improve shading, seating and access.

In line with Council's visionary strategy documents, all new play spaces within the Orchard Hills development will (where physically possible) seek to:

- Cater for everyone (regardless of ability)
- Bring people together and be welcoming, comfortable, and easy to navigate
- Offer a range of physical challenges across a variety of landscape settings
- Be spaces to explore, promoting active and healthy lifestyles
- Be diverse, contemporary, unique, safe and innovative
- Be accessible, creating a connected network across the development where everyone is able to engage and play together
- Be classified based on Council's clearly identified hierarchies



## 4 DESIGN PRINCIPLES AND OBJECTIVES

### 4.1 Principles

The Landscape Master Plan will incorporate the following design principles:

- Create a strong integrated landscape framework that capitalises on the site's physical attributes and establishes a clear vision for the landscape.
- Retain key creek lines and capitalise on the opportunity to create a central green link.
- Integrate stands of Endangered Ecological Community vegetation (Cumberland Plain Woodland) into open space areas where possible and feasible.
- Preserve and enhance existing areas of significant ecological value such as riparian corridors, wetlands and habitat vegetation.
- Capitalise on the views and vistas shaped by the existing topography to create a variety of spatial experiences that exploit view opportunities from and within the site.
- Provide a diverse mix of open space and public domain amenity for the community.
- Promote a walkable community and include pedestrian and cycling networks.
- Improve water quality and on site retention issues by integrated water sensitive urban design principles.
- Incorporate environmentally sustainable design principles.
- Incorporate Crime Prevention through Environmental Design principles.
- Incorporate APZ and other bush fire management requirements within the landscape design.
- Provide accessible and inclusive community open spaces.

## 4.2 Objectives

The landscape master plan will incorporate the following design objectives:

- Establish a high quality landscape based on the synthesis of development objectives, contextual issues, legibility, green links, site constraints and opportunities, sustainable asset management, and best practice.
- Strengthen the appearance and amenity of the proposed development by sensitively integrating land form, architecture and landscape through effective site planning and landscape design.
- Create a variety of quality landscape spaces that are sympathetic to the environment and natural processes and are linked with existing ecological corridors.
- Provide a permeable and legible framework of streets and open spaces closely integrated with the surrounding landscape, open spaces and streets.
- Consider Council's 3 objectives of high quality, low maintenance and robustness for open space planting, furniture and finishes.
- Manage the Urban Heat Island effect by implementing strategies that will increase tree canopy cover potential and sustain long term tree health.
- Deliver open spaces that offer diversity of experiences and support 'community togetherness' where everyone feels welcome, regardless of age, ability or cultural background.

## 5 LANDSCAPE MASTER PLAN

### 5.1 Area A

The landscape Master Plan adheres to and achieves the above design principles and objectives in the following ways;

- Location of major open spaces along existing natural features of the site such as the riparian park and detention basins along low lying areas and the integration of rain gardens and detention basins within these parkland environments with WSUD principles.
- The major open spaces maintain and improve the existing stands of threatened ecological communities, namely the Cumberland Plain Woodland (CPW) in the Riparian Park and the Sydney Coastal River Flat Forest (SCRFF) along the riparian corridor by incorporating and consolidating the existing vegetation into the landscaped open space.
- The streetscapes enhance the natural landscape and reinforce the road hierarchy, through their arrangement, size and species selection. The streets provide green links and view corridors throughout the site, making connections with and between other open spaces.
- The road layout follows the existing road framework and reflects the natural topography of the site. The streets provide a circulation network that is safe, permeable and legible for pedestrians, cyclists and vehicles alike
- A selection of high quality street furniture, lighting, finishes and planting which relate to the natural environment, low maintenance and robust have been proposed for the site.
- Integration of rural and native themes through out the open spaces and streets gives the Orchard Hills area a strong sense of character. The urban commercial and retail precinct, children's play areas, active and passive open spaces and conservation corridors provide a range of amenities and uses for the future community of Orchard Hills. Each space and street has a purpose and theme in keeping with the overall landscape vision for the site.
- Open space areas fronting residential dwellings shall be designed to promote natural surveillance and resident accessibility. Low planting and visually permeable fencing will provide for passive surveillance (whilst maintaining privacy for residents. Verges, crossings and pram ramps will be located with careful consideration of accessibility and connectivity to the public open space network and the landscape character of the streetscapes (street trees and possible verge planting) shall be designed to be in keeping with any adjacent open space character.

