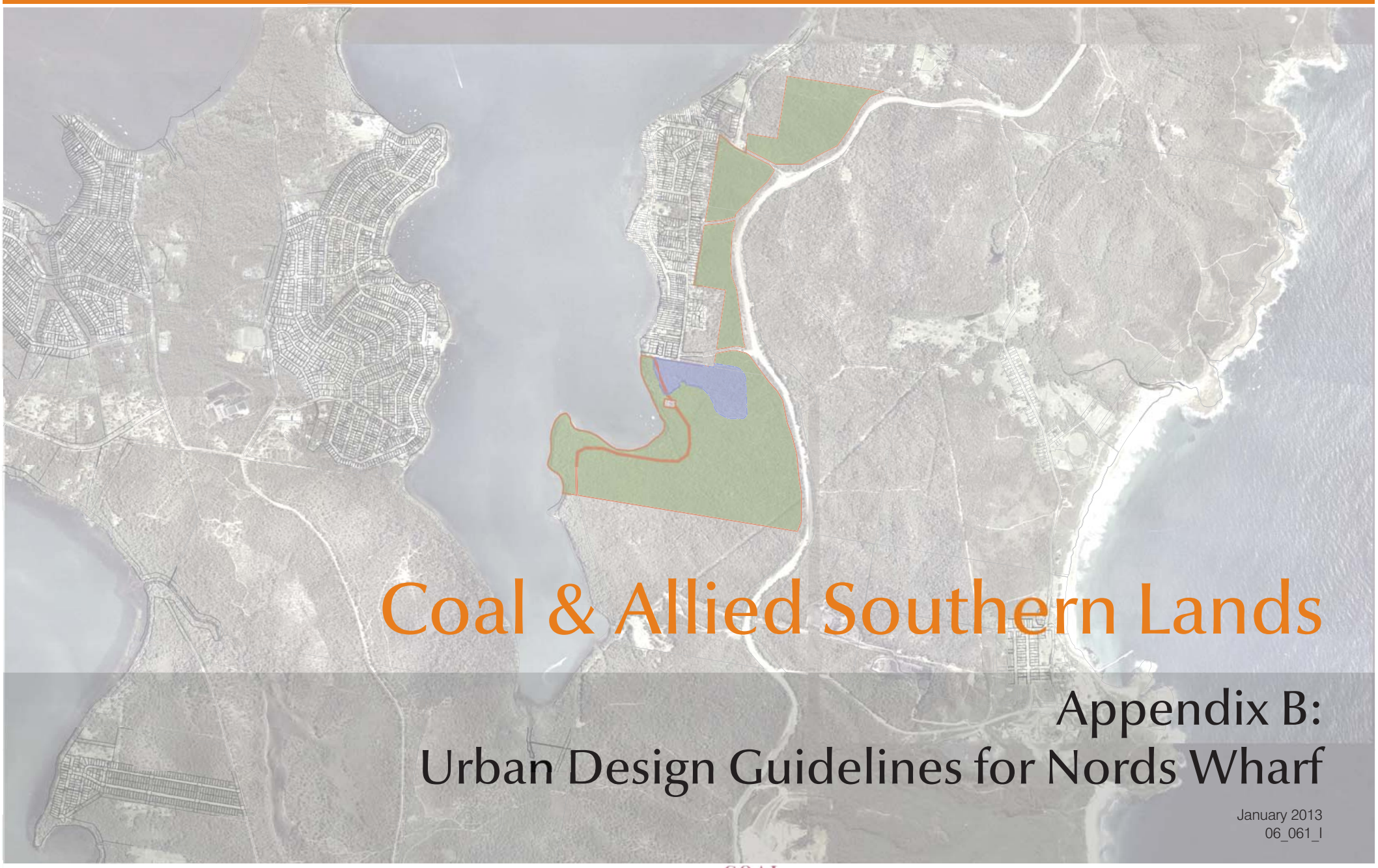

Coal & Allied Southern Lands

Appendix B:
Urban Design Guidelines for Nords Wharf

January 2013
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COAL & ALLIED

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ASPECT Studios

Appendix B: Urban Design Guidelines for Nords Wharf provides detail information on the public domain and built form. It describes how to achieve the principles of Appendix A: Concept Plan Principles for Nords Wharf.

The structure of this document is as follows:

- **B1 is the Public Domain Plan for the site**. It includes landscape and urban design treatments for all areas within the development footprint that will be managed by a community body or the local council. It includes information on character and amenity of the streets and principles for materials selection and assemblage techniques.
- **B2 is the Design Guidelines for individual lots**. It defines the objectives and specific controls that relate to building types, densities, heights, setbacks and private open space.

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Public Domain

Design Guidelines

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B1 Public Domain Plan

B2 Design Guidelines

B1.1 Public Domain Strategy

The Public Domain Plan addresses:

- Design principles for landscape character, amenity and sustainability
- Design strategies for the proposed public domain.

Guidelines which cover the private domain are included in the next section of this report.

Site objectives

Character objectives:

- To retain the dominance of the natural landscape.
- To enhance and enrich the existing landscape character.
- To reflect the casual and informal qualities of living in the region.
- To maximize views to natural features within the public domain of the development.
- To protect the quality of views from adjoining areas within the view catchments of the development.
- To give priority to views to and from the public domain over views to and from private domain.

Amenity objectives:

- To provide shade in the public and private domain.
- To provide comfortable, direct and legible connections for all modes of transport.
- To provide safety for all in the public domain through the application of CPTED principles.

Sustainability:

- To plan and design for energy efficiency in the built form through the use of topography and vegetation.
- To provide for a sustainable water management system throughout the public domain.
- To integrate water sensitive urban design methods in streets and parks.
- To encourage biodiversity in landscape treatments.

Principles of the Public Domain Plan.

Character

- Streets are to have a simple park like character with tall trees and grassed understoreys, which should be complemented by the use of simple materials in paths, signs and road edge treatments.
- Street typologies will reinforce these qualities of the landscape with a subtle variety of street planting based on the endemic species.
- The plan reinforces the endemic landscape. The forest landscape type of peppermint/smooth barked apple is to be developed in streets with plantings of same and similar species of tall trees with thin, layered canopies. New plantings will have an informal layout, reinforcing the casual living theme. Tall street trees will frame and facilitate views to the surrounding bushland. Kerbs and edges will zigzag in and out of the parking lane to include tree planting.
- Swale trees will be smaller and denser riparian species trees, more suited to drainage corridors, and appropriate for planting in APZ's.
- Ground covers will predominantly be native grasses and low shrubs. Extensive areas of lawn should be avoided as they create management problems.
- The public domain character is reinforced by the materials and massing of built form.
- Services and utilities will be provided underground along all streets to serve the housing lots.

Amenity

- The street layout is designed to provide safe walking and bicycle routes that link the site with the existing settlement at Nords Wharf and with its parks and services.
- 1.2m wide footpath and parallel on-street parking will occur on all streets. Retention of existing trees and new planting in streets and parks will provide shade for pedestrians. The open ground plane will provide good surveillance for all activities. Main streets will be lit at night for safety and security. Universal access will be provided on all routes.

Sustainability

- Water sensitive urban design system that relies on non-piped solutions, utilising swales that are integrated with the landscape at the perimeter of the development.
- Street tree planting and ground covers are to form continuous bushland corridors that are contiguous with the surrounding bushland, enhancing the biodiversity values of the area.
- Judicious use of light canopied eucalypts and angophoras will allow solar access to housing in winter, and provide shade in summer.

B1.2 Street types

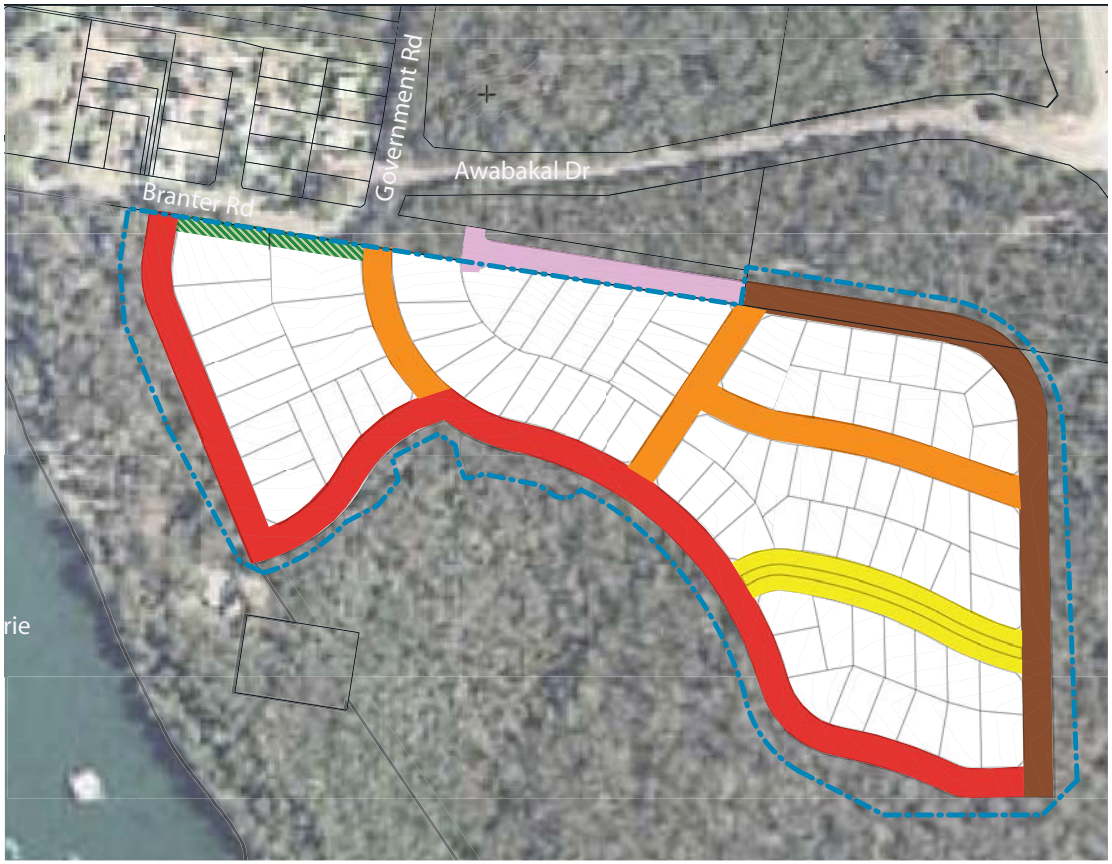


Figure B1.2.1 - Street Types

The streets of Nords Wharf are designed with a typology of three street characters. The three types refer to:

- Edge streets that occur on the periphery of the development with swales and include the APZ.
- Internal streets that are of standard widths.
- A wider internal street that includes a central swale.

