Putney Hill residential development: phase 1

project application:
open space & streetscape landscape proposal



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1.0 BACKGROUND

1.1 Introduction

Redevelopment of the Royal Rehabilitation Centre Sydney (RRCS) site is a significant project that ultimately will incorporate:

- new rehabilitation and disability facilities,
- residential development,
- public and private open space, and
- development and improvement of services and infrastructure.

Frasers Property have acquired the area of the site identified by the previous Concept Plan approval as residential development. RRCS is separately developing a new hospital and rehabilitation centre to the Morrison Road frontage along with the "Recreation Circle" facilities adjoining the hospital to the south. Frasers Property is responsible for the development of the the proposed "Central Parkland" and detention basin.

This landscape proposal relates to the proposed first stage of the residential development and incorporates 116 dwellings, consisting of semi detached houses, town houses, terraces, and apartments. The phase 1 area is located immediately to the north of the proposed "Central Parkland" and detention basin.

This report explains the key landscape values of the site which have influenced site planning and the open space and landscape proposals that have been developed.

The phase 1 area comprises the first stage of an integrated framework of streets and open space. The key elements of this framework as described in this proposal include:

Streets
There are several street types included in the phase 1 scope. These are:

- Minor Collector Road (Road 5)
- Access Road (Road 4, 8, and 16)
- Laneway (Road 12)

Public Open Space
Open space that is accessible by both residents for Putney Hill and the broader Putney community.

Communal Private Open Space
Open space, that will be utilised by local residents on the site.

Private Open Space
Open Space immediately adjoining single, or multiple residences that is primarily used by those residents as possible recreational and visual amenity area.

Drawing LP.00 Landscape Master Plan identifies the varying open space components for the development.

Figure 1: Aerial view of the existing site

Source: Nearmap

1.0 BACKGROUND

1.2 Related Studies / Documents

The preparation of the landscape concepts for Frasers Putney Phase 1 development has occurred concurrently with the following specialist studies:

- Architectural site planning and building typologies (Cox Richardson Architects)
- Town planning (JBA Planning)
- Transport engineering (Colston Budd Hunt & Kafes)
- Civil engineering (Meinhardt)
- Tree Assessment (Urban Forestry Australia)
- Flora & Fauna Report (UBM Ecological Consultants)

1.3 Existing Planning Controls

1.3.1 Commonwealth Legislation

Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth legislation provides a national framework for environment protection through a focus on protecting matters of national environmental significance and on the conservation of Australia's biodiversity.

Where possible open space should reflect environmental protection and enhancement philosophies although where features of environmental significance are present.

1.3.2 State Government Legislation

Environmental Planning & Assessment Act 1979

Determination of Major Project

The RRCS redevelopment project received initial planning consent from the Minister of Planning on the 23rd of March 2006. Consent was given based on a number of conditions including the following which are of most relevance to the landscape component.

Condition B8 Landscape and Public Domain Management

Prior to the lodgement of an initial application for development on the subject site a landscaping and public domain management plan for the subject site will be formalised by the proponent and agreed by the Department, in consultation with Council where appropriate and implemented by the proponent to the satisfaction of the Department, in consultation with Council.

The landscape and public domain management plan will be prepared and undertaken by a suitably qualified person(s) and will provide (but not be limited to):

1) A safe pedestrian environment that seeks to minimise contacts and conflicts with the road network, by providing green linkages / corridors to / from the main open space areas.
2) Open space that is perceived unequivocally by members of the public, by its proper site planning and design, to be welcoming, accessible and inclusive.
3) Well designed engineering functions that do not dominate or alienate the use and enjoyment of open space.
4) Facilities that will attract users to the park, including facilities that normally associates with successful design of open space.
5) Retention of significant vegetation that will enhance the amenity of the development, helping to place the development within its local context.

It is noted that a Landscape and Public Domain Plan was prepared by RRCS prior to this subdivision application

Condition C2 Density and Relationship to Surrounding Community

- The integration of open space, recreational facilities, childcare and community and health facilities with the residential development, to ensure that not only will the newly created communities be sustainable, both socially and environmentally, but that existing residents in the local community will also benefit from the total development.

1.0 BACKGROUND

Condition C4 Landscaping
The proponent will adopt landscaping designs being in accordance with the following principles:

- To create a variety of landscape public open spaces which respond to the existing topography and landscaped features, and are appropriate for the intended purpose of each of open space.
- To create a unique sense of place in different precincts of the development, and landscaping on the collector roads which harmonises with Council's public domain landscape strategies.
- To preserve mature trees and landscaping features.
- To provide shade along pedestrian pathways and streets through the planting of street and park trees. When selecting species, consideration to be given to drought tolerance, winter solar access, summer shade and provision of habitats.
- To provide a high quality, low maintenance suite of street furniture that is located to provide amenity for walkers and park users.
- To provide shade for parking areas so that cars can be parked in the shade - ideally reducing the need for intensive air conditioning.
- To reduce crime in public places by creating safe open spaces that are overlooked by dwellings and that have at least two access points.
- To minimise water usage and maintenance by selecting hardy, drought tolerant native and exotic plants, including those listed on the Sydney Water Plant Selector.
- To reduce environmental weeds by selecting plants that are non-invasive or indigenous.
- To treat stormwater on subject site through landscape techniques such as wetland and planted swales.
- To provide a range of habitats for indigenous fauna including birds and arboreal mammals, insects, reptiles and amphibians through selection of plant species and planting composition.
- To increase water penetration by the use of permeable parking bays.
- To provide accessible paths of travel wherever possible as an integrated part of the open space network.
- To provide a landscape that can be maintained without excessive labour, water or nutrient inputs.
- In the event that approval is given for a wet detention basin, the design to avoid the need for fencing, by maintaining a depth of less than 300mm for the first two metres from the edge of the permanent water line. Plant species along the edges of the detention basin to be selected for the ability to withstand periodic inundation and periods of prolonged drought. Species in areas that will be permanently wet to be selected with consideration given to provision of habitat for birds, frogs and insects.

The proponent will adopt a design philosophy for elements in the public domain, including landscaping and street furniture, which will reflect the character of Putney, to be developed in consultation with Council to the satisfaction of the Department.

The proponent will design the proposed Central parkland area to function as both usable public open space and a stormwater detention basin.

Condition C10 State Environmental Planning Policy Building Sustainability Index (BASIX)

- Landscaping in accordance with the Oculus recommendations with nominated water resistant plant species suited to the Wianamatta Shale soils, and soft landscaping to be minimised.

Local Government Act 1993

The Local Government Act provides the legislative framework for a council's day to day operation. The Act emphasises a council's responsibility to actively manage land and to involve the community in developing a strategy for management. Of particular relevance is the requirement for all council property classified as Community lands to be categorised in accordance with the guidelines for the categorisation listed in the Local Government (General) Regulation (cl.6B-6JA). For lands categorised as Natural Area, specific planning and management strategies are to be provided. Strategies must reinforce and reflect the core objectives for community land listed in the Local Government Act (s. 36E-N).

Water Management Act 2000

The Water management Act aims to provide for the sustainable and integrated management of the water sources of the state. In particular protecting the water sources and associated ecosystems through effective management and ecological sustainable development practises.

The Act identifies the role of Controlled Activity Approvals to replace the 3A Approval process for a specific activity in on or under waterfront land. Separate Aquifer Interference Approvals are to be required where activities involve excavation that may impact on underground aquifers.

2.0 THE SITE

The following site landscape appraisal is provided for the Frasers Putney site overall with specific issues related to the stage one area highlighted. Images this page focus on the phase 1 area.

Victoria Road frontage

2.1 Context

The overall site covers an area of approximately 16ha and has its major street frontage at 600-640 Victoria Road, Ryde. The site is bounded by Victoria Road to the north-east, Charles Street to the east, Morrison Road to the south-west, and Princes Street to the west. The Charles Street frontage comprises and entry road along with landscape curtilage, with the majority of the frontage being formed by the Putney Village (south) and existing residences (north).

The Putney Hill development comprises the majority of the site. The balance of the site will be the replacement of the RRCS facility which will also comprise the Central Parkland, Wetland, Recreational Circle and the Rehabilitation Centre facilities to the southern corner of the site. It is bordered by existing residential properties to the east, and the existing retirement village to the south. Refer to the Overall Landscape Plan drawing LP.00-04

View from stage 1 area to Weemala

2.2 Geology and soils

The Ryde area is generally typified by Hawkesbury Sandstone geology, overlaid with Wianamatta Shale. The site has been subject to a reasonably high degree of modification with the present landscape condition and topography suggesting that the existing soils are primarily clay based.

Existing Fig trees desirable for retention

2.3 Topography & Drainage

The topography of the site is varied, with several zones of intense grade up to 1(v):5(h). This is particularly evident to the areas extending down from the corner of Prince Street and Morrison Road, and in the phase 1 area to the north from the Central Parkland detention basin.

The existing stormwater detention basin is the focus for stormwater movement from both the northern and southern slopes of the site. The basin also receives overland flow and piped drainage from adjoining residential areas to the west and north west.

The phase 1 area slopes steeply to the south / south west creating which creates a number of challenges for access provision but at the same time affords a number of opportunities related to qualities of public and private space, views, and solar access. The phase 1 area is typified by a 14 metre change in levels from north to south and an average slope of 1(v):10(h).

Existing trees to west boundary desirable for retention

2.4 Access

Access is currently focused to entrances from Charles Street, Morrison Road and Victoria Road. The existing access is generally oriented towards vehicles via the adjoining and internal road network. Pedestrian access is ill defined due to a lack of formalised footpath provision. Redevelopment of the site should focus on increasing pedestrian accessibility and amenity through increased footpath provision, and greater accessible public open space.

The level changes to be negotiated in the phase 1 area, will mean that universal access will be balanced against such factors as likely usage and visual impact and will be focussed to key routes.

2.5 Vegetation & habitat

This landscape report draws upon several investigations in the development of vegetation management strategies. An initial Landscape Report prepared by Oculus in 2005 identified the following:

"Benson and Howell (1990) suggest that the Ryde area would have supported a Turpentine-Ironbark Margin Forest - a sub-community of Sydney Turpentine-Ironbark Forest (STIF) currently listed as an endangered community in the Threatened Species Conservation Act. The site has been almost completely cleared in the past and the fieldwork undertaken sighted only two trees that could be presumed to be from this community and are large enough to be considered remnant individuals."

Investigations undertaken over the last 2 years include several inspections and related reports by Urban Forestry (Arborists) to identify tree conditions and significance, and a Flora & Fauna Impact Assessment which was undertaken by UBM Ecological (2011). The UBM Impact Statement identified several broader areas of vegetation it says are beleived to be STIF within the broader former RRCS Putney site, whilst no threatened flora species were identified. Three fauna habitat types were identified with all being assessed as having 'low value'. The Impact Report makes a number of recommendations which the landscape concept has consisered;

- potential retention of groups of trees indentified as being possible STIF remnants - noting however that most of these trees were not identified in the Urban Forestry arborists assessment as being significant based on condition,
- relocation of existing hollows to proposed significant areas of open space,
- maximising proposed open space tree & shrubspecies as STIF community species,

The UBM arborists assessment was undertaken in October 2007 and supplemented in October 2010 to evaluate condition and life expectancy of existing tree canopy, and to provide a tool to guide site planning and development.