#### Legend






-  Residential Land
-  Landscape Area
-  Site Boundary
-  Master Plan Area
-  Collector Road



Figure 9 Landscape Master Plan - Area A

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## 5.2 Area B

The indicative Master Plan for Area B adheres to continuing the above design principles and objectives for Area A. The indicative open spaces provide a varied mix of functions and facilities within accessible walking distances for residents living in the development.

Further breakdown of the indicative function and facilities can be found on pg71 of this report.

### Legend

-  Active OS/Sporting Ground
-  District Park
-  Local Park
-  Basin
-  Rezoning Site Boundary
-  Area B Site Boundary



Figure 10 - Indicative Landscape Masterplan Area B

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## 6 OPEN SPACE MATRIX

The Orchard Hills North Open Space matrix on page 31 provides an overview of the open space typologies and the proposed functions and recreation facilities proposed within each open space. A number of key drivers have been used to determine the location, function and facilities proposed for each open space including:

- Diversity of proposed residential lots. For residents who live in smaller and higher density lots, the need for access to high quality public open space and additional facilities is increased due to the density of population living nearby.
- Co-location and proximity to other open spaces/recreation facilities (i.e improving walkability to a diverse open space experiences)
- Ecological constraints (responding appropriately to the presence of protected vegetation communities)
- Flooding Constraints (responding appropriately areas at risk of flooding)
- Stormwater treatment and the requirement for detention basins

Open Space Number	Area (ha)	Indicative Dimension (m)	Character Precinct	Open Space Type (as per PCC park classification)	Ecological Constraint	WSUD Constraint	Function/Facilities	Function/Facilities																							
								Toddler Play	Junior Play	Senior Play	Mixed Recreation	Water Play	Water story	Kickabout	Formal Sport	Sport Court	Fitness Stations	Shelter	BBQ	Market	Productive Gardens	Lookout	Boardwalk	Dog off-leash (fenced)	Conservation	Regeneration	Performance/Events	Interpretation	Public Art	Cycle Network	Parking
OS1	0.5	84x60	District Playground	Local park	N/A	N/A	District scale 'inclusive' play space. Incorporating play opportunities for kids under 12.																								
OS2	0.6	75x75	Informal Recreation	Local park	N/A	N/A	Active local park with high level recreational activities for children and picnic facilities.																								
OS3	0.66	90x55	Informal Recreation	Local park	N/A	N/A	Adjacent the Gaddens Road heritage building which is located at a high point on the site. Open space maintains view corridors to Orchard Hills Development																								
OS4	0.5	140x36	Informal Recreation	Linear park/Dog Park	N/A	N/A	Adjacent heritage church building a meandering flower garden with playground and shelters. OS4 services the development as a dedicated dog off-leash area.																								
OS5	1.97	66x380 (including riparian channel)	Family Park/Riparian Interface	Linear park/City Wide Park	N/A	2 x Bio retention basin to north and south of riparian drainage channel	Central open space linear park that varies in width from 15m - 30m. Incorporating fitness, play and riparian themes throughout and providing connections with other opens spaces.																								
OS6	3.97	194x215	Active Open Space	Sporting space	N/A	N/A	Major sports hub (formal recreation) with sports fields and associated amenity. Connected by active transport network.																								
B4	1.29	150x100	Active Open Space/Riparian Interface/Raingarden	Sporting space/Local Park with drainage	N/A	Detention basin 1.29 ha. Rain Garden 0.57ha (Not included in OS calculation)	Detention basin for flood mitigation from the Claremont Creek. Serves as an intermediate park between OS6 & OS7 providing both active and passive recreation. Raingarden with maintenance path																								
OS7	0.84	50x190	Informal Recreation/Riparian Interface/Raingarden	Local park/Local bush park	N/A	N/A	Open spaces adjacent to Claremont Creek. Nature play opportunities with water play inspiration, raingarden. Active transport network links through park and bush zones. Seating and picnic shelters throughout for passive recreation.																								
OS8	2	130x150	Active Open Space	Sporting space/Market Space	N/A	N/A	This park will provide a community garden, multi-courts and market space adding to the flexible nature of the space.																								
OS9	0.5	83x62	Informal Recreation	Local Park	N/A	N/A	Active local park with passive recreational spaces for children, dog walking, picnic and kickabout spaces																								
Bush OS1	1.92	145x140	Natural Recreation	Local bush park	Approx 75% Cumberland Plain Woodland (CPW)	N/A	Areas of bush conservation and regeneration. Low levels of passive interaction opportunities including shelters and seating.																								
Bush OS2	0.36	40x100	Natural Recreation	Local bush park with drainage	Approx 60% Cumberland Plain Woodland (CPW)	N/A	Areas of bush conservation and regeneration. Low levels of passive interaction opportunities including shelters and seating.																								
Bush OS3	0.65	76x74	Natural Recreation	Local bush park	Approx 50% Cumberland Plain Woodland (CPW)	N/A	Areas of bush conservation and regeneration. Low levels of passive interaction opportunities including shelters and seating.																								