The street types give diversity and richness to the public domain that responds to the differing conditions around the site without being constrained by an unnecessary complexity.

The three street types, with sub-types within Type A. Their character, amenity and sustainability techniques are described below.

Type A1, A2 and A3

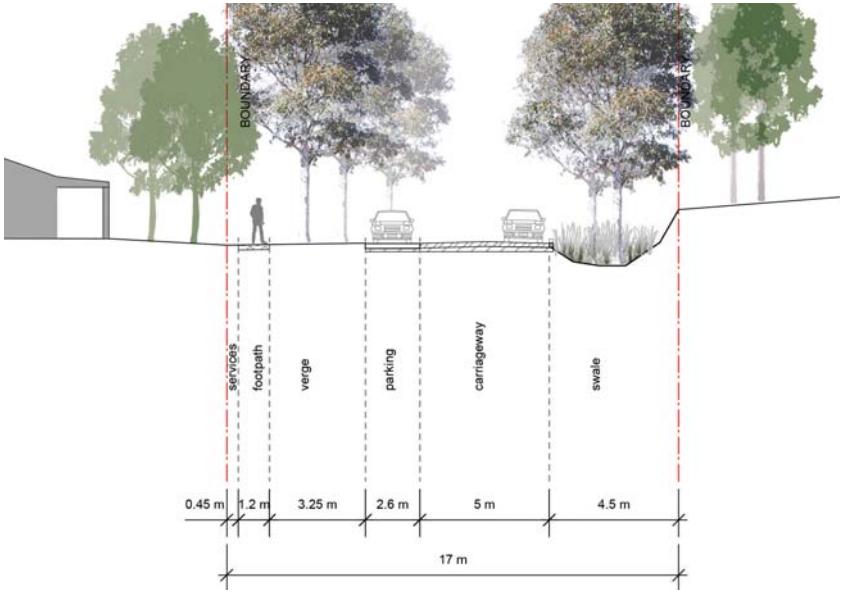
- These streets are the periphery streets, distinctive because they will have parkland on one side and residential housing development on the other. They will be broader, flatter, serpentine parkways that weave along the contours with a forest on one side. Street type A3 will terminate with a turning head.
- These will be wider spatially, as tree planting will be restricted by APZ requirements. Carriageways will be narrow, with a swale and buffer planting along the park side to filter and protect the conservation areas. The development verge will have a kerb, a footpath and discontinuous tree and ground cover planting. Building setbacks will accommodate the APZ requirements where necessary.
- A 1.2m wide footpath is to be located on the housing verge, together with turf and Eucalyptus/Angophora plantings in informal/staggered layouts.
- Surface stormwater is directed to swales on the bushland verges. Swales will be planted with native grasses and swale tree species, which are smaller and denser, providing a layer of lusher vegetation in front of the adjoining bushland.

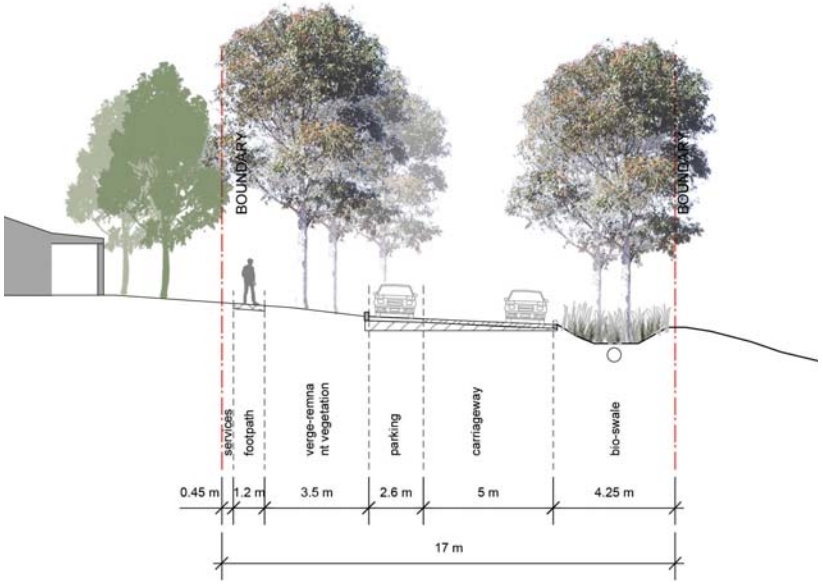
Type B

- These streets include the main entry road and the short streets that link the peripheral streets to the core of the development. They are all short streets, generally straight with a moderate gradient, narrow carriageways and wide verges.
- These streets retain the character of the bushland setting with landscape verges, a narrow footpath, and extensive verge tree planting in random layout, to provide a layering of trees that cascade down the slopes. Tall trees will arch over the streets giving views to the bushland at the terminations of these short streets. The wide lot frontages will have small setbacks, reinforcing the idea of a sense of enclosure within these streets, however, setbacks will vary according to the need to retain trees.
- This street type will have 1.2m footpaths on one verge, parallel parking on both sides, kerbs and gutters.

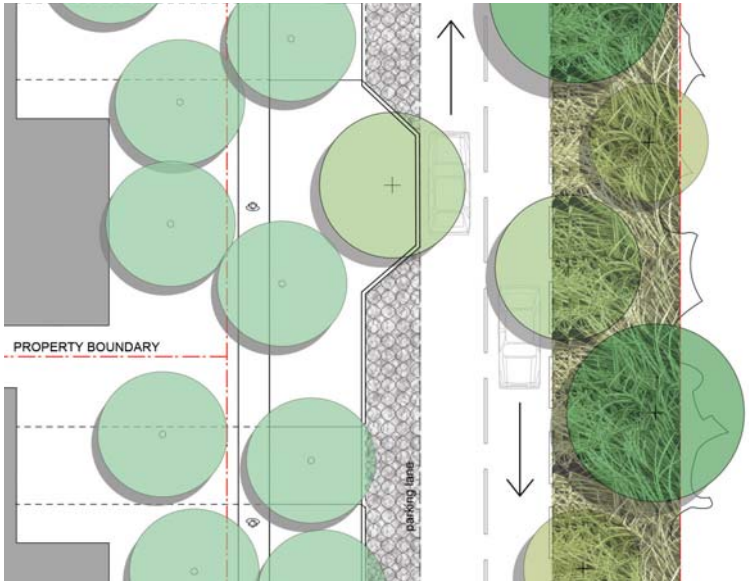
Type C

- This street includes the wider street type that is similar to B type streets but includes a central swale to accommodate larger flows of stormwater.