Within the phase 1 area the 2010 update identified Arborcultural parameters for sustainable tree retention including critical root zones.

Figure 2 produced by Urban Forestry (opposite) was considered in site planning in order to maximise benefits of tree retention. Refer to section 3.2 for proposed Tree Retention and Removal. Trees targeted for retention are based on both current condition and landscape significance in terms of visual quality, scale , and potential contribution to the public domain. Further to the trees potected and retained, a number of trees have been identified for transplanting within the new open space areas (refer to section 3.2).

An additional assessment of proposed tree retention was also undertaken by the Arborist as part of this submission to verify construction protection zones on the trees being retained.

2.0 THE SITE

Figure 2: Tree management recommendations 2010
Source: Urban Forestry Australia

3.1 Objectives

Planning objectives as set out in Condition B8 of the Determination of Major Project, under the Environmental Planning and Assessment Act include:

1) A safe pedestrian environment that seeks to minimise contacts and conflicts with the road network, by providing green linkages / corridors to / from the main open space areas.
2) Open space that is perceived unequivocally by members of the public, by its proper site planning and design, to be welcoming, accessible and inclusive.
3) Well designed engineering functions that do not dominate or alienate the use and enjoyment of open space.
4) Facilities that will attract users to the park, including facilities that normally associates with successful design of open space.
5) Retention of significant vegetation that will enhance the amenity of the development, helping to place the development within its local context.

In keeping with these overarching objectives, development of the concept design for the Frasers Putney phase 1 development has focused on a number of specific design objectives.

Variety of open space
Provide open space that enables a range of functions and usage. Fundamental to the variety of open space is creating spaces that are utilised and enjoyed by the adjoining residents and the greater community by offering a diversity of open space and recreational experiences.

Site responsiveness
Provide open space that responds to existing site qualities, and continues to reflect and contribute to the character of the surrounding area.

Accessibility
Given the context of the site and the potential for use by disabled or less mobile users, an overall approach to providing disabled access wherever possible has been adopted. In addition the development aims to optimise accessibility of informal public open space to adjoining streetscapes and related communities. This objective is realised with consideration of the constraints of the site in relation to existing steep grades.

3.2 Guiding Design Principles

The following parameters outline key principles that inform design development across the site, and for the Frasers Putney phase 1 development.

Landscape Character / Public Domain
Landscape design will seek to integrate the development with adjoining public domain. This aims in particular to provide a sense of continuity to adjoining streetscapes that will encourage broader public access and use of public spaces.

Ryde Council has recently developed a Public Domain Strategy for Ryde Town Centre and is exploring proposals for other town centres within the LGA. The aim is not to definitively design public domain but to establish a coordinated fabric of materials and design finishes and to identify specific opportunities for public domain enhancement both functionally and aesthetically. Putney Village aligns closely with

3.0 DESIGN PRINCIPLES

Ryde Town Centre in terms of locality, but will reflect a secondary hierarchy of design and materials finishes.
Recent footpath widening works to Charles Street have integrated quality clay pavement and will incorporate coordinated street furniture. Ryde town centre is implementing a granite pavement as the highest level surface to major streets and concrete or asphalt with granite banding to secondary streets.

It is proposed that the Putney village public domain fabric is extended through the Putney Hill development including:

Pavements
- use of matching clay pavement to nodal locations in streetscapes and within parks as accent or design feature
- use of concrete paths to general internal footpaths and pavements

Furniture
- use of "Botton & Gardiner" seating bins and bollards to parks and courtyards as per Council's street furniture palette

Lighting
- any use of pedestrian pole top lighting to match Ryde Council works to neighbourhood centres (type to be confirmed)

Tree Planting
- integration of street tree species themes that provide linkages to surrounding streetscapes and existing on site plantings - the Ryde Public Domain Strategy provides a comprehensive basis for street tree and understorey planting.

The objective of this coordinated approach is to ensure that street and footpath pedestrian entries from Charles Street, Morrison Road, and Victoria Road visually present as continuing street themes, and provide a cue for continuation of public access and use that can be reinforced by signage.

Access
Of importance to the function of public open space is its accessibility to the broader community, linking the immediate context of the space (often a new development) to its surrounding context. Key cycle routes of relevance to the Frasers Putney phase 1 site include:
- Parramatta River foreshore off road cycle track and pedestrian path (south via Charles Street);
- Morrisons Bay / Buffalo Creek off road cycleway (east via Parramatta River foreshore off road cycle track, or Victoria Road);
- North Road on road link to north west (from Morrison Rd at Princes Street).

Cycle connections linking to these routes should be reinforced where possible through cycle friendly design which may include cycle racks etc.

Within Putney Hill, gradients preclude code compliant cycle access links from north to south. Pathways to verge areas can cater for shared family cycle (off road) links through the development while the low speed local road environment will cater for recreational and commuter cycle access to the external on road system. Facilitating desirable connections includes the linking of the internal public open space (and private residences) to the street based pedestrian path system and on road cycle access, and then beyond the site to the broader pedestrian and cycle access network, including the unmarked cycle path along Charles Street.

3.2 Guiding Design Principles

As noted in landscape Character / Public domain it is important that the connections to public street promote the legibility of public accessibility through continuation of pavement themes and those of other streetscape elements.

Crime Prevention Through Environmental Design (CPTED)

The design of the landscape aims to provide attractive open space experiences that consider the safety and security of its users. There are four CPTED principles that have been considered to minimise the opportunity for crime:

- *Surveillance*
  Clear sightlines between spaces including public and private interfaces have been established. Native grasses have also been proposed to a number of areas that provide an attractive landscaped environment, but also allow clear sightlines as the planting is low in height.
- *Access control*
  The public open space areas have been designed to encourage use by the local and wider community, providing a well used open space that deters crime.
- *Territorial reinforcement*
  It is envisaged that the local community will maintain a sense of community ownership over the open space areas, and will gather and enjoy the recreational and visual amenity provided, again deterring opportunities for crime. Public ownership of open space areas has also been promoted by utilising Council's palette of furniture and other material treatments.
- *Space management*
  The open space areas aim to provide for recreational opportunities as well as being attractive spaces that are both well maintained and well used by the community.

Major Blackbutt specimen near Victoria Road to be conserved

Existing Palm and Podocarpus specimens on existing entry avenues to be transplanted into stage two open space areas

Vegetation Management

Existing vegetation is seen as a key site attribute providing immediate amenity and contributing to landscape function (eg. shade, screening), visual character and environmental values. Significant specimens will be integrated into the design scheme wherever possible, as a key design consideration. New plantings will also aim to enhance and continue existing vegetation patterns, in terms of species selection and location. The tree assessment undertaken by Urban Forestry Australia identified five categories of existing trees on site based on arboricultural and ecological significance, health and life expectancy.

The phase 1 development requires that approximately 204 trees are removed to facilitate construction over 50% of which were assessed as "trees that are stressed or damaged and / or have poor form or structure. 70 existing trees through the phase 1 area are retained and protected with 54 proposed to be transplanted within the development. Refer to Figure 4 opposite.

Approximately 230 new trees are proposed for planting within open space areas and streetscape planting throughout phase 1 equating to a neutral impact on tree numbers. Of new tree plantings 90% are native species.

Existing Fig specimens to be transplanted into stage two open space areas

4.0 DESIGN PROPOSALS

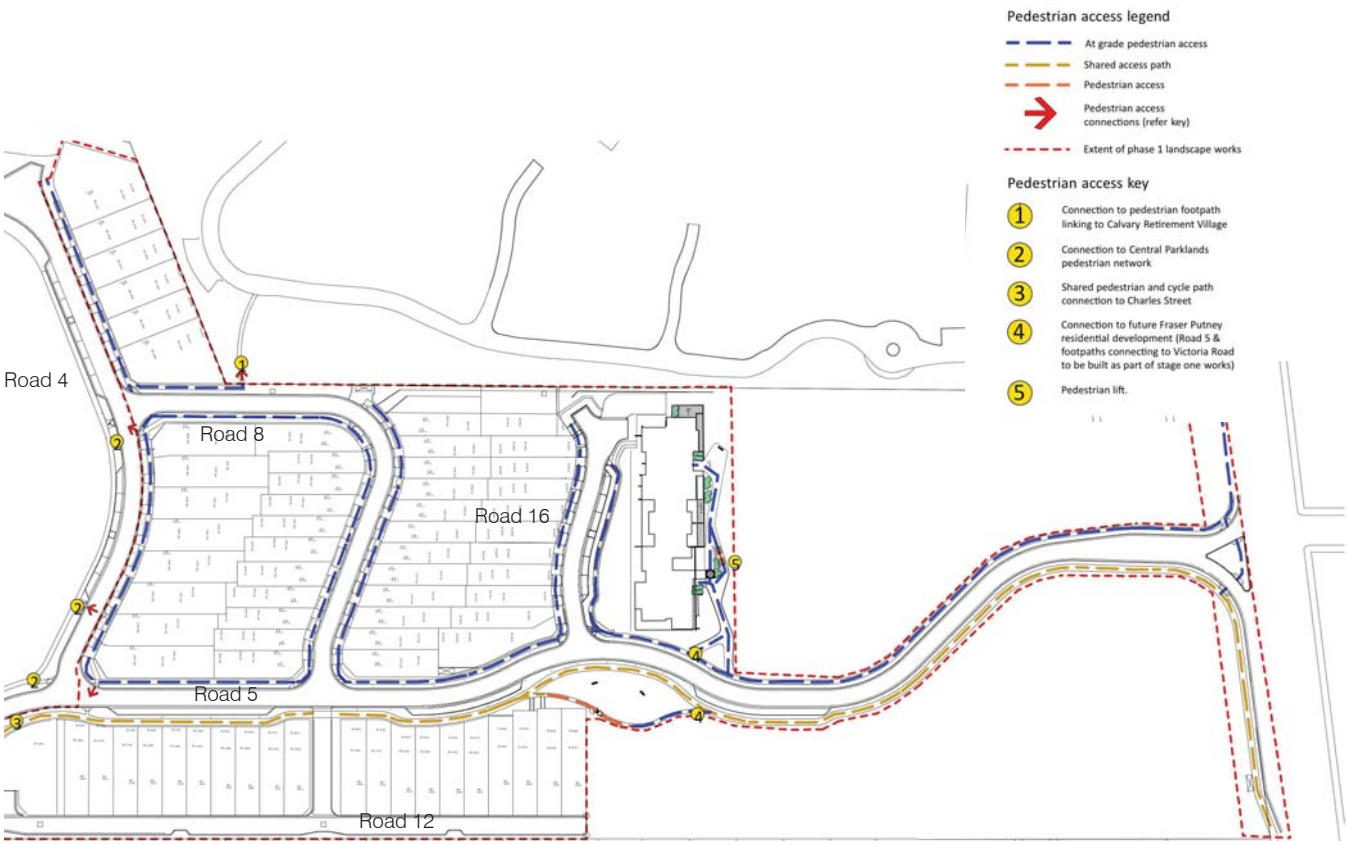

Figure 3: Access

Figure 4: Tree Retention / Removal

4.1 Generally

The development of landscape concept design proposals for the phase 1 area address the key principles as indicated of Figure 4 below. These include:

Open Space

- The central parkland open space is the focal public open space for the new community.
- An open space integrated a raingarden basin and adjoining a number of existing trees provides and open space / landscape link from the centreal Parkland to Church Street
- A series of open spaces which provide for communal use by residents, pedestrian linkages, and green landscape character occur across the site. Where possible these integrate existing trees
- A landscaped buffer to Calvary Retirement Village to the western boundary

Access

- The street system promotes public access through the site supported by key pedestrian links through open spaces.
- Access is focussed on legible and logical links that can also add to the recreational experiences of the public domain.
- Public entries to Frasers Putney will optimise and reinforce connections from adjoining areas through pavement and other streetscape treatments in keeping with Ryde Council's Public Domain Strategy.
- A through avenue links from Victoria Road to Church Street integrating a shared access path. Evergreen tree canopy marks this route and reduces the visual scale of the road corridor

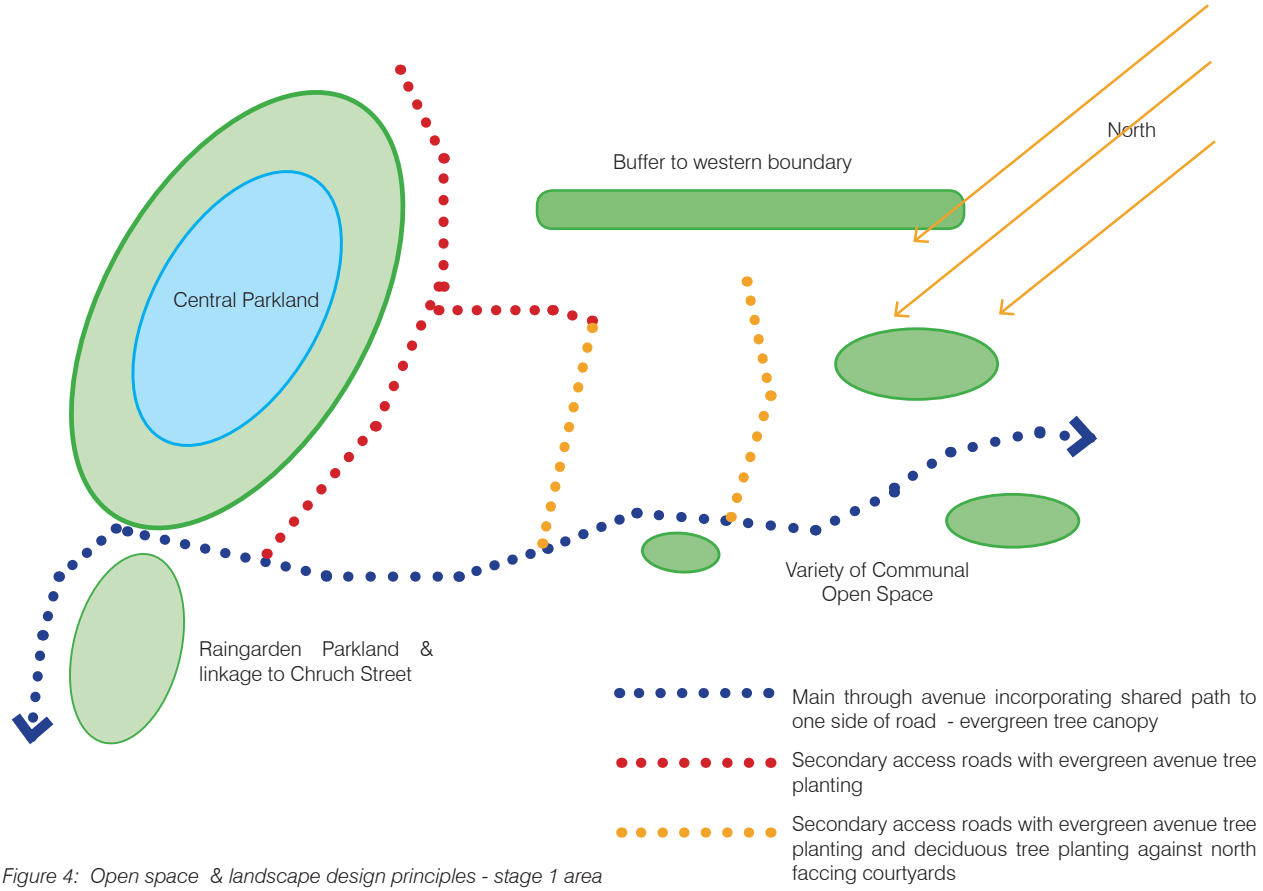

Figure 4: Open space & landscape design principles - stage 1 area

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- Secondary road access with medium scale evergreen tree canopy provide access to residences - where north facing courtyards occur deciduous tree canopy is integrated

Scenic Amenity

- Several key existing plantings will be protected and retained as key building blocks for the landscaped character if the site. In additional several Fig, Frangipani, and Canary Island Date Palm specimens will be transplanted to new locations on site
- Provision of extensive new tree plantings integrated with retention where possible of significant existing trees will provide an attractive landscape setting.

Environmental and Recreational Amenity

- A variety of open space characters aims to ensure that a variety of visual and recreational experiences are offered.
- Open space is sited to take advantage of existing topography, views, and tree canopy. Where possible existing established trees will be retained to continue the environmental and visual amenity provided and also offer instant landscape amenity including shade to open space areas.
- New plantings will further consolidate a predominantly native vegetation character for the development overall.
- Targeted use of deciduous plantings will be incorporated to provide seasonal amenity and visual display.

Sustainability

Ongoing design development will have regard for the following principles of environmentally sustainable design.

Planning and design

- Conserve valuable resources (eg. Light-weighting) and avoid waste
- Use recovered or recycled content materials where practical
- Minimise / eliminate water usage and reduce reliance on mains supplies
- Use low or non-toxic materials to reduce impacts on the environment
- Maximise the recovery of components and materials at end-of-life.

Materials

- Reuse demolition components materials or recycled content materials that can meet required engineering specifications
- Source materials locally to reduce transport impacts and support the community
- Use materials that have a lower environmental impact

Fabrication

- Use prefabricated structures or fabricate components off-site where possible
- Build bulk quantities of structures / components if practical
- Use techniques that maximise recovery at end-of-life (eg. screwing not nailing)
- Use contractors with a proven track record of minimising environmental impacts

Construction

- Keep construction sites as small as possible and manage it carefully
- Use environmentally friendly construction techniques
- Minimise material and vehicle movements on and off the site
- Use contractors with a proven track record of minimising environmental impacts

Maintenance

- Implement and monitor maintenance schedules to maximise the structure's life
- Fix things before they break or as soon as a problem is identified

Disposal at end-of-life

- Maximise the quantity of materials recovered at end of life
- Reuse whole components initially moving through to the raw material (eg. Fill, crushed concrete)

4.2 Streetscape

Generally
Streetscape planting incorporates street trees, verge treatments, and buffer plantings adjoining building frontages that address the street. The streetscape component of the landscape is important in establishing an attractive and appealing public domain and to enable access through the site in an environment of high visual and physical quality.

The phase 1 development does not include a direct link to existing public streets as part of its scope, however it will link to the Charles Street entry being formalised and extended as part of existing approvals related to the RRCS redevelopment and Central Parkland, and the future Victoria Road link in ongoing stages of Putney Hill.

The streetscape character of adjoining public domain must fundamentally be considered in landscape design of the internal streetscapes to the development.

Existing Streetscape Character
Victoria Road
The dominant element of the Victoria Road frontage is the existing Canary Island Date Palm avenues, which includes an entry avenue to the RRCS site. Planning of ongoing development stages will consider the role of these plantings and relationship with other desirable planting for buffer purposes to the Victoria Road frontage. Potential for transplanting of these specimens within the ongoing development stages will be examined.

Morrison Road
The Morrison Road frontage is typified by several varied characters ranging form the intermittent / nodal mature trees on the hilltop adjoining the existing Weemala complex, the central zone typified by major plantings adjoining the frontage including a significant Fig specimen, and a selection of Brushbox species to the eastern half of the frontage, and thirdly the hospital redevelopment zone adjoining the Putney Village Centre which is currently open and utilitarian in character. The new hospital development will present a contemporary built form and improved landscape frontage to Morrison Road

Charles Street
Charles Street is typified by detached resideintial housing with very limited street tree canopy afforded some character by the roads undulating and sinuous alignment in the north. Private gardens provide the main contributions to streetscape as a "barrowed" landscape with the exception of church grounds to the hilltop . The existing Tallowwood and scattered Brushbox plantings to the entry road off Charles Street are important landscape elements. These are retained in the Central parkland development phase by Frasers Putney.

Princes Street
Likewise Princes Street is characterised by limited street tree canopy.

Proposed Streetscape types
The landscaping of internal streets responds to several factors:

- their access role for vehicular and pedestrian movement
- their relationship to built form and private and public space
- consideration of related scale and solar access issues
- creation of a legible typology that supports the street hiearchy of the new development and recognises the context of surrounding streets

4.0 DESIGN PROPOSALS

Proposed Streetscape types

The phase 1 development area requires the development of three street types:

1. Minor Collector Road (Road 5)
2. Access Road (Roads 4, 8, 16)
3. Laneway (Road 12)

The approach to these is described in the table below and the cross sections on the following page.

Location / Use	Character	Species	Comments
Minor Collector Road main north south Link Road between Victoria Road to Charles Street entries	Optimise the retention of existing Fig specimens through their nodal use along local road - where space allows. Spotted Gum as a continuous avenue provide a tall robust evergreen canopy that has strong local context.	West side: Spotted Gum *Corymbia maculata* East side: Spotted Gum *Corymbia maculata*	Spotted Gum will establish a strong visual avenue through the site to the main access road. Being tall with an open canopy they will have a strong visual impact on the street without adversely affecting street lighting. Spotted Gum occurs commonly through the Ryde Local Government Area.
Access Road Loop residential access roads providing access to residential garages and basement carparking	The predominantly east west streets run along contours with built form to the north and south stepping down the site. Streetscape to recognise: • overshadowing of south facing private space • desirability of solar access to north facing spaces • the need for tree canopy to counteract scale of adjoining buildings • views from south facing terraces / balconies	Road 4 / 8 Nth side: Water Gum *(Waterhousia floribunda)* Road 4: South side: Smooth Barked Apple *(Angophora costata)* Road 8 South side: Chinese Elm *(Ulmus parvifolia)*	Water Gum are proposed as a smaller, attractive, compact native tree to reflect the secondary nature of the access roads and pathways. Tree plantings will generally reach 10m height on average which can be located to balance views with other objectives Tree plantings within park edge Deciduous species options are proposed that will enable protection of winter solar access to north facing courtyards The integration of evergreen and deciduous plantings will ensure green relief at atll seasons and promote an individual character

Generally the road verges will be handed over to Council for ongoing maintenance with the exception of Road 12 which will be maintained by Community title.