Figure 11 Area A - Open Space and Recreational Infrastructure Provision Table



## 7 OPEN SPACE FRAMEWORK

The Orchard Hills Master Plan will provide the local community with a variety of recreational opportunities from formal sport to active and passive recreation and amenities. The landscape Master Plan aims to enhance the existing landforms and natural character and of the area to create a cohesive network of landscaped open spaces and streetscapes that will contribute to the future community of Orchard Hills.

- The open space framework has been designed with walkability in mind. All open spaces are within a 400m radius of a lot.
- The open spaces have been located at a variety of elevations and orientation, ensuring differing levels of exposure and microclimate.
- Each open space has an overarching function designation, but the approach is to provide a wide range of passive and informal active facilities within each space.
- Play spaces have been located throughout the development and offer a range of amenities and experiences for all ages.



Boardwalk/Bridges



Picnic Shelters



Family Park



Barbeque



Community Garden



Heritage Building



Public Art



Parking



Toddler Play



Juniors Play



Senior Play



Mixed Recreation



Cycleway



Dog Off Leash Area



Look Out



Revegetation Zone



Playing Fields



Kickabout Space



Fitness



Market Space



Sports Courts



Event Space



Toilet/Amenity

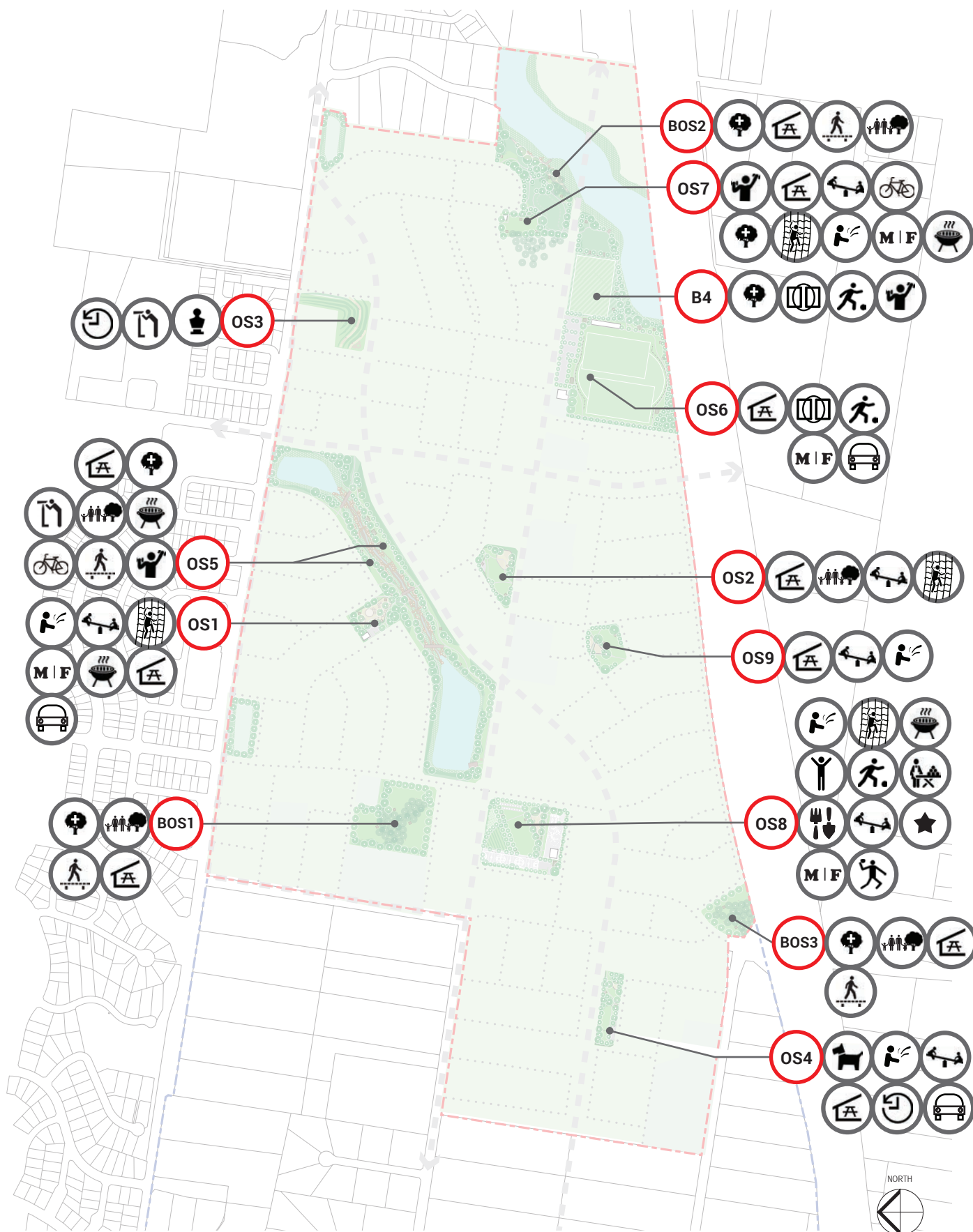


Figure 12 Open Space Framework Diagram

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## 8 ACTIVE TRANSPORT STRATEGY

The Open Space Strategy will provide varied recreational opportunities that reflect emerging trends in sport and recreation. The open space network will provide enhanced experiences for walking, safe accessible cycling and facilities for fitness and play in public spaces with ease of access.

Precinct wide connectivity is crucial in delivering an attractive and successful public domain. Maximising pedestrian and cyclist interaction will enhance the sense of community identity and integrity of the future residents and visitors.

The key features of the network include:

- The creation of a legible pedestrian and cycleway loop (Active Transport Network) that connects key areas of the site and provides access to all surrounding landmarks. The 5km loop extends to all corners of the development site, and will connect people with natural and built amenities including the Claremont Creek, the proposed Village Centre, public artworks and local heritage items.
- Active Fitness zones with dedicated equipment will be located along the pedestrian and cycle network. Outdoor gym equipment promotes healthy lifestyles, instigates community social engagement and is accessible to a wide range of demographics.
- A wayfinding strategy unique to the Orchard Hills development to increase the ease of navigation and highlight distances and walk times to key areas within the precinct.