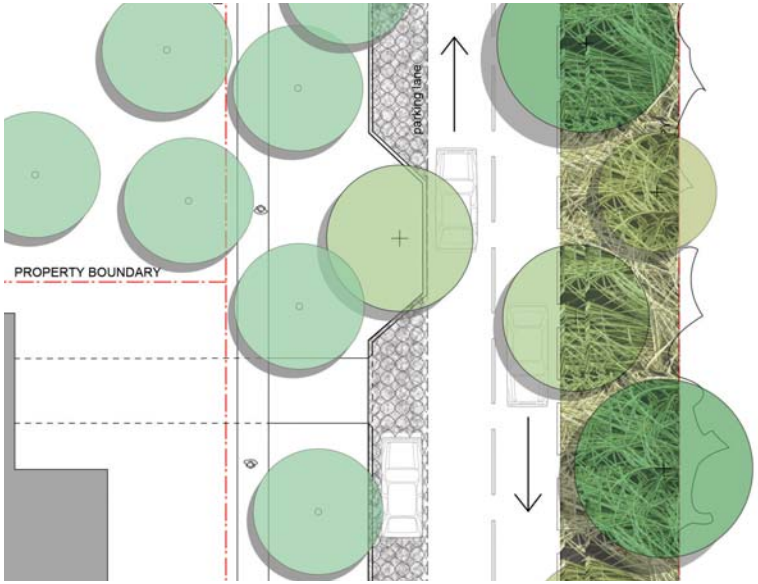


Location Plan



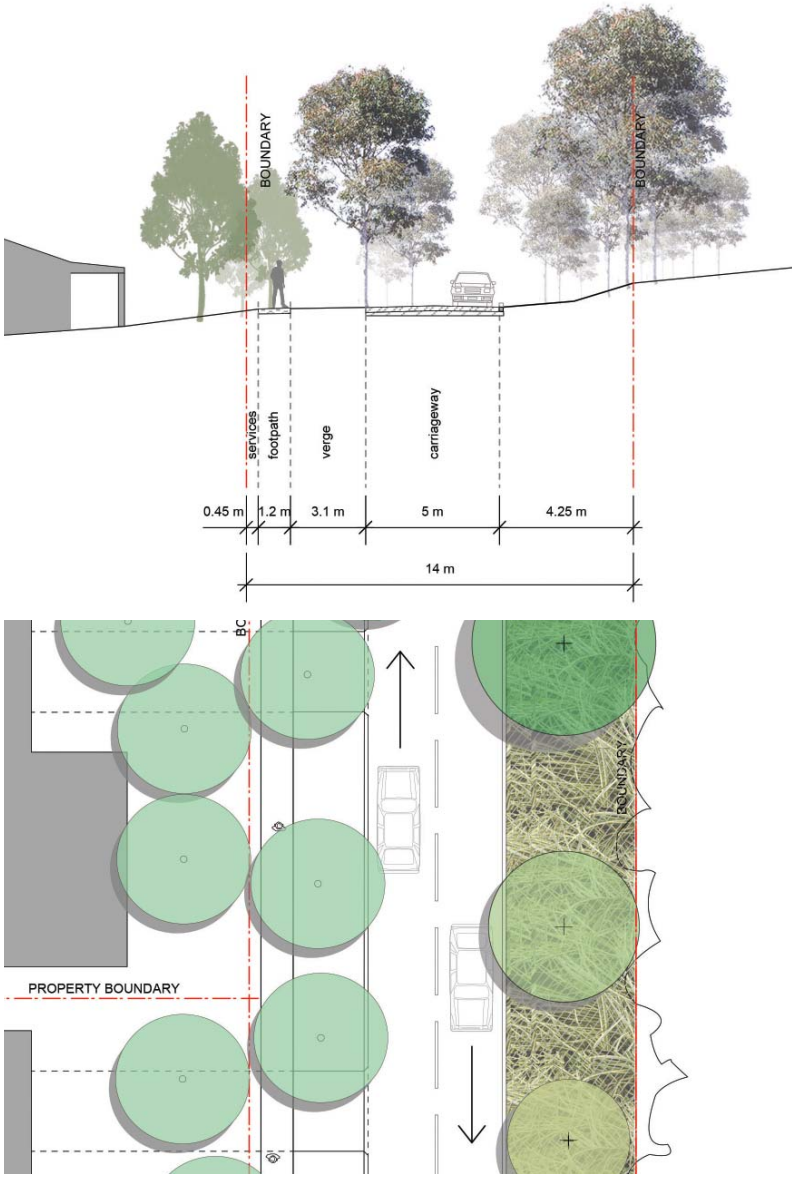
Street Type A1
Local Street with swale : 17m wide

Figure B1.2.2 - Street Type A1



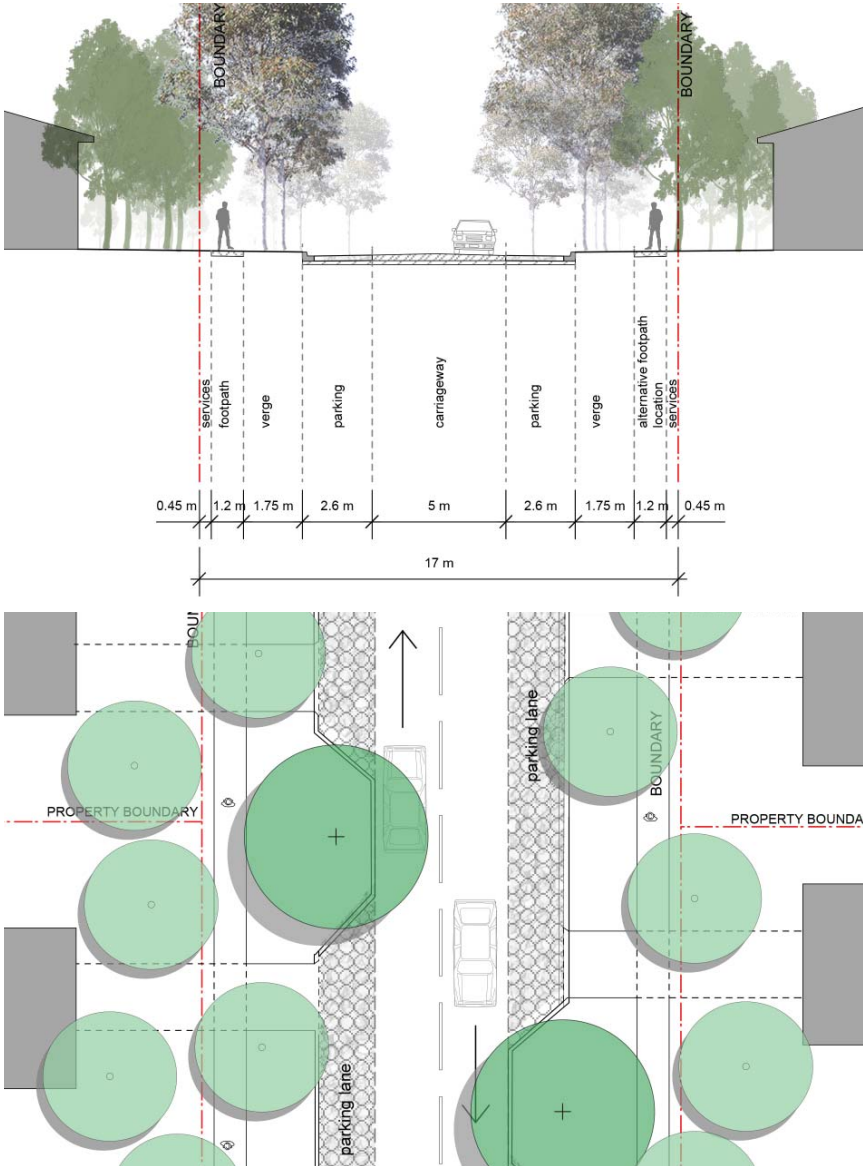
Street Type A2
Local Street with bio- swale : 17m wide