4.2 Streetscape

Proposed Streetscapes

Spotted Gum

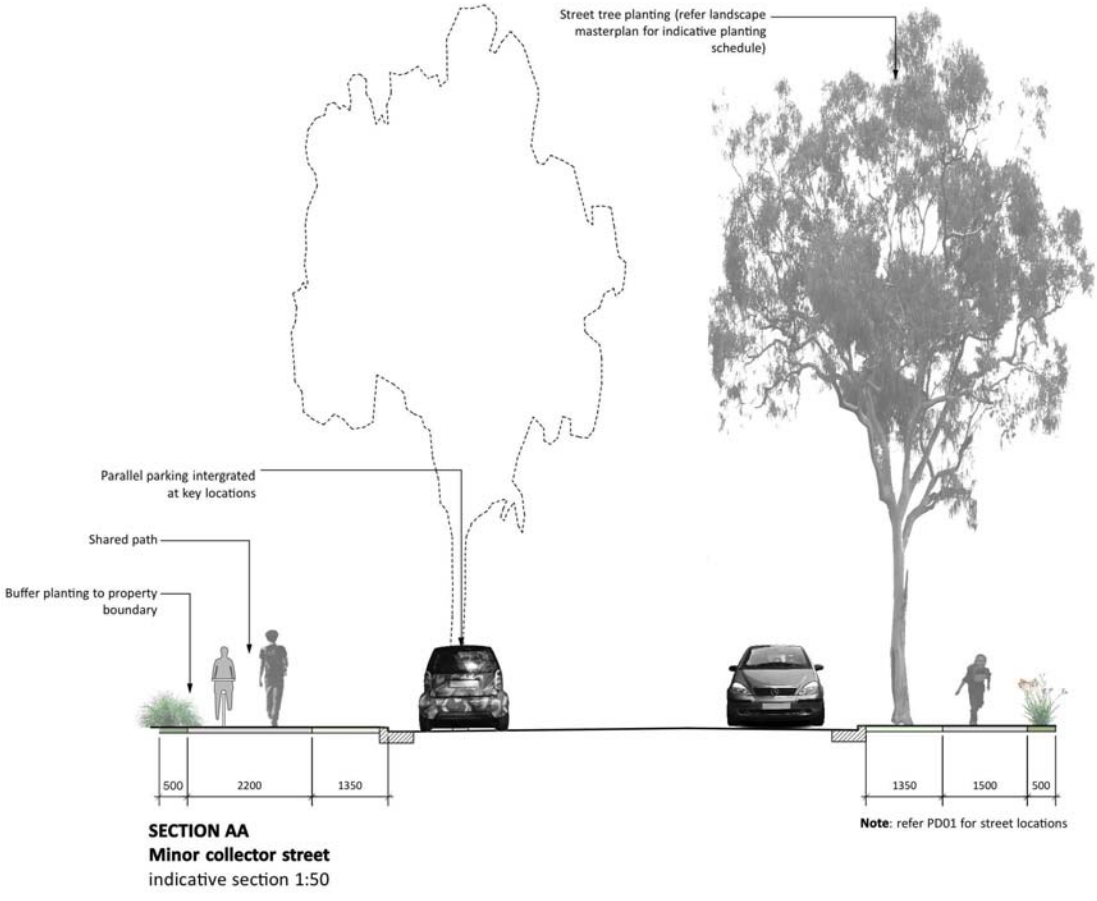

Figure 6: Typical Minor Collector Road (Road 5) streetscape - incorporating small parkland open space

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Water Gum

Tuckeroo

Chinese Elm

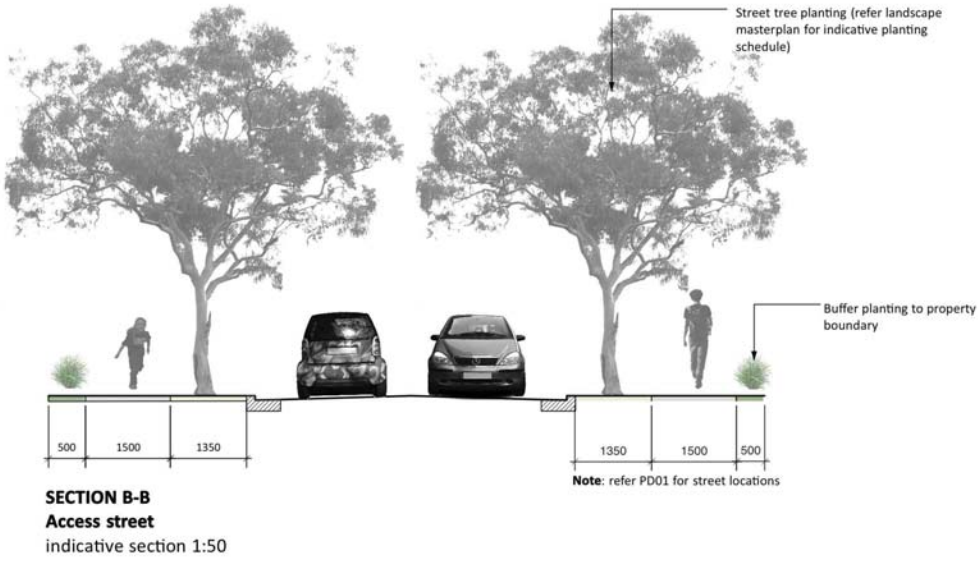

Figure 7: Typical Access Road (Road 4,8, 16) streetscape

4.2 Streetscape

Proposed Streetscapes

Location / Use	Character	Species	Comments
Laneway private road access to detached housing parking along eastern boundary	Private access road with overhanging tree canopy set back from boundary	Lilly Pilly "Acmena smithii" Scribbly Gum *(Eucalyptus haemastoma)* Dwarf Lill Pilly *Syzigium "Bush Christmas"*	Optimise amenity of adjoining existing residences by setting tree canopy back from boundary to maintain solar access whilst providing a visual and buffer to new detached housing. The access driveway road will be screened from existing rear yards by boundary fence and a narrow garden bed hedging with shrubs 2.5-3m high

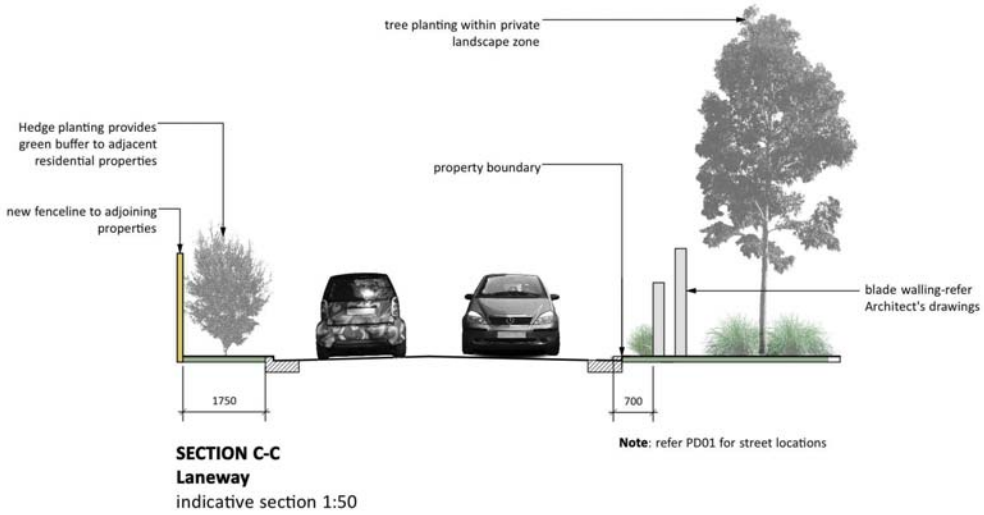

Figure 8: Typical access driveway (Road 12) landscape - section

Figure 8: Aerial view of eastern boundary - phase 1 area Source: Nearmap

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Figure 9: Victoria Road Frontage

4.3 Open Space

1 Pedestrian link open spaces

The first stage of apartment housing adjoining Road 12 will have pedestrian access from the north side which will form part of future communal open space.

The pedestrian link addresses a number of objectives:

- provides a pleasant landscape setting for a an important access link between the first stage (and future stage apartment housing with the Central Parkland and beyond to Putney Village
- provides a break in built form that reduces massing of buildings and integrates further greenspace to built fabric
- affords visual links between open spaces
- provides incidental sittting areas in combination of sun and shade

It is proposed that where the link space intersects with the roads, that paved and landscaped spaces will open up and will contain some seating, signage etc.

The access links will provide for at grade access across and down the site.

Flanking the building walls adjoining the spaces will be gully type landscape that takes advantage of the cooler shaded environment, and provides a varied experience to that of the formalised parkland open space. Typical plant species are indicated in section 4.5 Public Open Space Planting

Trellis planting frames are provided at key locations along the building frontages where garden bed width allows less substantial planting, softening the impact of the built form adjoining the space.

The access link spaces will be maintained by the development Community Association (CA).

Examples of similar landscape outcomes

4.0 DESIGN PROPOSALS

Figure 10: Pedestrian link open space

4.3 Open Space

2 Extended street frontages / landscapes

At various points along the minor collector road (Road 5) through the stage 1 area localised widenings in the street frontage landscape will be provided.

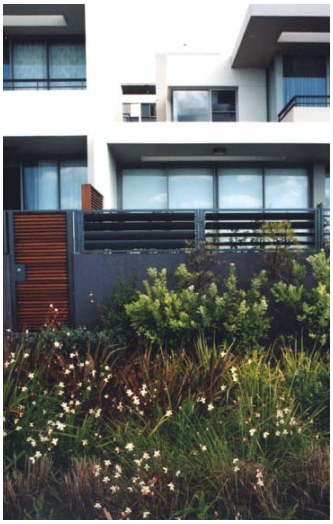
The widenings address a number of objectives:

- provide for retention of key existing tree specimens
- provide for variation and diversity in the street scene
- allow for integration of electrical sub stations
- can provide opportunities for seating

These nodes will visually punctuate the journey along Road 5 and enhance the landscape setting of the new community.

The Widened street frontages / landscapes will be maintained by the development Community Association (CA).