- Street tree selections that provide larger canopy and/or feature trees that enhance the experience through increased shade.

It is important to note that site approvals, topographical challenges and site access will require further detailed investigations during design development to ensure the feasibility of the Active Transport Network.



### Legend

- Primary Active Cycle Loop
- Secondary Cycle Route
- Fitness Zones
- Area of Interest
- Site Boundary
- Master Plan Area



Figure 13 Active Transport Strategy Diagram

SCALE 1:8000@A4



## 8.1 Open Space Catchments

The placement of open spaces responds to the residential lots present in the Orchard Hills development. Providing accessible, vibrant and purposeful open space to cater to various needs of the community. Proposed connected street networks and active transport links create a walkable neighbourhood structure supported by a connected green streets consistent with 21st century best practice urban design principles.

Orchard Hills open space definitions and provision rates have been aligned with Penrith City Councils standards.

### Legend



-  Local Park Catchment  
(80% residents within 400m)
-  Site Boundary



Figure 14 Open Space Catchment

SCALE 1:8000@A4

## 9 PLAY SPACE STRATEGY

The distribution of play space 'typologies' and facilities has been considered to provide a wide variety and diversity of experiences that respond to the local conditions and future proposed facilities.

The play space hierarchy plan identifies the aspirational play experiences to be included in the open space network and considers all age groups (from high energy, active youth play spaces to younger children and toddler play areas). A dedicated inclusive play space is proposed centrally (near to the proposed higher density living) and multiple nature play focused spaces are located across the development. These nature inspired spaces respond to the existing natural bushland areas and provide a focus on sensory and imaginative play experiences. Six new play spaces have been proposed for the Orchard Hills development:

**Local:** Offering passive and low key recreation opportunities such as seating and landscaping, these play spaces are small in nature and target toddlers and or juniors (0-3 and 3-6 year olds). Play spaces include equipment for toddlers to seniors and may include assets such as seating, shade bins and picnic tables.

**District:** Attracting a wider catchment and located on larger parcels of land also used for other activities such as sport, these playgrounds offer all ages a wide variety of play 'choice' from toddler, to youth, to senior.

**Nature:** Accessible to a broad range of ages, natural play spaces provide children access to irregular and challenging spaces which help them learn to recognise, assess and negotiate risk, build confidence and competence within their environment.