Figure B1.2.3 - Street Type A2



Street Type A3
Local Street with swale :14m wide

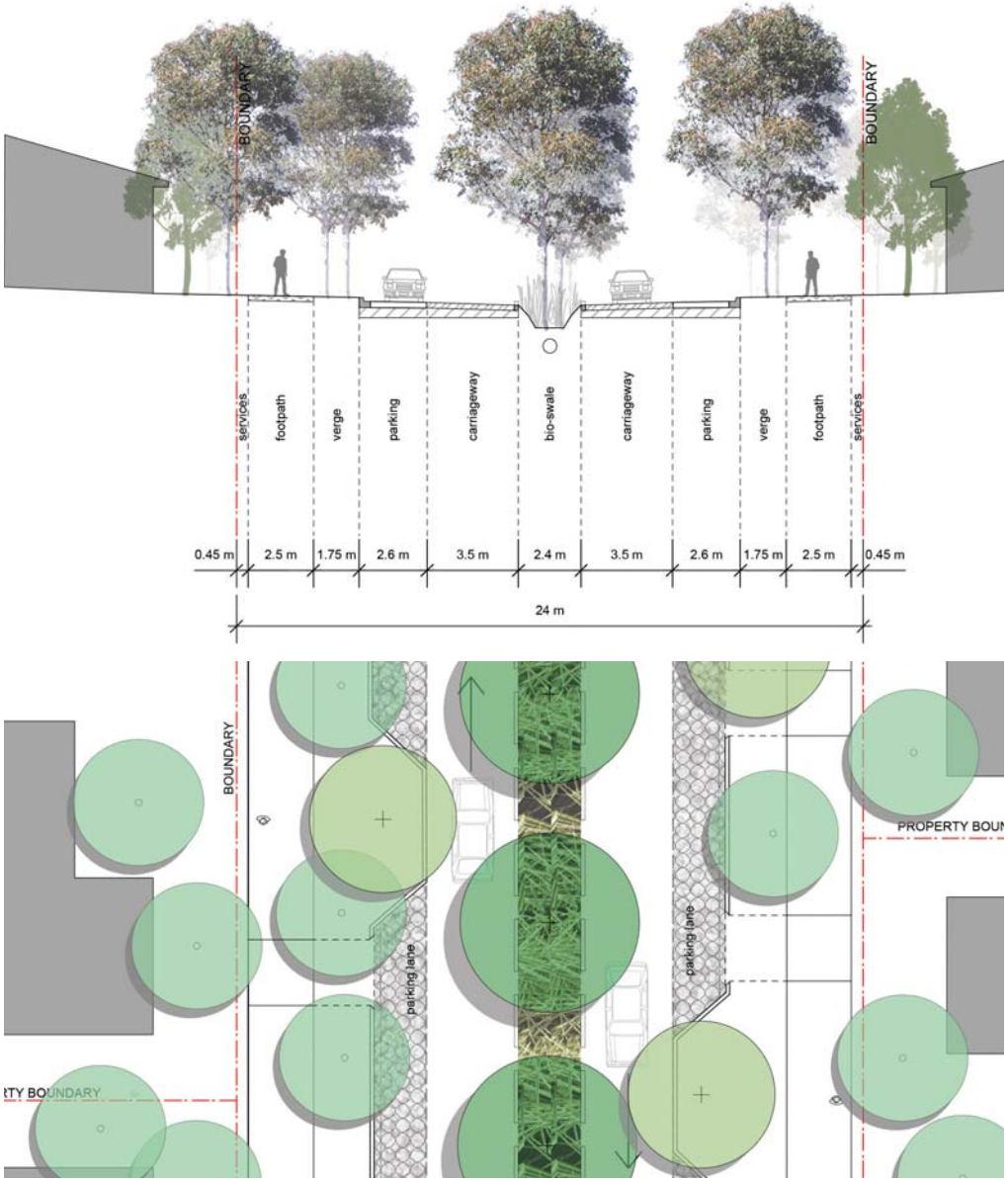
Figure B1.2.4 - Street Type A3



Street Type B

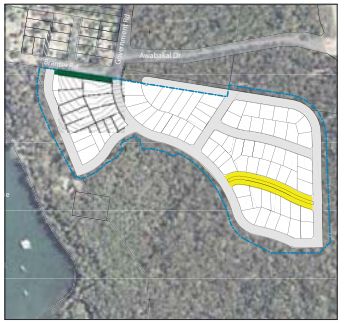
Figure B1.2.5 - Street Type B

Location Plan



Street Type C
Local Street with central swale :24m wide

Figure B1.2.6 - Street Type C



Location Plan

B1.3 Plant Types and Materials

Figure B1.3.1 - Plant Types

Plant palette

- Plant palette will be dominated by local and endemic species. The landscape character of the existing vegetation will dominate, proposed tree species will be tall. While the soils are quite deep in the area, and south facing slopes will encourage good water retention, endemic species are proposed to minimize water use.

Landscape materials and assemblage techniques

- Public domain materials will be simple, i.e. concrete footpaths and concrete kerbs.
- Kerb ramps are to be provided at all intersections.
- Lighting poles are to be standard galvanized steel poles with outreach arms.
- Light spill is to be minimised to ensure that the surrounding bush setting is not impacted by an excess of night lighting.

The proposed species include species shown opposite

- The forest landscape type of peppermint/smooth barked apple is to be developed in streets and parking lanes with plantings of same and similar species of tall trees with thin, layered canopies.
- Swale trees will be smaller and denser riparian species trees, more suited to drainage corridors, and appropriate for planting in APZ's.
- Ground covers will predominantly be native grasses and low shrubs. Extensive areas of lawn shall occur along the verges only to facilitate access from parking areas.

B2.1 Building Types

Figure B2.1.1 - Building types

Objectives:

- To reinforce the desired future character for Nords Wharf estate.
- To respond to the street hierarchy and corresponding street character with appropriately located building types.
- To design housing types that respond to their lot configurations including size, shape, slope and orientation.
- To encourage the design of dwellings to conform to the natural land form.
- To minimise cut and fill and reduce the need for retaining walls
- To provide a variety of lot sizes to promote housing choice and affordability that support aging in place for existing Nords Wharf residents.

Village Lots

- Detached dwellings
- Minimum site area of 450m^2
- 15m minimum lot frontage with front access.
- Typically with east-west orientation although some overlook the wetland reserve to the south.

Bushview Lots

- Detached dwelling with typically 20m minimum lot frontage.
- Minimum site area of 450m^2
- These traditional lots mainly have an outlook over the conservation lands to the south, east and north and are located on a gentle slope.
- These houses are to be sited within a landscape setting.
- To be 1 storey where shown on Figure 2.3.1 Building Heights Diagram

Lakeview and Hillside Lots

- Detached dwellings with typically 18m min. lot frontage.
- Large lots over 900m^2
- Lakeview lots are located along the foreshore reserve and overlook the lake to the west.
- Hillside lots are located along the northern boundary on the hillside with elevated views of the lake from rear gardens to the south-west.

Corner Lots

- Detached dwellings with typically 20m min. lot frontage.
- Minimum site area of 600m^2
- To be 1 storey where shown on Figure 2.3.1 Building Heights Diagram

Cut and fill

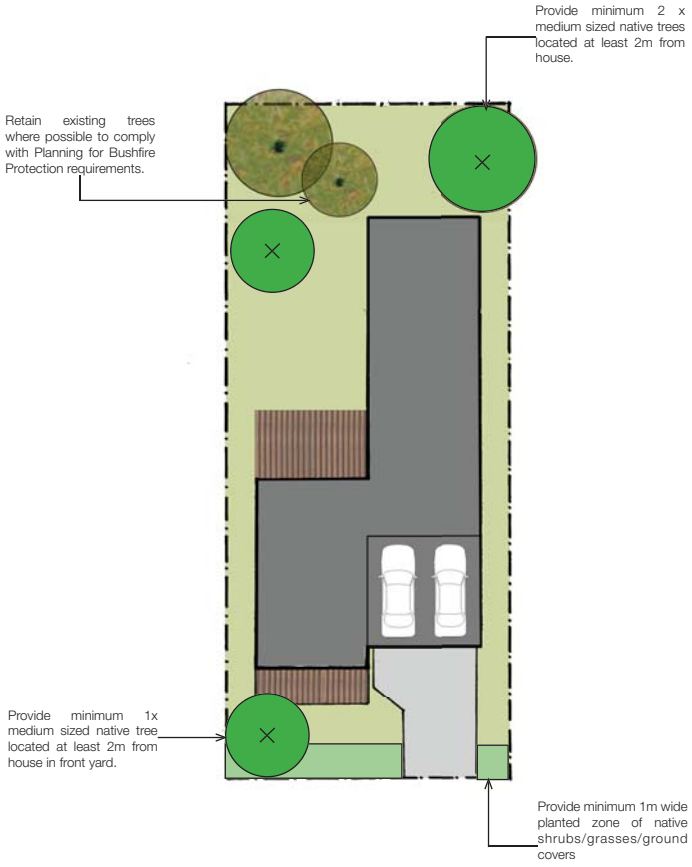
- Cut and fill should not exceed 500mm in height measured from the natural ground level adjacent to the building.
- On sloping sites, floor construction is to be raised on stumps to minimise cut and fill.
- The dwelling footprint may need to be broken into smaller pavilions to reduce the extent of cut + fill and/or height of the stumps.

Retaining walls

- A maximum 500mm high
- Located fully within the boundaries of the subject property.
- Constructed in natural materials and colours