Existing Fig specimens to be retained - which are focus of proposed widened landscape frontage adjoining Road 5



Widened frontages will enable landscaped buffers to the street in selected locations

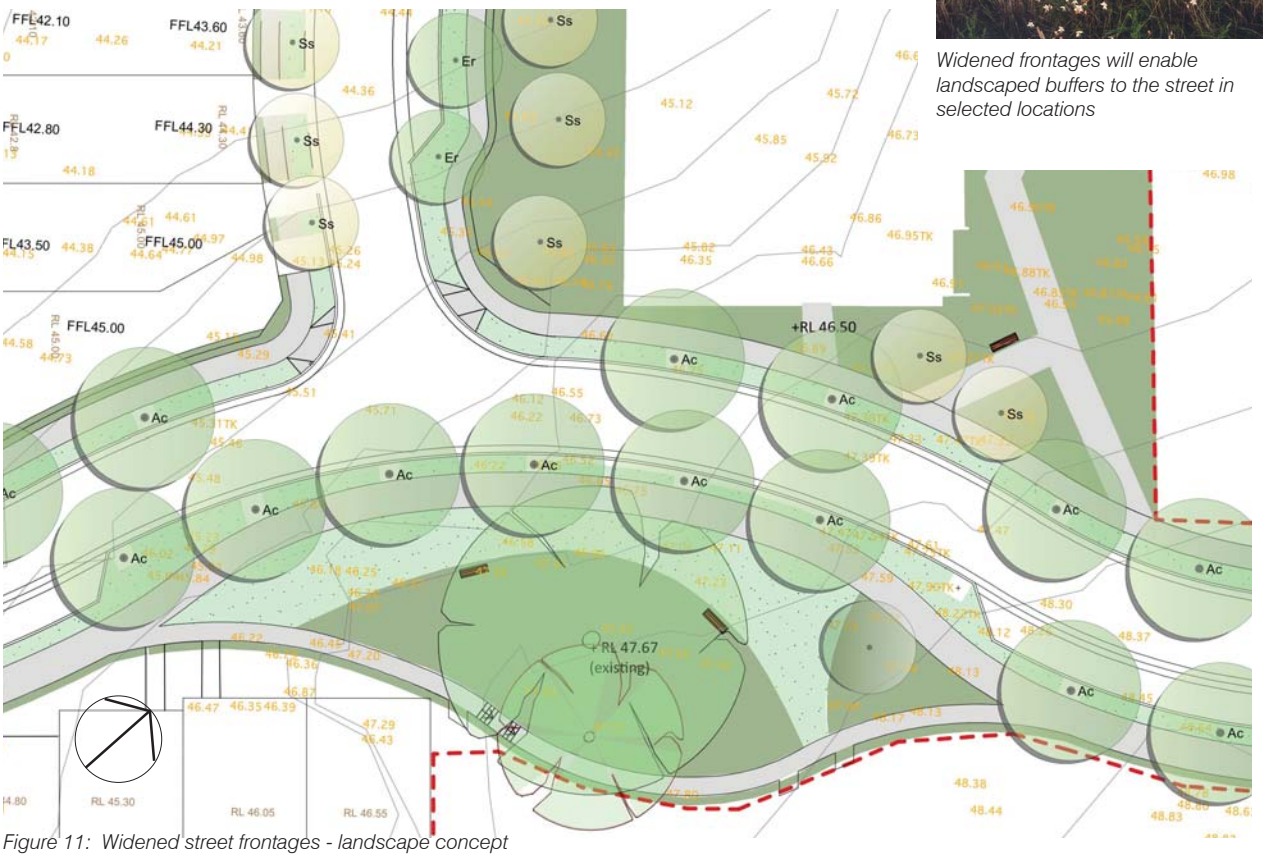


Figure 11: Widened street frontages - landscape concept

4.0 DESIGN PROPOSALS

Existing mixed native tree canopy to western boundary north of the stage 1 area

3 Western boundary

A landscaped buffer will be provided along the western boundary of the site. To the phase 1 area an existing buffer of primarily native species adjoins the site will be reinforced with understorey and infill planting where appropriate.

Additional planting will reflect site indigenous native species, in effecting a gully type character od dense evergreen canopy and understorey.

The communal space will be maintained by the development Community Association (CA).

Figure 12: Aerial view of the existing site Source: Nearmap

4.4 Public Open Space Planting

The table below outlines the broad planting scope proposed for use in the public open spaces outlined earlier in this report.

BOTANICAL NAME	COMMON NAME	MATURE HEIGHT	MATURE SPREAD
OPEN SPACE PLANTING			
Trees			
Angophora costata	Smooth Barked Apple	15.0	10.0
Elaecarpus reticulatus	Blueberry Ash	8.0	4.0
Eucalyptus globoidea	White Stringybark	25.0	12.0
Eucalyptus punctata	Grey Gum	20.0	6.0
Ficus hillii	Hills Weeping Fig	15.0	10.0
Lophostemon confertus	Brushbox	20.0	10.0
Melalecua decora	White-Feather Honey Myrtle	8.0	4.0
Sapium sebiferum	Chinese Tallowood	8.0	8.0
Syncarpia glomulifera	Turpentine	15.0	8.0
Shrubs			
Acacia falcata	Sycle leaf wattle		
Acacia parramattensis	Parramatta Green Wattle		
Bursaria spinosa	Blackthorn		
Dodonea triquetra	Common Hopbush		
Pittosporum undulatum	Mock Orange		
Melaleuca nodosa	Ball Honey Myrtle		
Native Grasses			
Carex appressa	Carex		
Hardenbergia violacea	Native Sarsparilla		
Lomandra longifolia	Lomandra		
Lomandra longifolia '*Tanika*'	Tanika		
Lomandra longifolia '*Nyalla*'	Nyalla		
Philydrum lanuginosum			
Themeda australis	Kangaroo grass		
Turf			
Sydney Soft Leaf Buffalo			

Trees

4.0 DESIGN PROPOSALS

Shrubs

Acacia falcata

Acacia parramattensis

Bursaria spinosa

Dodonea triquetra

Pittosporum undulatum

Melaleuca nodosa

Native Grasses

Lomandra longifolia

Lomandra 'Katrinus'

Lomandra 'Nyalla'

Carex appressa

Philydrum lanuginosum

Themeda australis

4.5 Private Open Space

Generally
Private open space is broadly categorised under the three development types:

- Apartments
- House Type 1 - “The Dress Circle” - Detatched houses
- House Type 2 - “The Row” - semi-detached houses
- House Type 3 - “The Chaddock” terraces
- House Type 4 - “The Squire” terraces
- House Type 5 - “The Tirrell” terraces

Design of the landscaped spaces for each must consider the varying spatial, and physical qualities and relationship with internal spaces and functions.

4.0 DESIGN PROPOSALS

4.5 Private Open Space

Examples of similar landscape outcomes

House Type 1 - "The Dress Circle" - Detached houses

Stand alone house blocks are located adjoining the Central Parkland on Road 4.

The houses step up the site to the north with the frontage to Road 4 incorporating driveway access to garaging and the pedestrian entry to the house. The driveway narrows at the boundary to maximise the landscaped frontage presented to the street. The house entry is accessed from both a path from the driveway, and a stepping stone link from the verge footpath. Garbage bins are accommodated in an enclosure within the house accessed from the side path to the house.

Fencing to 900mm is provided along the side boundaries of the frontage.

A north facing courtyard adjoining the living spaces of the house is provided. A hard surfaced area adjoins the building with grassed space beyond. A generous planted zone is provided between House type 1 and 3. This zone is generally sloping to absorb part of the level change between the houses. The side boundary of the courtyards is also adjoined by garden bed.

An external drying area will be available in this courtyard

Typical planting species may include:

BOTANICAL NAME	COMMON NAME	HEIGHT AT MATURITY	SPREAD AT MATURITY
Trees			
Pyrus calleryana	Chanticleer	11.0m	3.0m
Magnolia Gradiflora	Little gem	6.0m	3.0m
Elaeocarpus eumundii	Smooth Leaved Quandong	8.0m	4.0m
Shrubs			
Acanthus mollis	Oyster plant	0.8m	0.5m
Acmena smithii	Goodbye sunshine	3.0m	1.5m
Alipinia caerulea	Native ginger	3.m	1.5m
Alipinia zerumbet	Shell ginger	3.00m	1.5m
Arthropodium cirratum	renga lily	0.80m	0.5m
Buxus microphylla	Japanese box	0.90m	0.9m
Ctenanthe setosa	grey star	0.90m	1.2m
Philodendron xanandu	Xanadu philodendron	0.80m	0.8m
Syzygium australe	'Resilience'	3.00m	2.0m
Viburnum odoratismum	Sweet viburnum	3.00m	3.0m
Yucca elephantipes	Spineless Yucca	2.00m	1.2m
Groundcovers			
Anemone x hybrid	'Honorume jobert'	0.5m	0.6m
Ajuga australis	austral bugle	0.3m	0.5m
Gardenia radicans	Gardenia augusta 'Radican	0.3m	0.6m
Liriope muscari	Evergreen giant	0.5m	0.7m
Turf			
Sydney Soft Leaf Buffalo			