Shade will be considered within all typologies of play space. Shade provision will include a mixture of natural (tree canopy) and built (shade sails or similar) to achieve required sun safety and comfort. Play spaces are to be designed according to NSW Government Everyone Can Play guidelines, Council's Sport and Recreation Strategy and Council's Shade Policy.



### Legend

- ▲ Local play space
- ▲ District play space
- Nature play space
- Open space next to riparian land
- Parks (no play provision)
- Sports fields (no play provision)
- Ecology area (no play provision)
- District Playground Catchment (80% residents within 800m)
- Local Playground Catchment (80% residents within 400m)

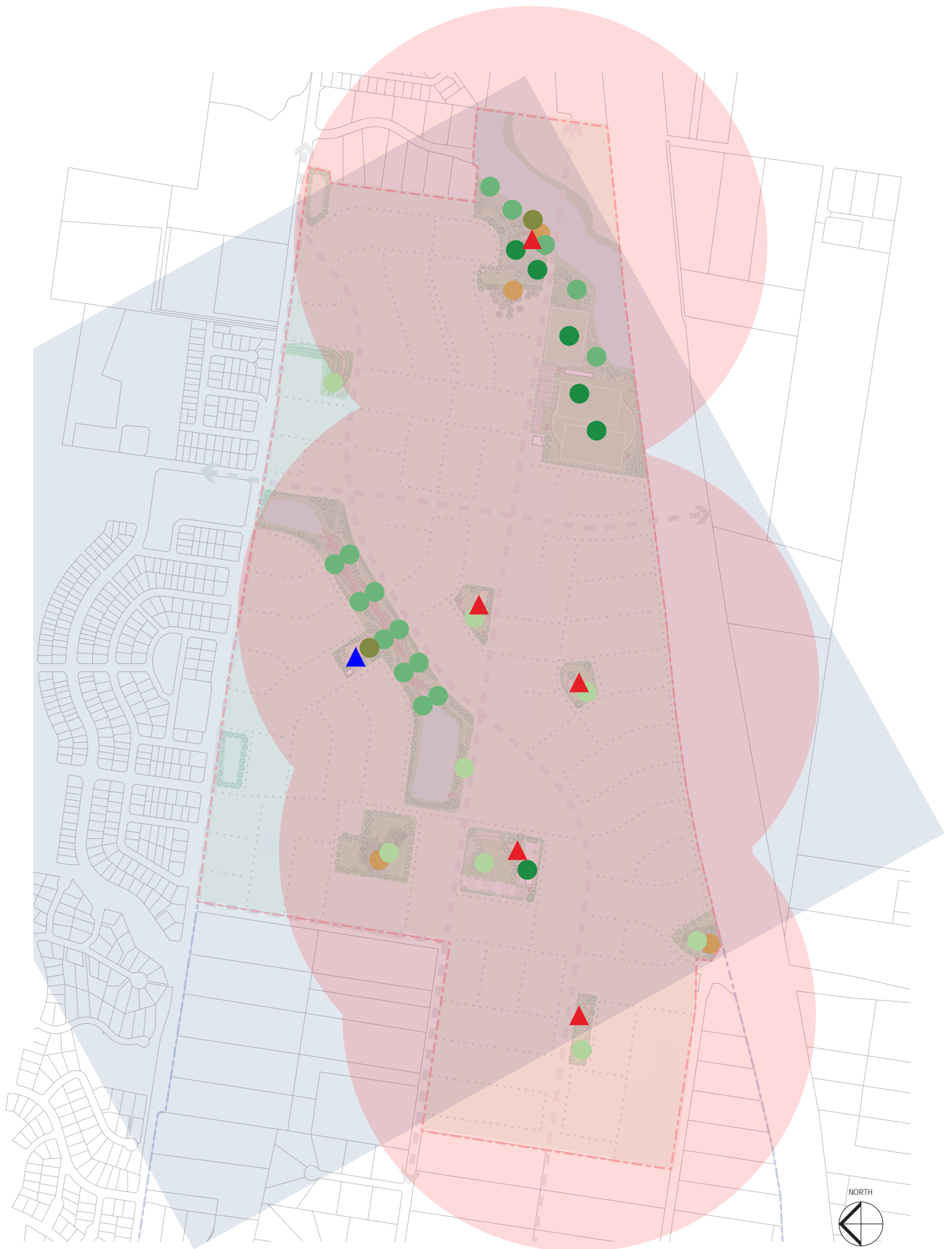


Figure 15 Play Space Strategy Diagram

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