Village house with landscape plan

Minimum 15m lot frontage



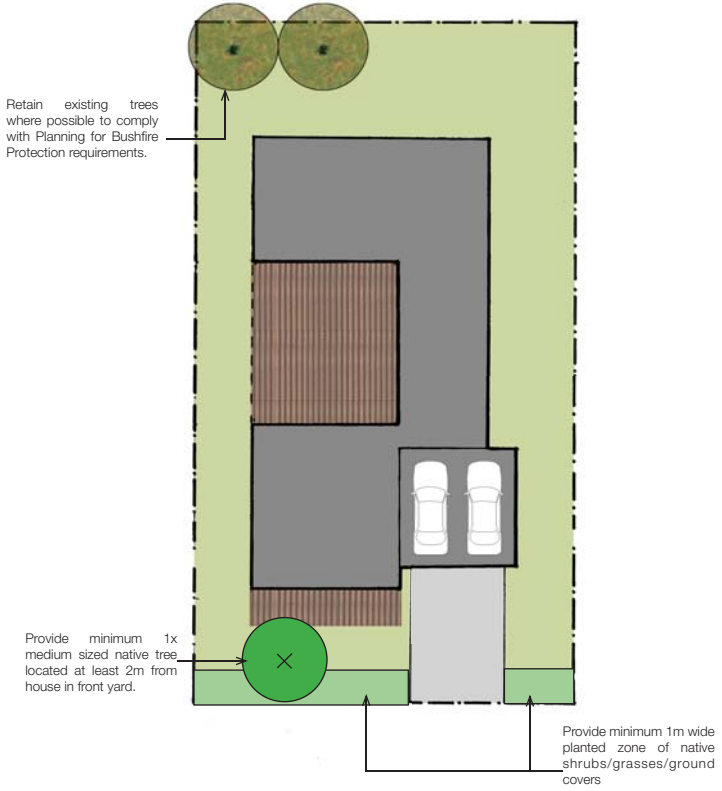
Indicative Plan

Indicative Elevation

Figure B2.1.2 - Village House

Bushview house with landscape plan

Minimum 20m lot frontage



Indicative Plan

Indicative Elevation

Figure B2.1.3- Bushview House - typical 2 storey type

Lakeview & Hillside house with landscape plan

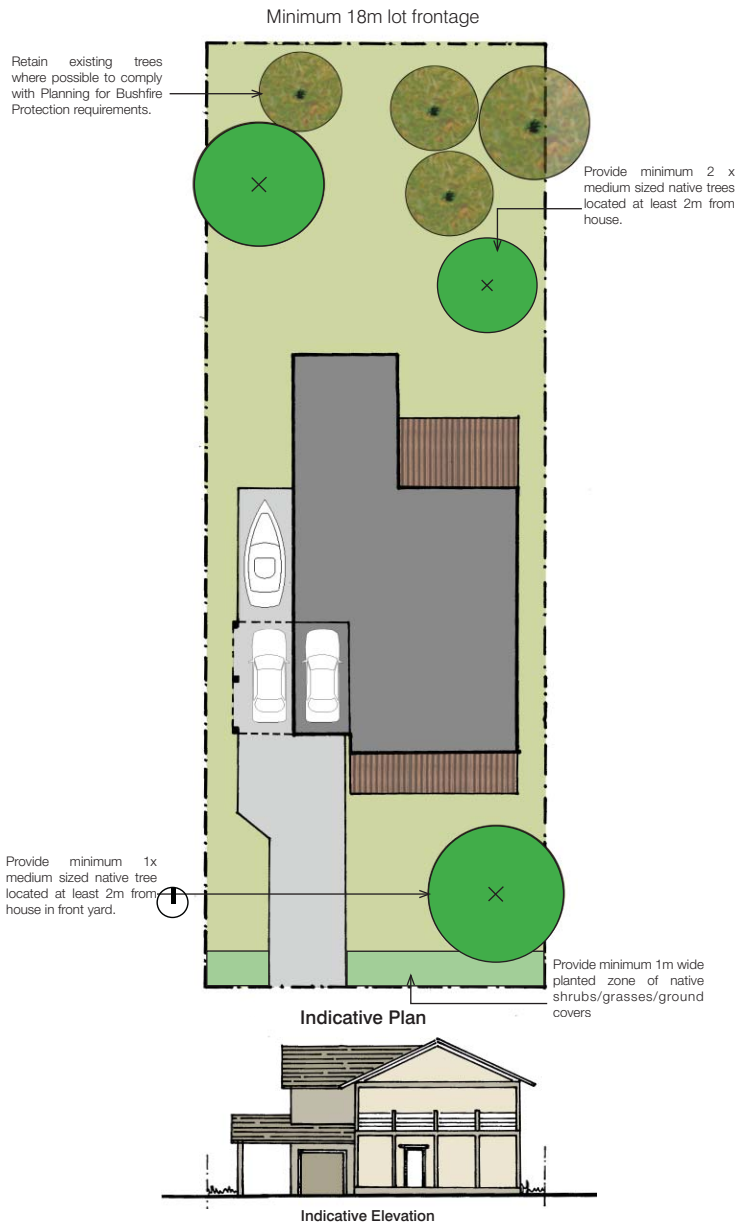


Figure B2.1.4 - Lakeview & Hillside Houses

Typical Corner Lot house with landscape plan

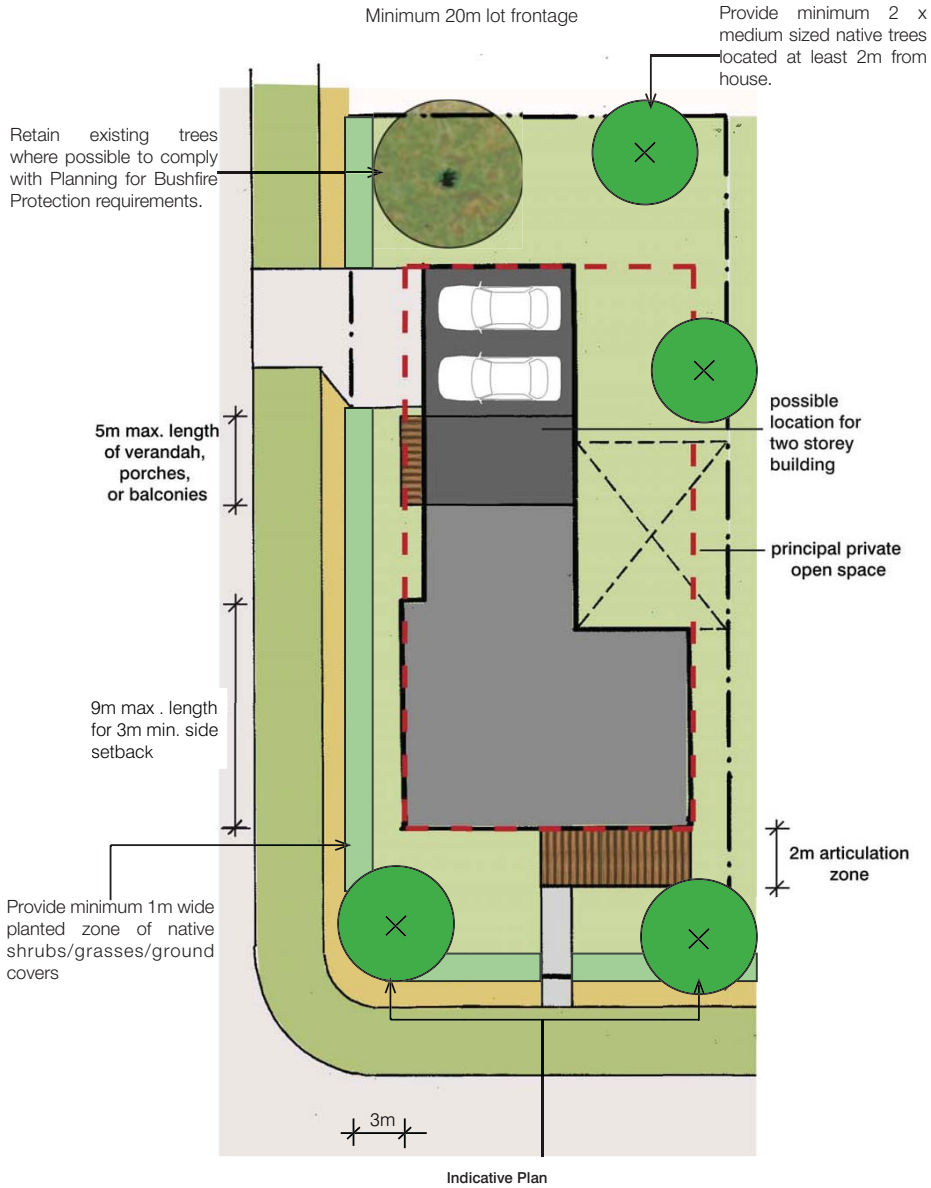


Figure B2.1.5 - Typical Corner Lot

B2.2 Site Coverage

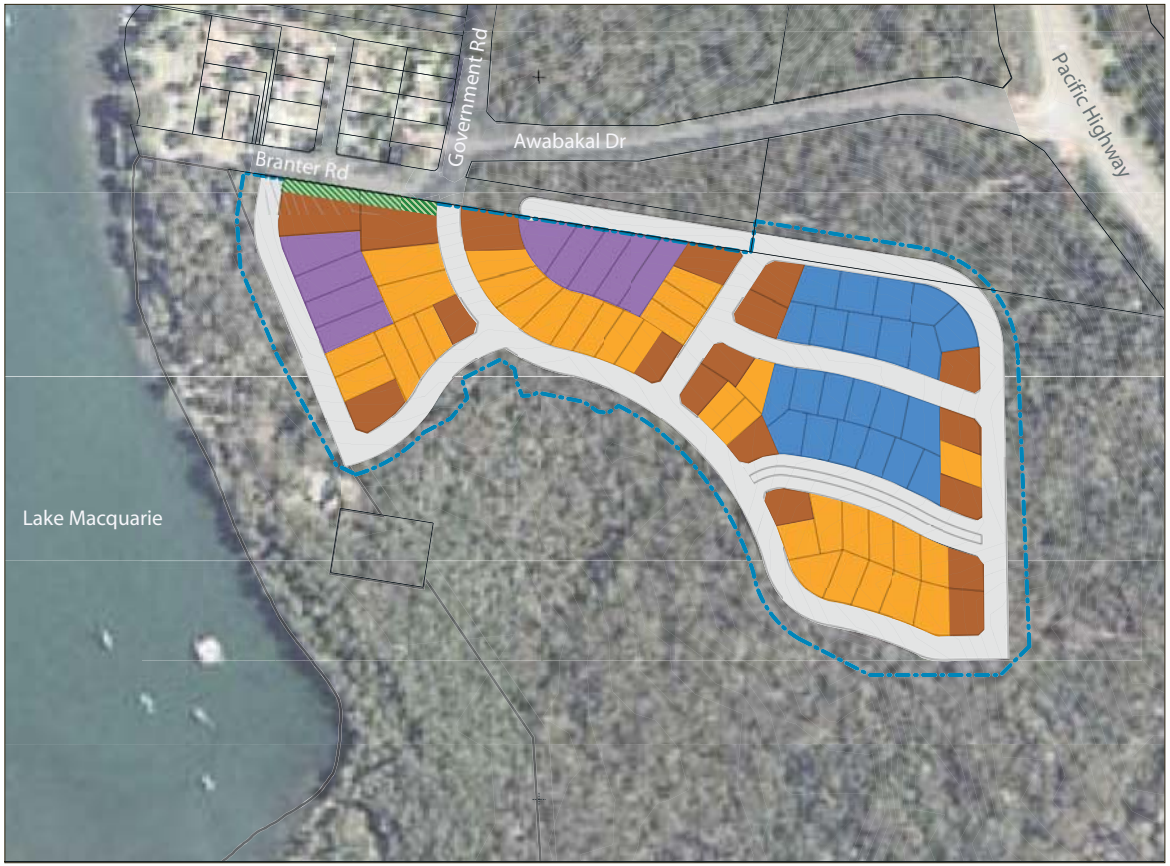


Figure B2.2.1 - Site coverage diagram

Objectives:

- Promote housing types appropriate to the lot size, shape, slope and orientation.
- Enhance landscape character of the neighbourhood and respond to its bush setting.
- Reinforce the street hierarchy and characters.
- Provide residential amenity within the site and between adjacent properties.
- Encourage retention of existing trees, where possible.