4.0 DESIGN PROPOSALS

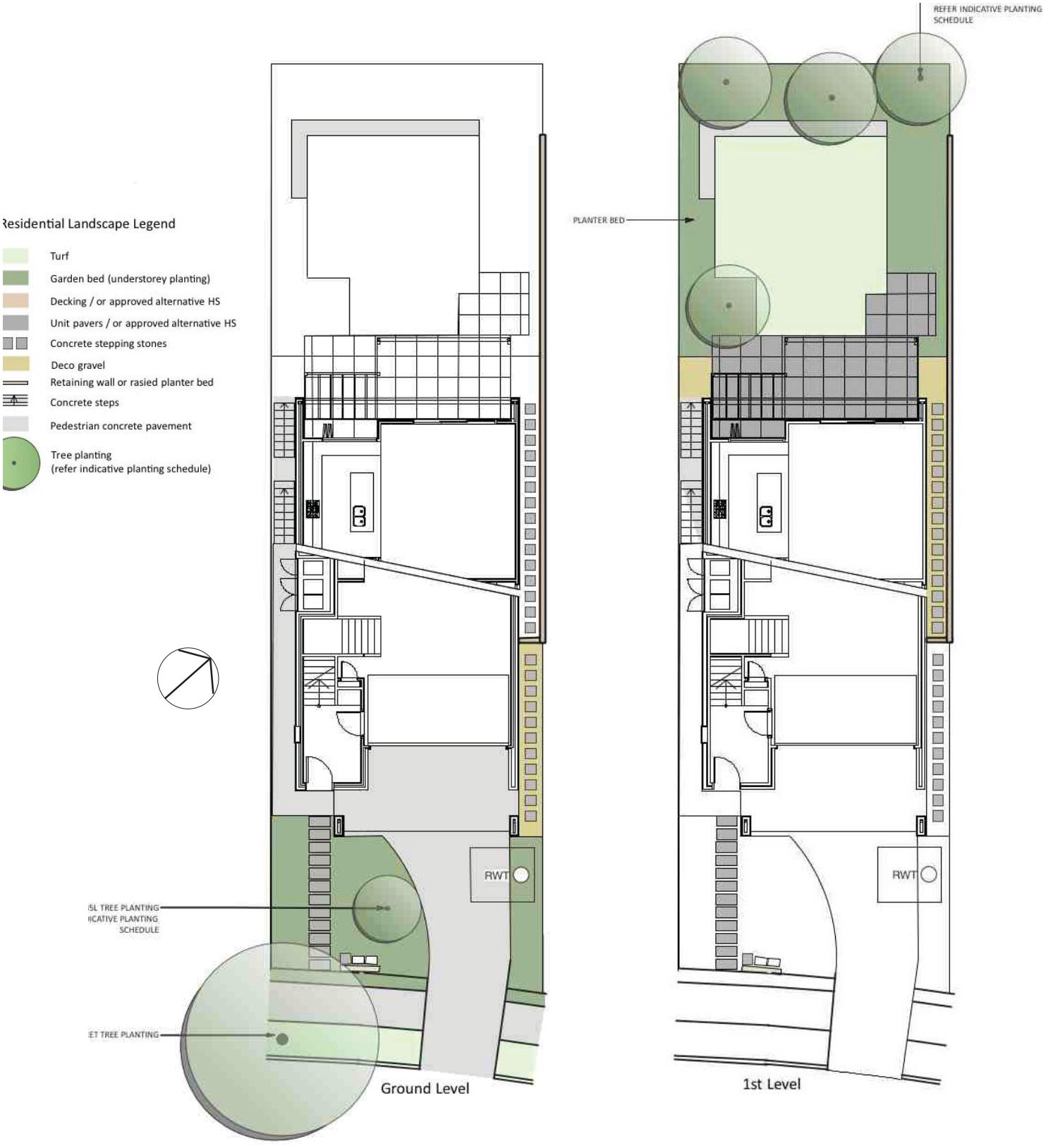


Figure 13 Typical House Type 1 landscape concept plan

4.5 Private Open Space

House Type 2 - “The Row” - semi-detached houses

Semi-detatched houses provide dwellings with off street parking to individual garages. Within the stage 1 phase 1 area, the semi-detached houses will step up the site and generally incorporate north and south facing courtyard and terrace spaces. Generally design will look to maximise the space within north facing courtyards be they on grade or as terrace areas.

The north west facing courtyards which adjoin Road 5 are slightly elevated to the street and may include a combination of surfaces dependant on their on their level. The frontage will be landscaped up to the edge of the verge pathway. A bin enclosure for each house near the street frontage will integrate the letter box.

A second courtyard space is provided on the south east side of the building. Surfaces would include paving and garden bed. An external drying area will be available in this courtyard. The courtyard will adjoin a driveway access to a lock up garage. It is envisaged that provision of small trees to these spaces will also be beneficial and may include deciduous species that maximise summer shade and winter sun.

To terrace spaces opportunties for pot plantings will be maximised. Due to the varied topography across the site, walling / division treatments between townhouse lots may be required to enable level outdoor spaces. These may include a variety of materials that complement both the architecture of the buildings and the landscape.

Typical planting species may include:

BOTANICAL NAME	COMMON NAME	MATURE HEIGHT (mm)	MATURE SPREAD (mm)
Trees			
Acmena smithii	Old Man Banksia	4000	2000
Banksia serrata	Old Man Banksia	4000	2000
Elaeocarpus eumundi	Smooth Leaved Quandong	8000	3000
Eucalyptus haemastoma	Scribbly Gum	8000	3000
Magnolia Little Gem 'Teddy Bear'	Teddy Bear	5000	3000
Syzigium luehmanii	Lilly Pilly	4000	2000
Green Screen			
Grevillea 'Honey Gem'	Honey Gem	1500	1000
Syzigium 'Resilience'	Resilience Lilly Pilly	4000	2000
Shrubs Tall			
Alpinia caerulea	Native Ginger	1300	1200
Dodonaea viscosa purpurea	Hop Bush	1500	1500
Doryanthes palmeri	Spear Lily	2000	2000
Echium fastuosum	Pride of Madeira	1500	1000
Strobilanthes gossypinus	Persian Shield Plant	1200	1000
Strelitzi reginae	Bird of paradise	1500	1500
Strelitzia juncea	Crane flower	2000	2000
Westringia 'Jervis Gem'	Jervis Gem	1000	1000
Yucca elephantipes	soft-tipped yucca	3000	1000
Shrubs Medium			
Banksia 'Coastal Cushions'	Coastal cushion banksia	600	500
Correa alba	Prostrate silver star	500	500
Loropetalum burgundy	Chinese Fringe Flower	500	500
Helichrysum petiolare	Licorice-plant	1000	1000
Sedum 'Autumn Joy'	Autumn Joy	700	500
Xerochrysum 'Sundaze bronze'	Everlasting daisy	400	500
Strappy/ Grasses			
Aspidistra elator	Cast iron plant	600	700
Agave stricta var nana	Tequilana 'Blue Star'	1000	700
Austrostipa ramosissima	Pillar of Smoke	500	1000
Beschomeria yuccoides	Joseph's coat	600	500
Juncus usitatus	Tussock Rush	1000	500
Lioriope 'Evergreen Giant	Utopia	2000	2000
Lomandra 'Conferta'	Confewrta Mat Rush	2000	2000
Lomandra 'Wingarra'	Wingarra' Mat Rush	2000	2000
Groundcovers			
Anemone x hybrid	'Honorume jobert'	0.5m	0.6m
Myoporum parvifolium 'Fine Leaf'	Fine Leaf	200	900
Senecio serpens	Chalk sticks	300	800
Stachys bizantine	Lamb's ear	300	800
Thymus vulgaris	Thyme	200	400
Viola hederacea.	Native violet	n/a	3000

Examples of similar landscape outcomes

4.0 DESIGN PROPOSALS

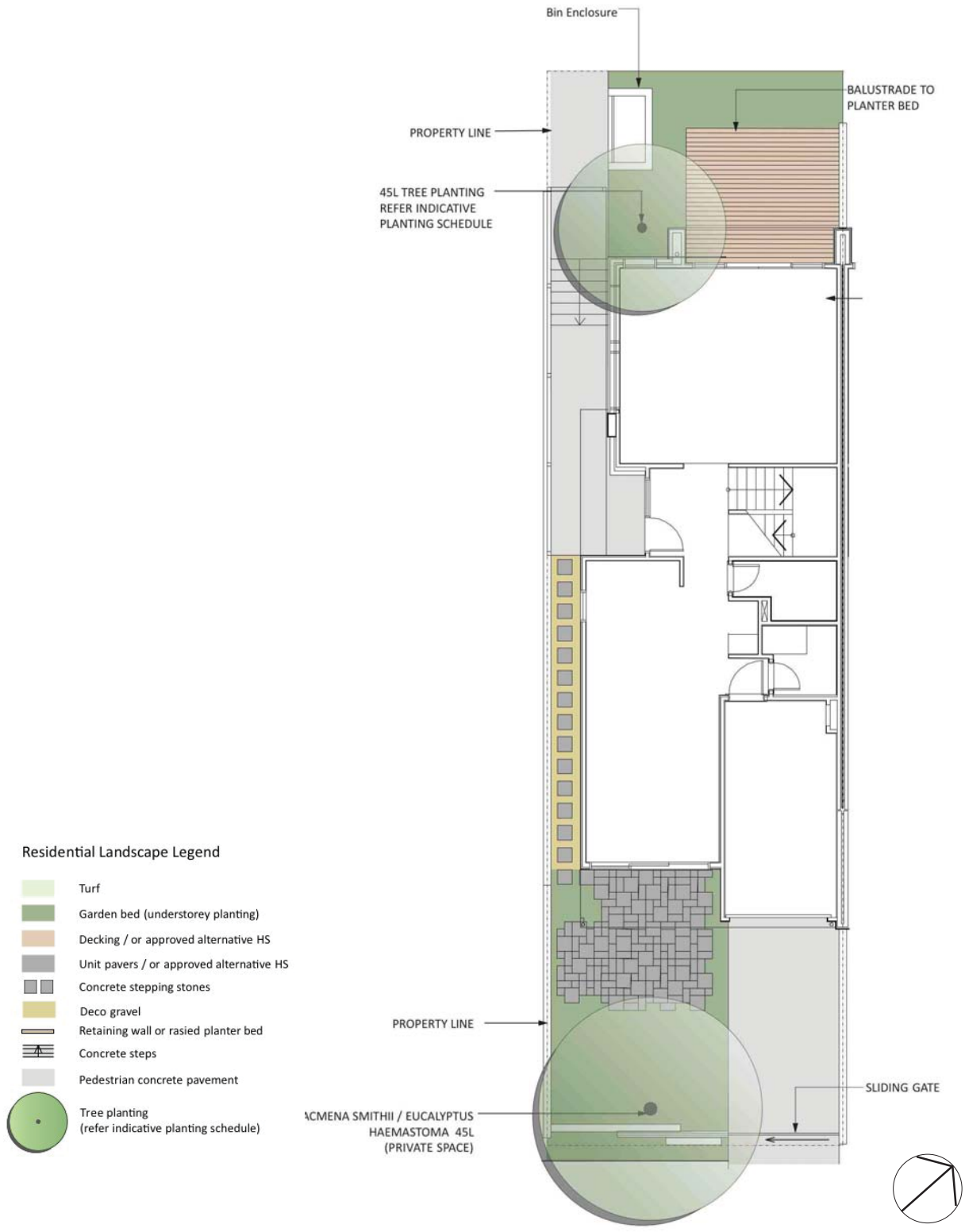


Figure 14: Typical House Type 2 landscape concept

4.5 Private Open Space

House Type 2 - House Type 3 - "The Chaddock" terraces
House Type 4 - "The Squire" terraces
House Type 5 - "The Tirrell" terraces

The House Type 3,4, and 5 Terraces are attached dwellings with off street parking to individual garages. Within the phase 1 area, the terraces will step up the site and generally incorporate both north and south facing landscaped spaces to each residence. Terraces will generally have less private open space than detached and semi-detached houses and will not have a linking path between front and rear courtyards.

The street frontage incorporates a driveway access to garaging and the pedestrian entry to the house. The driveway narrows at the boundary to maximise the landscaped frontage presented to the street. The house entry is accessed from both a path from the driveway, and a stepping stone link from the verge footpath. Garbage bins are accommodated in an enclosure within the house.

Generally design looks to maximise the outdoor area directly adjoining the internal living spaces with a courtyard adjoining the dining and kitchen areas. A hard surfaced area generally adjoins the building with grassed space beyond. A planted zone is provided at the rear boundary with the side boundary of the courtyards also adjoined by garden bed.

Subject to the orientation of individual spaces the planting approach varies to maximise seasonal amenity with north facing spaces including deciduous trees or selectively located trees to maintain a degree of winter solar access.