Controls:

Individual lots are to be planned to meet the following:

Lot Types	Village Houses	Bushview Houses	Lakeview and Hillside Houses	Corner Lots
Min Site Frontage	15m	20m	18m	20m
Min Site Area	450m^2	570m^2	900m^2	600m^2
FSR	N/A	N/A	N/A	N/A
Max Site Coverage*	50%	50%	40%	50% < 900m 40% > 900m^2

- Note: site coverage means the proportion of a site area covered by buildings. However, the following are not included for the purpose of calculating site coverage:

(a) any basement,

(b) any part of an awning that is outside the outer walls of a building and that adjoins the street frontage or other site boundary,

(c) any eaves,

(d) unenclosed balconies, decks, pergolas and the like.

- The maximum area of ancillary structures such as sheds is to be 40m^2.

B2.3 Building Height

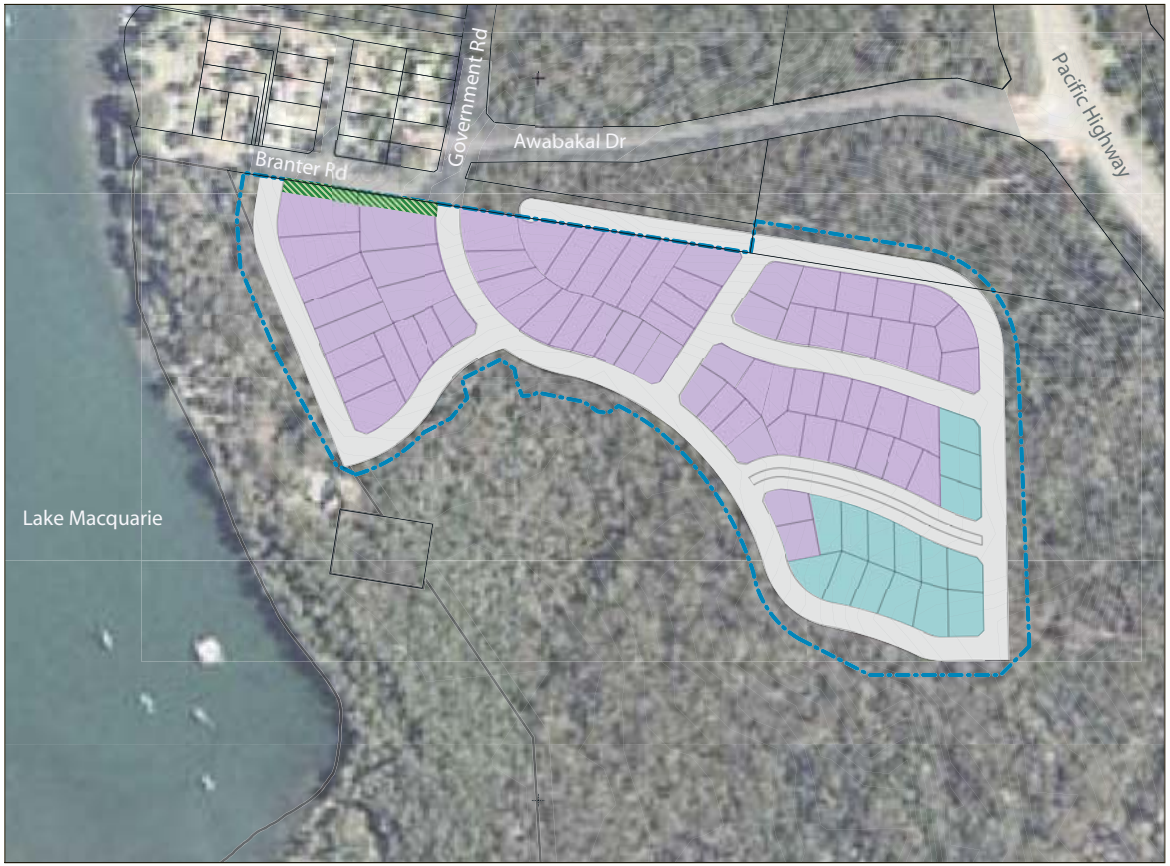


Figure B2.3.1 - Building heights diagram

Objectives:

- To ensure houses are designed in proportion to their site.
- To minimise overshadowing of private open space within the lot and on adjacent lots.
- To ensure solar access to principal living areas and promote good environmental performance.
- To enable sharing of views to the lake and parkland reserves.
- To ensure development responds to mining constraints.

Controls:

- The overall height limit of dwellings is to be 2 storeys and 8.5 m.
- The overall height limit of detached garages or carports is to be 3.5m.
- Building height is to be distributed to maximise solar access in response to lot orientation and slope.
- Ceiling heights are to be a minimum of 2.7m.

B2.4 Streetscape & Street Setbacks

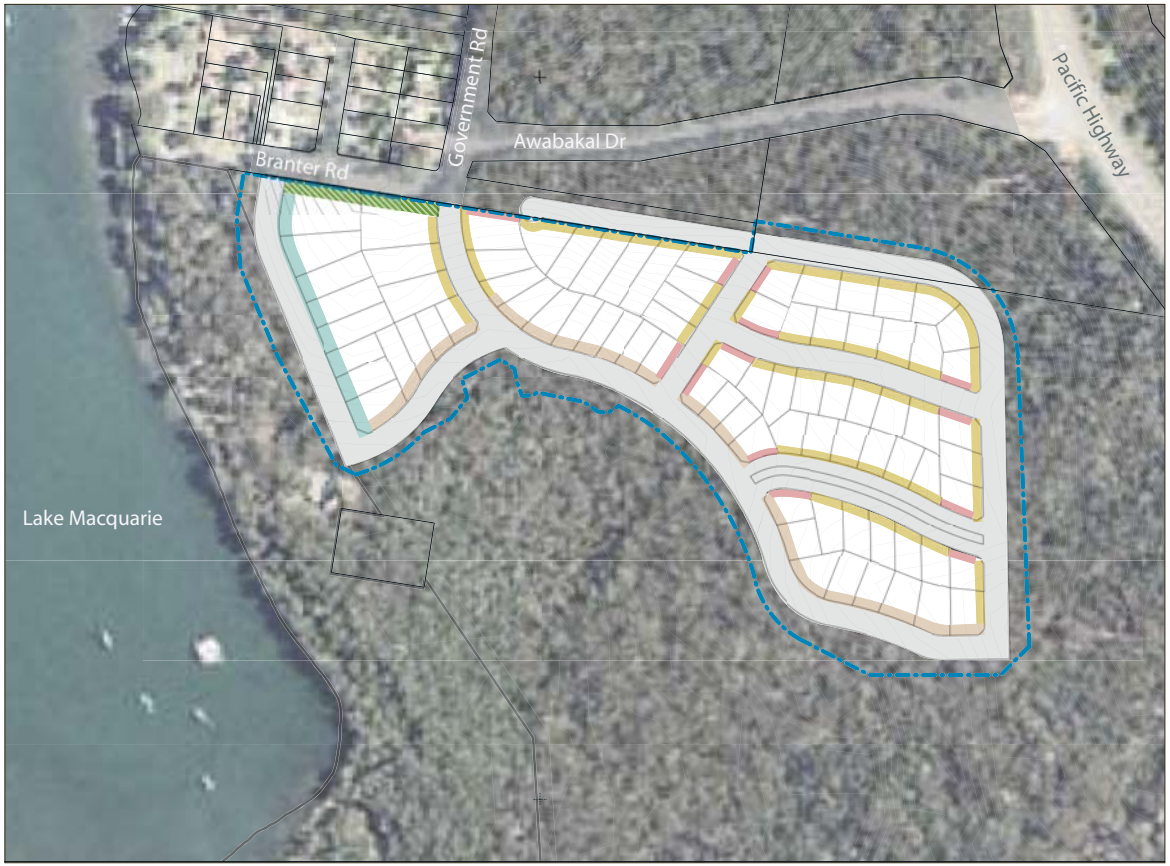


Figure B2.4.1 - Streetscape & street setbacks diagram

Objectives:

- To ensure that development enhances the visual character and amenity of the street in response to the street hierarchy.
- To ensure buildings address the street and are designed to provide surveillance of streets and public open spaces.
- To ensure buildings on corners sites address both streets.
- To promote planting in front gardens.
- To incorporate APZ's in response to bush fire requirements.
- To limit the visual impact of garage frontages along the street.
- To promote a building expression that utilises outdoor rooms in the form of verandahs, front porches, balconies and decks along the street frontage.
- To reduce the visual impact of boat parking along the primary street frontage.

Controls:

Individual lots are to be planned to meet the following:

	Village Lots	Bushview Lots	Lakeview and Hillside Lots
Street Setback	Provide street setback in accordance with Figures B2.4.1: Street Setback Plan.		
Corner Lots – Secondary Frontage *	3m	3m	3m .
Garage Setback on Primary Street (min.)	Minimum 1m setback from the primary building frontage	Minimum 1m setback from the primary building frontage	Minimum 1m setback from the primary building frontage
Garage Setback on Secondary Street (min.)	N/A	N/A	N/A

*Note: On corner lots, secondary frontage may be a secondary street or a public open space.

- Verandas, porches, balconies and decks are required in the articulation zone. They may project maximum of 2m into the primary street setback unless the lot has APZ constraint.
- On corner lots verandahs, porches, balconies and decks may project maximum of 1m into the secondary street setback for a maximum distance of 5m.
- The maximum carport and/or garage door width is to be not more than 3m for single and 6m for double garages or 50% of the lineal building frontage, whichever is the lesser.
- Driveways are to be a maximum 4m wide at street/front boundary.
- A maximum 2 resident car parking spaces are permitted. Parking may be tandem and both spaces are to be covered.
- Boat parking areas are to be provided behind the primary building frontage.
- Dwellings are to address the street with entries located clearly visible from the street.
- On corner lots locate the house entry on the long side of the lot to avoid a long blank wall providing little surveillance.

B2.5 Setbacks

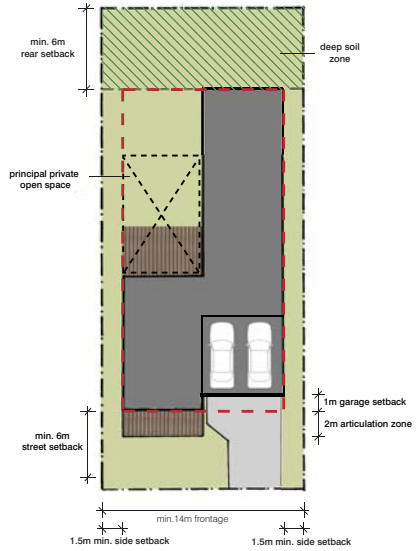


Figure B2.5.1 - Village Houses

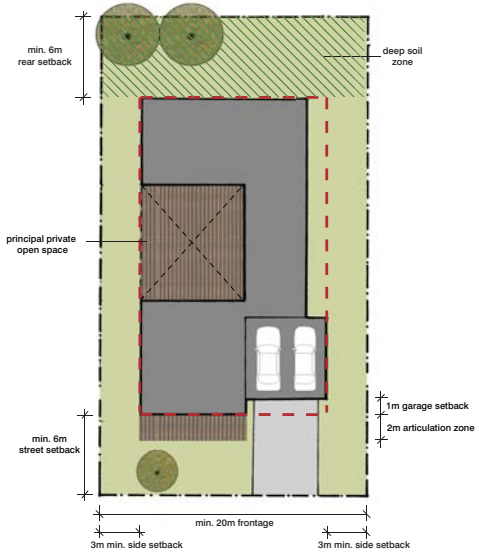


Figure B2.5.2 - Bushview Houses

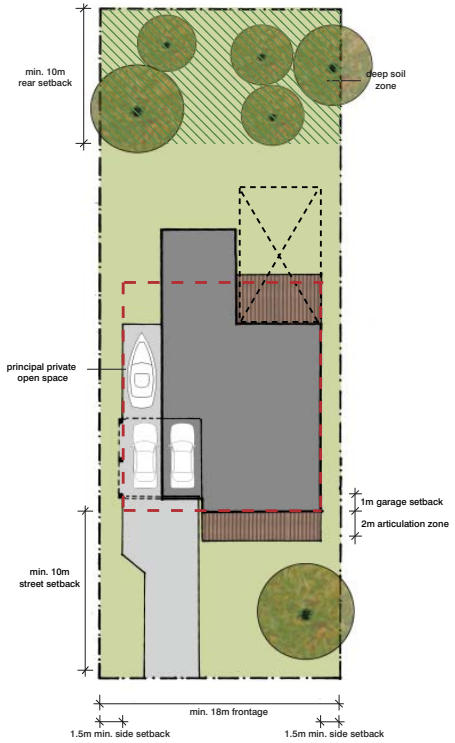


Figure B2.5.3 - Lakeview & Hillside Houses

Objectives:

- To provide privacy for residents and neighbours and minimise overshadowing.
- To provide a visual break between buildings.
- To contribute to the landscape setting by planting between houses and within rear gardens.
- To retain and enhance mid-block tree planting to reinforce the bush setting of the estate.
- To enhance the landscape setting by providing views between houses on larger lots of rear garden tree canopies.

Controls:

Individual lots are to be planned to meet the following:

Lot Types	Village Lots	Bushview Lots	Lakeview and Hillside Lots	Corner Lots
Side Setback (min.)	1.5m	3m	1.5m	3m
Rear Setback* (min.)	6m	6m	10m	6m -10m

*Note: 80% of the rear setback is reserved as a deep soil zone, pools and sheds are allowed in the remainder of the rear setback.

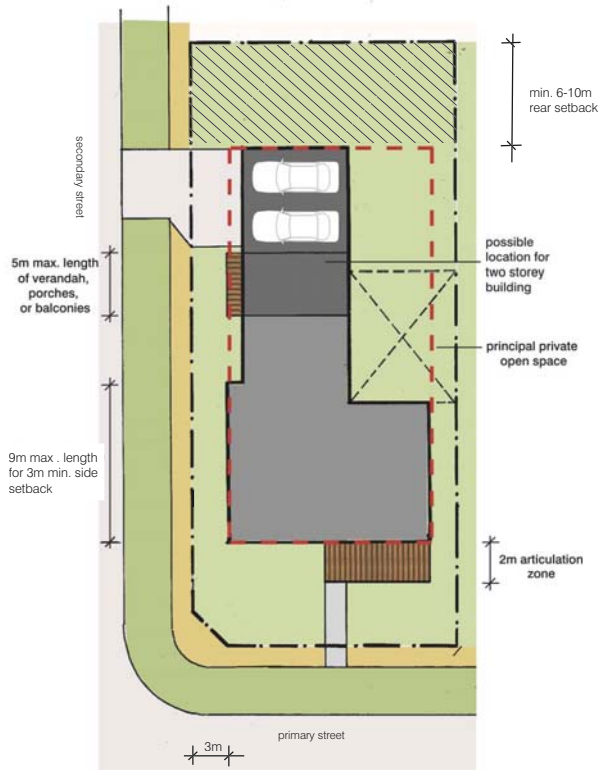


Figure B2.5.4- Secondary street setbacks diagram for corner lots.

B2.6 Private Open Space and Landscaping

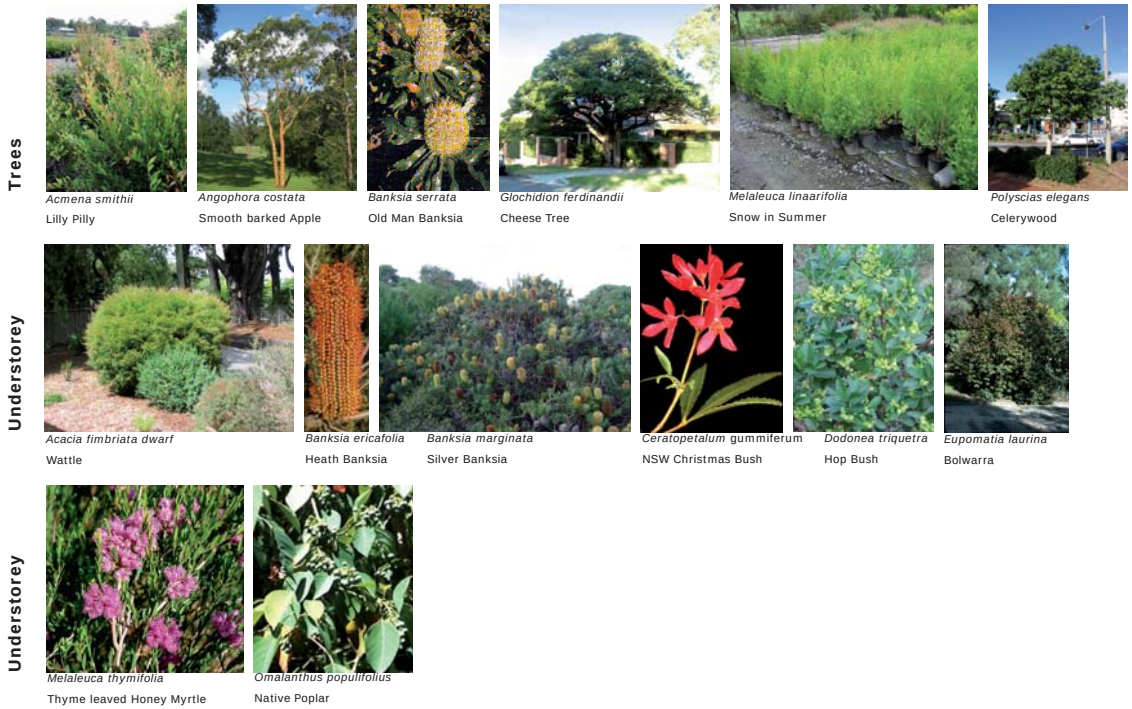


Figure B2.6.1 -Plant Types

Figure B2.6.2 - Fencing types

Objectives:

- To ensure useful and purposeful private open space is provided adjacent internal living areas.
- To reinforce the landscape setting of the estate.
- To promote tree retention on individual lots.
- To encourage consolidated tree retention/planting areas between adjoining properties.

Controls:

Individual lots are to be planned to meet the following:

Lot Types	Village Lots	Bushview Houses	Lakeview and Hillside Lots	Corner Lots
Principal Private Open Space	80m² with a minimum dimension of 6m	80m² with a minimum dimension of 6m	90m² with a minimum dimension of 6m	80m² with a minimum dimension of 6m
Minimum Landscape Area	40%	45%	55%	50%
Deep Soil Zones	Rear setback area	Rear setback area	Rear setback area	Rear setback area

- Locate principal private open space to the side or the rear of the lot and ensure it is directly accessible from living areas.
- Locate deep soil zone on lots along rear boundary and adjoining property's deep soil zones.
- The location of deep soil zones may be altered if collocated with the retention of existing trees.
- Outdoor rooms in the form of verandas, generous balconies and decks are encouraged. Where outdoor rooms occur on the second level, their location and detailing is to address privacy and overlooking issues.
- Areas of private open space are to achieve at least 3 hours of sunlight to 50% of the principal open space between 9 am and 3 pm on 21 June.
- Landscape area is any area that is landscaped by way of the planting of gardens, lawns, shrubs or trees in deep soil and includes permeable paving (such as unit paving laid on sand). It does not include driveways within the front setback or concreted areas.
- Utilise a minimum of 50% native plant species in gardens. Species selection to be primarily chosen from species shown opposite.