Typical planting species may include:

BOTANICAL NAME	COMMON NAME	MATURE HEIGHT (mm)	MATURE SPREAD (mm)
Trees			
Backhousia myrtifolia	Grey Myrtle	4000	2000
Elaeocarpus eumundi	Smooth Leaved Quandong	8000	3000
Magnolia Little Gem 'Teddy Bear'	Teddy Bear	5000	3000
Green Screen			
Acmena 'Good bye sunshine'	Hedge Lilly Pilly	4000	2000
Syzigium 'Resilience'	Resilience Lilly Pilly	4000	2000
Viburnum odoratissimum 'Emerald Lustre'	'Emerald Lustre	4000	2000
Shrubs Tall			
Dodonaea viscosa purpurea	Hop Bush	1500	1500
Ligularia 'The Rocket'	Rocket Ragwort	1000	750
Strobilanthes gossypinus	Persian Shield Plant	1200	1000
Westringia 'Jervis Gem'	Jervis Gem	1000	1000
Shrubs Medium			
Banksia 'Coastal Cushions'	Coastal cushion banksia	600	500
Correa alba	Prostrate silver star	500	500
Kalanchoe thyrsiflora	Flapjacks	500	500
Sedum 'Autumn Joy'	Autumn Joy	700	500
Xerochrysum 'Sundaze bronze'	Everlasting daisy	400	500
Strappy/ Grasses			
Anigozanthus 'Amber Velvet'	Kangaroo paw	500	500
Austrostipa ramosissima	Pillar of Smoke	500	1000
Baumea rubignosa	Orange nut sedge	400	400
Baloskion tetraphyllum	Tassel Cord Rush	400	400
Beschomeria yuccoides	Joseph's coat	600	500
Lomandra 'Wingara'	Wingara mat rush	500	600
Dianella 'Utopia'	Utopia	2000	2000
Doryanthes palmeri	Spear Lily	2000	2000
Juncus usitatus	Tussock Rush	1000	500
Groundcovers			
Convolvulus cneorum	Ipomoea	300	900
Gazania 'Hillside'	Hillside daisy	300	500
Coprosma repens 'Kirkii'	Mirror bush	400	1500
Myoporum parvifolium 'Fine Leaf'	Fine Leaf	200	900
Senecio serpens	Chalk sticks	300	800
Climbers			
Trachelospermum jasminoides	Star Jasmine	n/a	2000
Hardenbergia violacea	Sarsaparilla	n/a	3000

Examples of similar landscape outcomes

4.0 DESIGN PROPOSALS

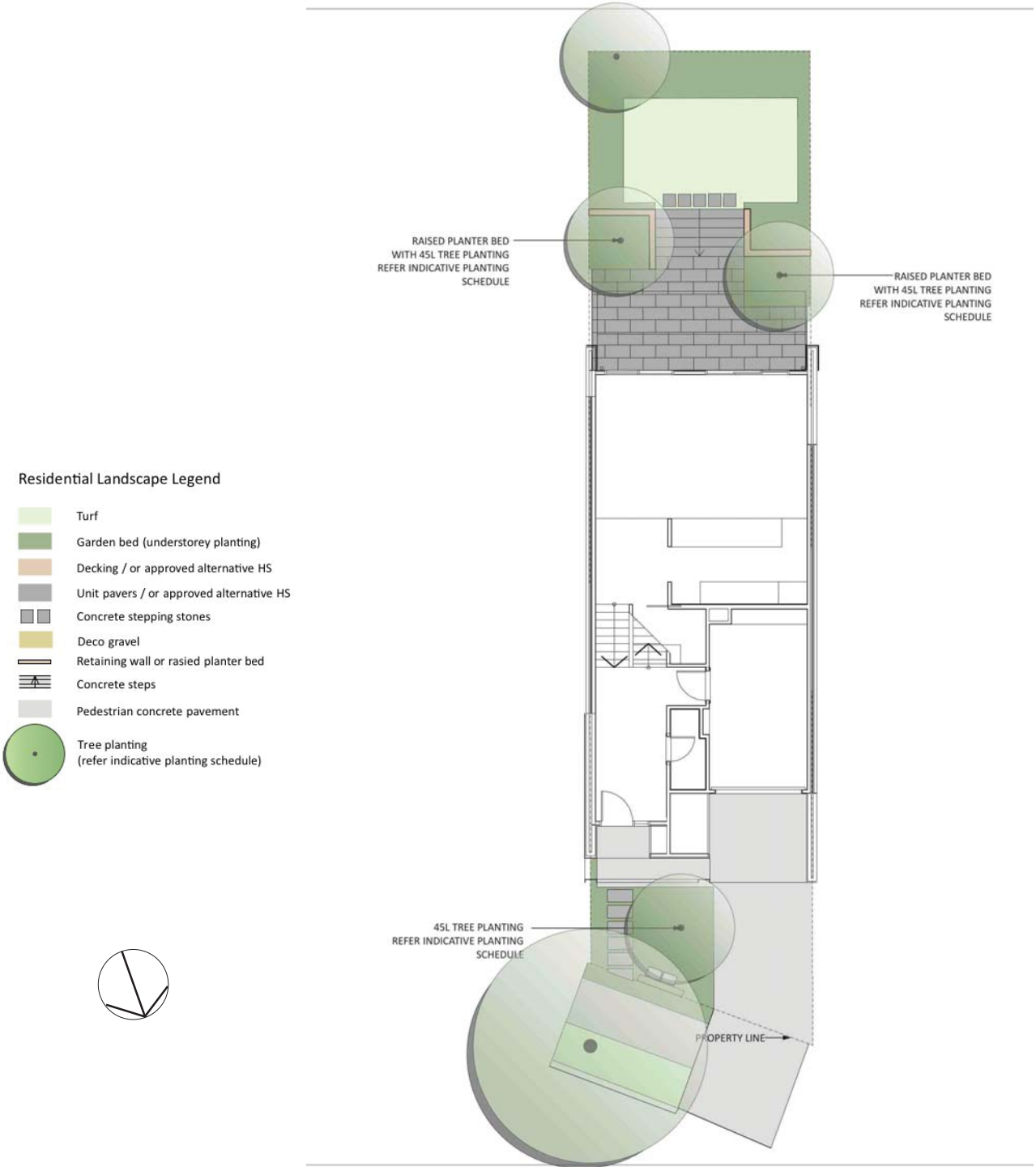


Figure 15: Typical House Type Three (Terrace) landscape concept plan

4.5 Private Open Space

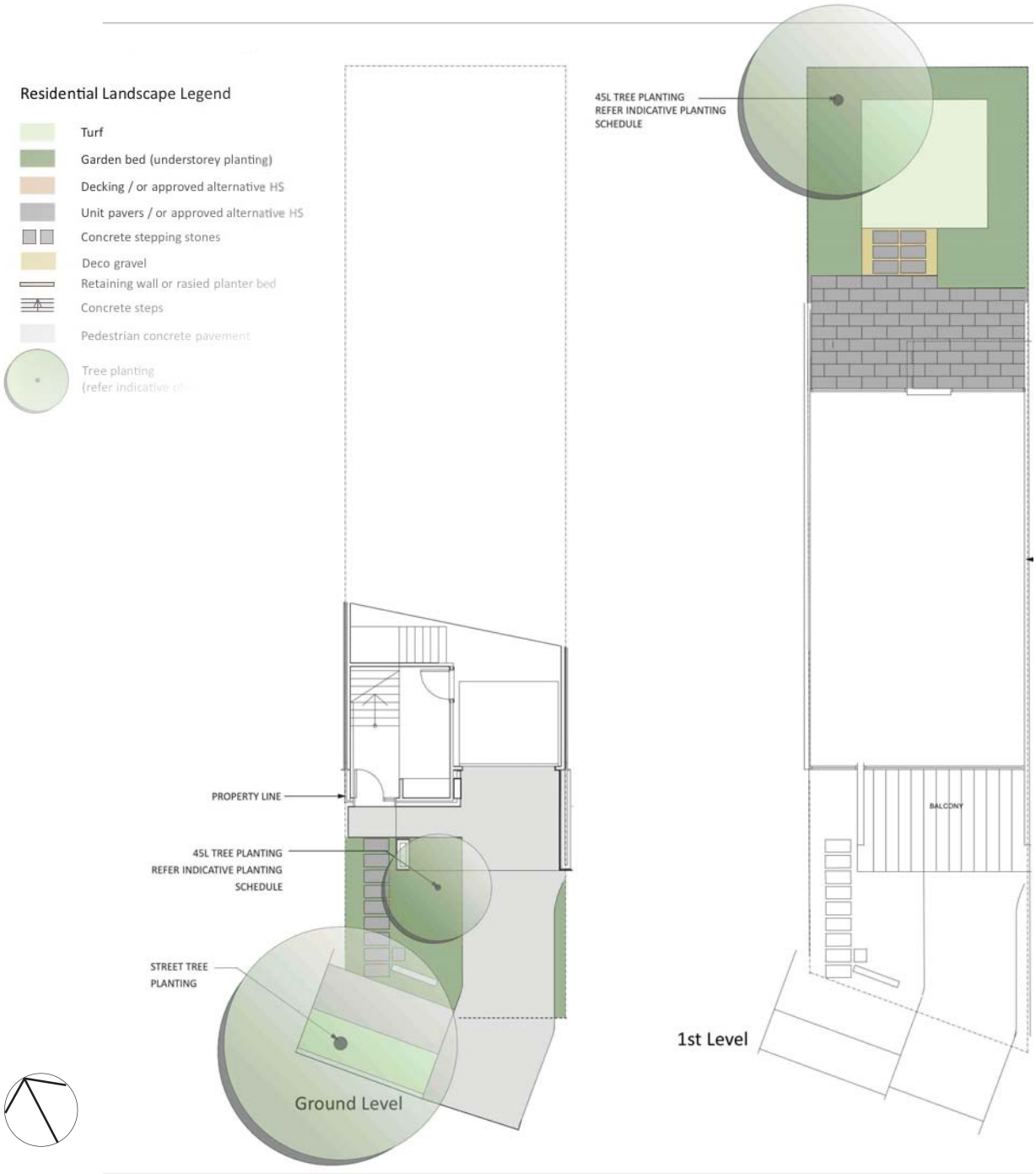


Figure 16: Typical House Type Four (Terrace) landscape concept plan

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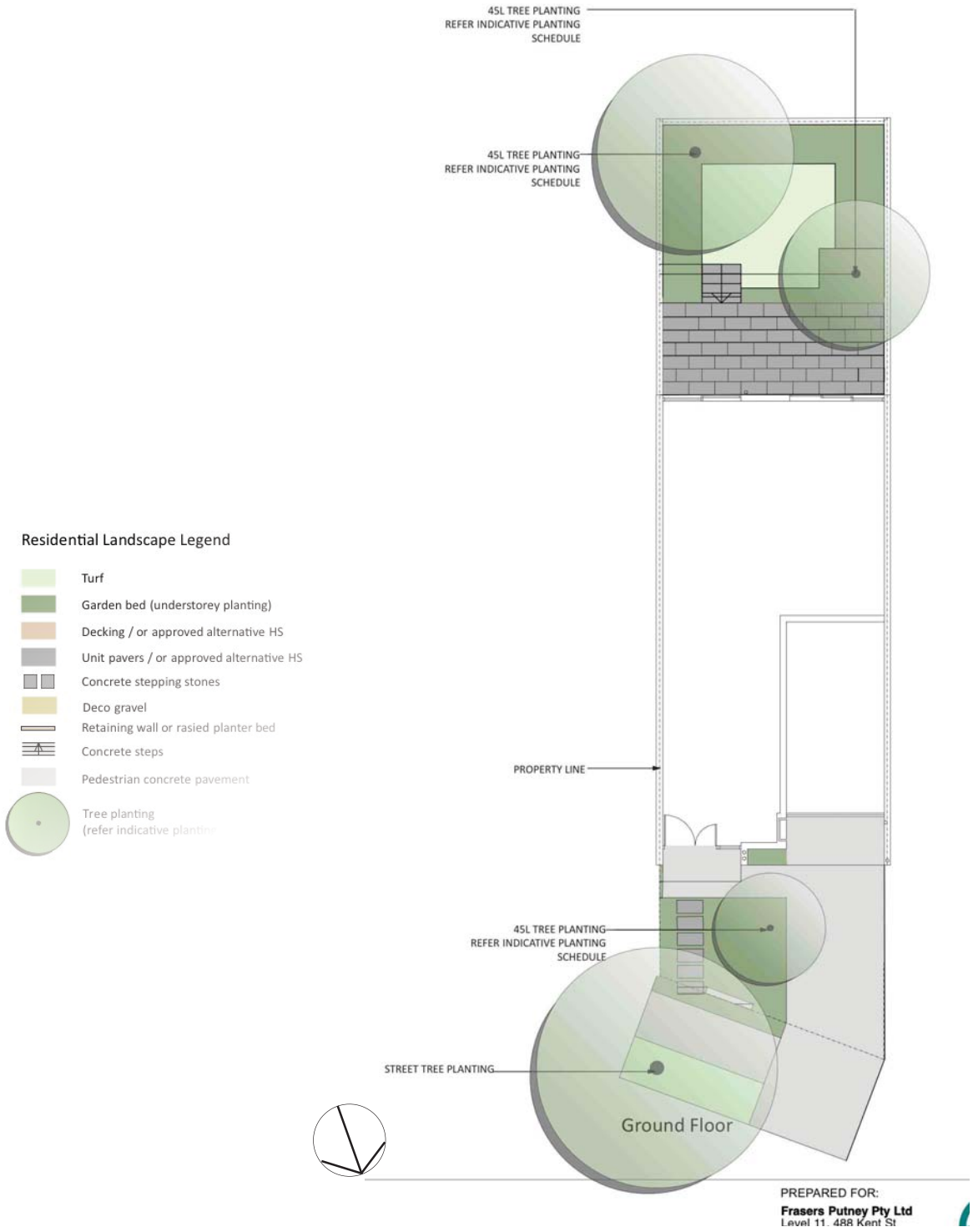


Figure 17: Typical House Type Five (Terrace) landscape concept plan

4.5 Private Open Space

Apartments

Apartments will include a balcony or terrace areas off living areas to provide private open space opportunities for residents. These areas will provide space for relaxing and entertaining in addition to external area to enable drying of clothes. In addition the apartment blocks will be flanked by a variety of communal private spaces allowing for access and general use.

Planting to on grade areas will be focussed on providing enhancement of built form and integration into the landscape, in addition to spatial definition, buffering of views, and shade and reduction of heat loadings to western facades.

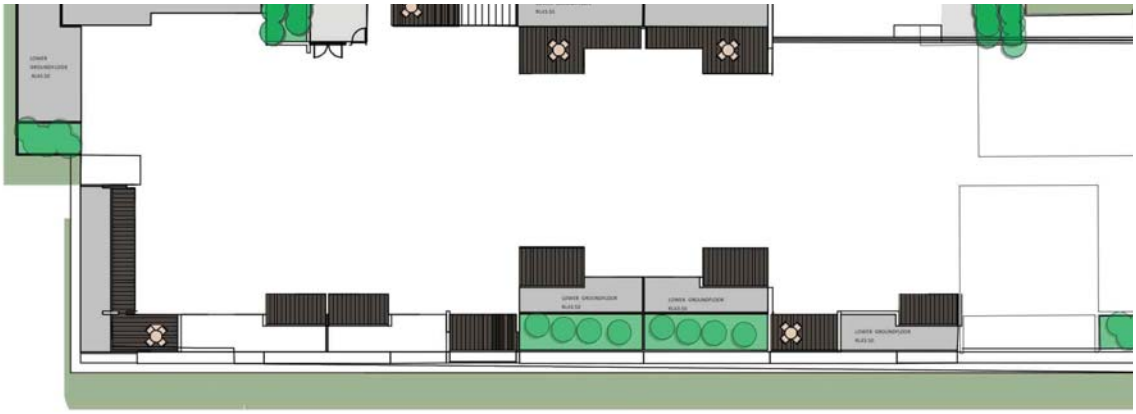
Also important to the amenity of the apartments is the adjoining open space areas which can be viewed from windows and balcony areas. Concept development for open space designs across the site have considered both the usability and visual quality at ground level, whilst also considering the views to and from private open space areas.

Typical planting species may include:

BOTANICAL NAME	COMMON NAME	MATURE HEIGHT	MATURE SPREAD
Shrubs			
Cordyline australis	Cabbage Tree	4.0m	2.0m
Doryanthes excelsa	Gymea Lilly	2.0m	1.8m
Syzigium bush christmas	Lilly Pilly	2.0m	1.6m
Yucca elephantipes	Spineless Yucca	3.5m	2.5m
Groundcovers			
Cissus antarctica	Sarsparilla vine		
Hardenbergia violacea	Native Sarsparilla		
Myoporum parvifolium	Creeping Boobiala		
Poa labilliardi	Tussock Grasses		
Trachelospermum jasminoides	Star Jasmine		
Turf			
Sydney Soft Leaf Buffalo			

Examples of similar landscape outcomes

4.0 DESIGN PROPOSALS



INDICATIVE PLANTING SCHEDULE			
BOTANICAL NAME	COMMON NAME	HEIGHT AT	SPREAD AT

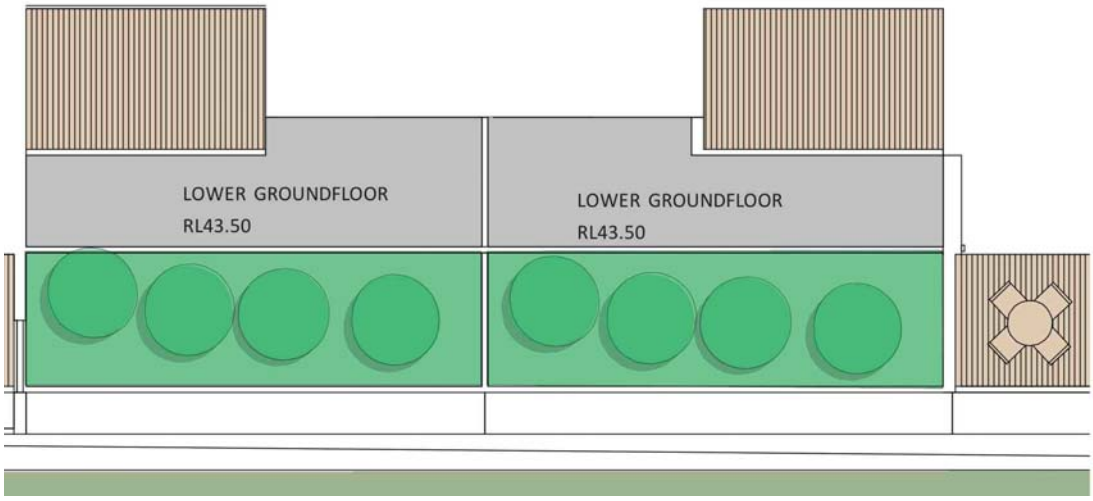


Figure 17: Typical Apartment courtyards

4.6 Materials and Finishes

General materials strategies through public open spaces will make reference to the Ryde Public Domain Strategy and the recent local public domain works undertaken in Putney Village

Unit Pavement

• Interlocking Pavement:	to carparking bays and basements (eco paving to acceptable carpark driveway grades)
• Insitu Concrete:	pedestrian footpaths, shared paths and residential driveways
• Clay Brick Pavement:	as feature pavement threshold to match Putney Village Centre to general open spaces
• Stabilised Gravel:	as intermediate level pavement to seating areas and to reduce extent of hard paved surfaces

Furniture

• Seats	Botton & Gardiner or similar
• Picnic Tables	Botton & Gardiner or similar

Concrete pavement

Clay brick pavement as accent surface

Seat

Picnic table

Potential interpretation to drainage inlets to selective locations

5.0 LANDSCAPE CONCEPT PLANS

5.1 Schedule of Drawings

DRAWING	TITLE	ISSUE
3025.TR01	Tree retention plan	6
3025.PD01	Public domain plan	6
3025.RC01	Road cross-sections	6
3025.PA01	Pedestrian access plan	6
3025.SP01	Key Plan	6
3025.LP00	Landscape masterplan	6
3025.LP01	Landscape concept-area 1	6
3025.LP02	Landscape concept-area 2	6
3025.LP03	Landscape concept-area 3	6
3025.LP04	Landscape concept-area 4	6
3025.LP05	Victoria Road Entry	6
3025.RL01	Residential landscape-housing type 1	6
3025.RL02	Residential landscape-housing type 2	6
3025.RL03	Residential landscape-housing type 3	6
3025.RL04	Residential landscape-housing type 4	6
3025.RL05	Residential landscape-apartment building	6
3025.LC01	Landscape cross-sections 1	6
3025.LC02	Landscape cross-sections 2	6

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6.0 CONCLUSION

6.1 Summary

The Putney Hill phase 1 development, is compatible with the objectives and requirements of relevant policies and strategies.

Development of the site will provide a high quality of housing at a variety of scales and incorporate a unique range of open space opportunities, both of public and private open space.

Proposed planting species are predominantly native, with 75% of open space tree and shrub species identified on DECCW web-site as belonging to the endangered Sydney Turpentine Ironbark Forest community, which previously was the dominant vegetation cover on the site.

Proposed tree retention has accommodated the retention of established groups of trees providing habitat as well as significant large specimens that will provide enhanced character to the new development. The large existing Ficus hillii to be protected and retained will provide the focal point for a small pocket park, punctuating the streetscape and contributing to the variety of open space experiences and landscape character.

Total tree removal on site will be offset by new tree plantings, neutralizing any trees loss. Many existing trees are identified in the Arborists report as being of poor health. New tree plantings will be robust, predominantly native species with a cohesive character.