Fences

- No front fences are permitted. The front boundary to be defined by landscaping.
- Side fences are to return against the building at least 1m behind the front building line, be made of timber and be a maximum 1.8m high above adjoining ground level.
- Fences facing bushland are to be as unobtrusive as possible, be a maximum 1.8m high from adjacent ground level, made of open chain mesh, weldmesh or a palisade fence and be dark in colour.
- Sheet metal or solid panel fencing is not acceptable.
- Any fencing located within an APZ must be constructed of non-combustible materials.

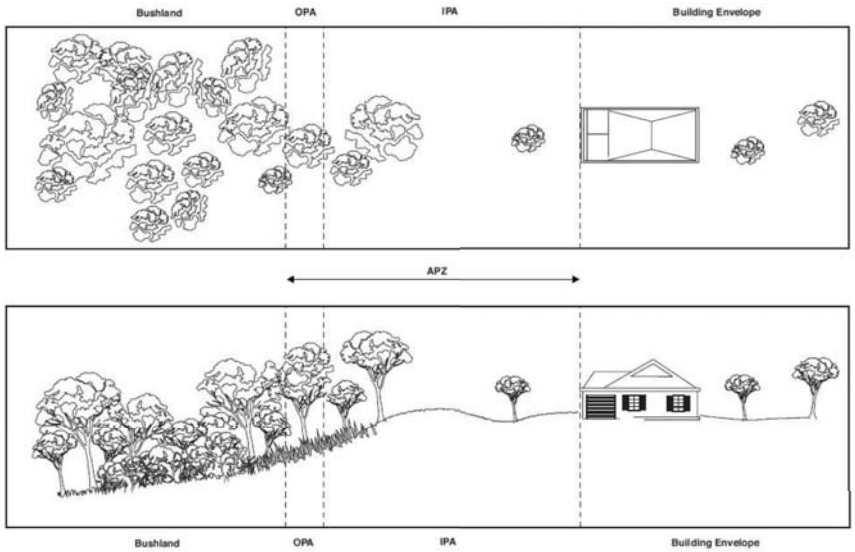


Figure B2.7.1 - Asset Protection Zone (APZ) showing Inner Protection Zone (IPZ) and Outer Protection Zone (OPZ).

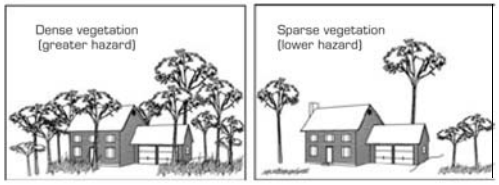


Figure B2.7.2 - Determining if an APZ is required

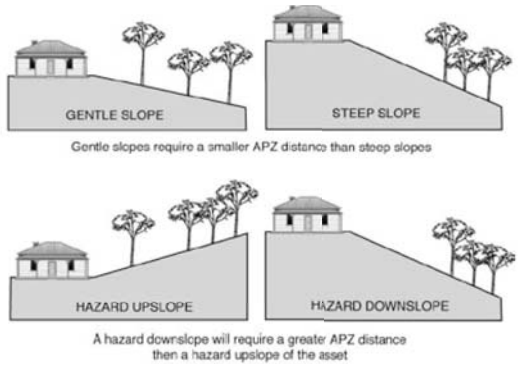


Figure B2.7.3 - Slope influencing the APZ

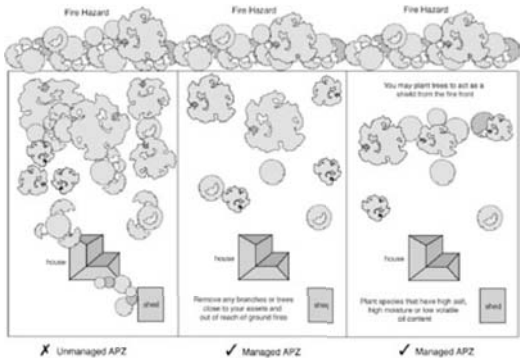
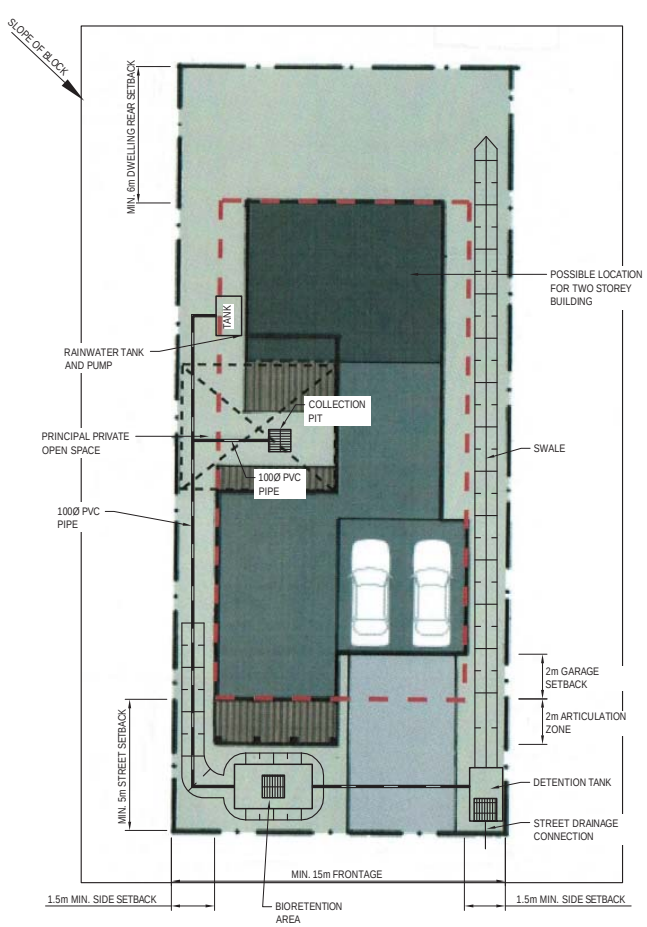


Figure B2.7.4 - Unmanaged and managed APZ's

Asset Protection Zone

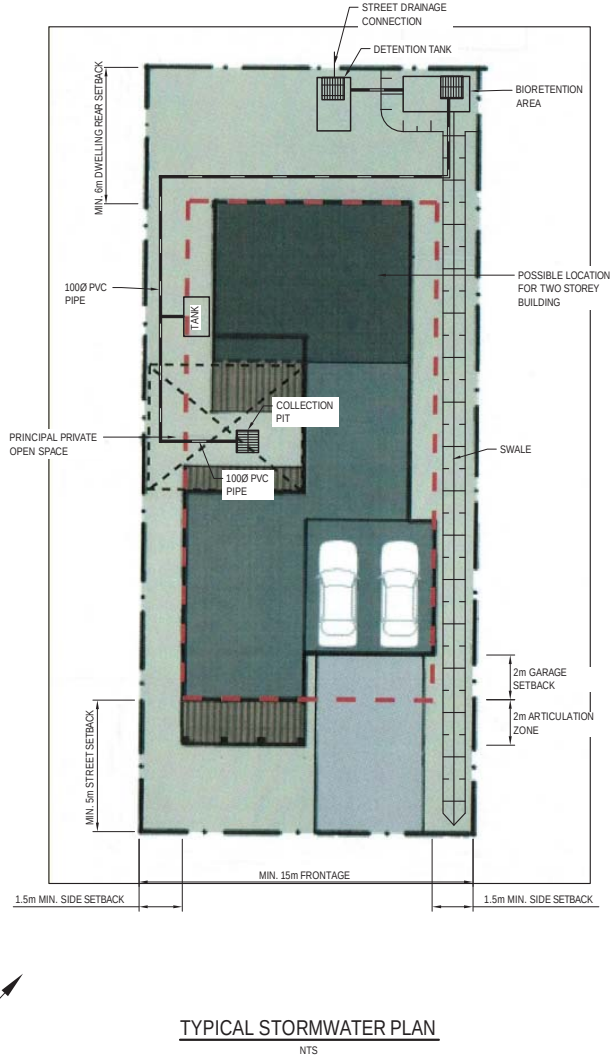
- The site is bushfire prone and any development should be consistent with the requirements of Planning for Bushfire Protection 2006.
- Reduction of fuel does not necessarily require the removal of all vegetation as often trees and plants can provide protection from strong winds, intense heat and flying embers and changing wind patterns. The management of existing vegetation involves both selective fuel reduction (removal, thinning and pruning) and the retention of vegetation. Valuable native trees and shrubs will be retained as clumps or islands.
- Each lot will need to comply with the APZ in detail as part of the DA process.

B2.8 Stormwater Management



TYPICAL STORMWATER PLAN
NTS

Figure B2.8.1 - Stormwater management for a dwelling on the high side of the road



TYPICAL STORMWATER PLAN
NTS

Figure B2.8.2 - Stormwater management for a dwelling on the low side of the road

Stormwater Management

The diagrams opposite show the accepted standards and the required facilities for stormwater collection and management for a typical house on minimum lot size of 450 sqm. Figure 2.8.1 shows the stormwater collection and management for a house on the high side of the road and Figure 2.8.2 shows the stormwater collection and management for a house on the low side of the road.