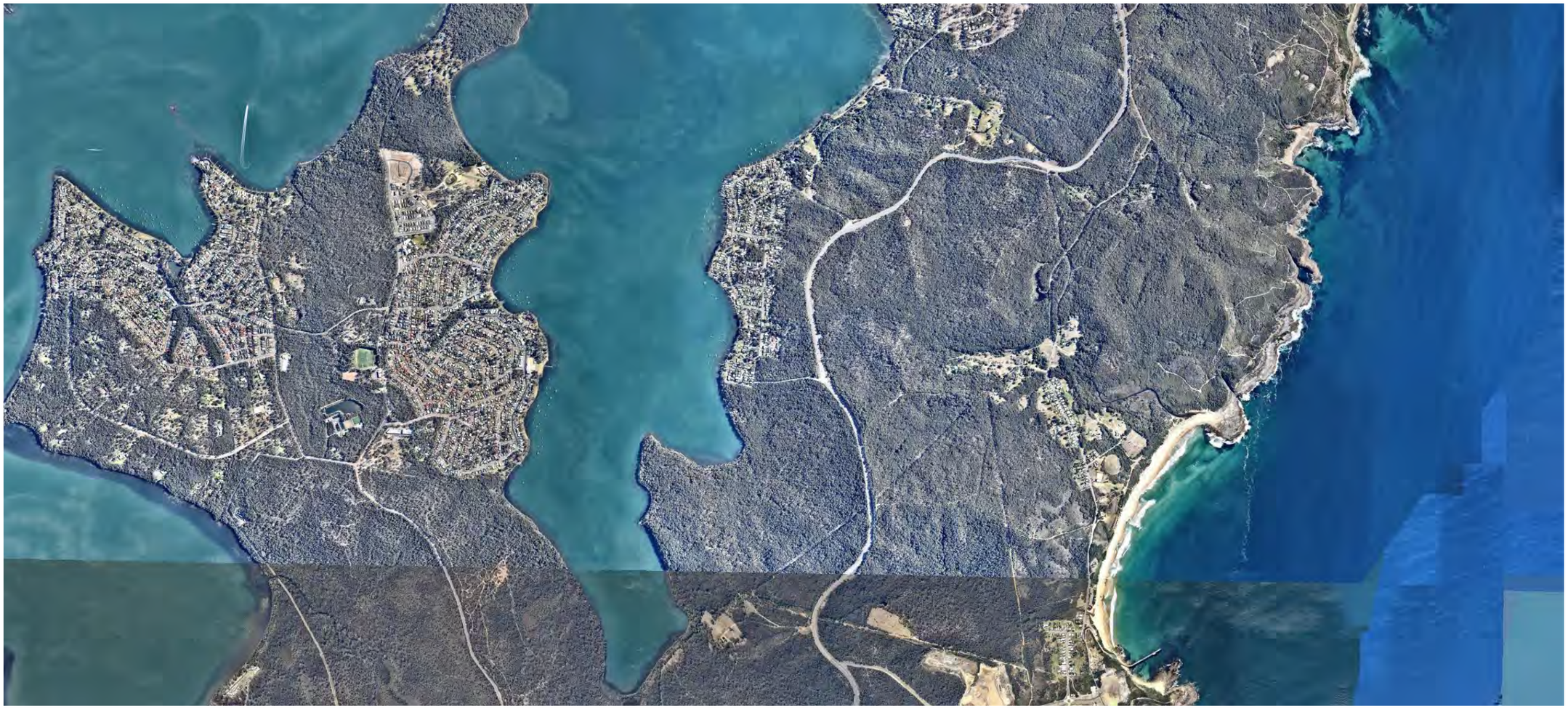
Appendix B

AMENDED DESIGN GUIDELINES

Nords Wharf Residential Estate

Urban Design Guidelines for Nords Wharf



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Introduction

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 are as 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 specifi c controls that relate to building types, densities, heights, setbacks and private open space.

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B1 Public Domain Plan

B2 Design Guidelines

B1

1.Public domain plan: Strategies

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

Regulatory objectives:

- To meet requirment of Lake Macquaire City Council Development Control Plans.
- Site coverage area for the individual sites as per the Lake Macquaire City Council Development Control Plans.
- Building height to follow Lake Macquaire City Council Development Control Plans.

Character objectives:

- Respond to the natural slope of the site.
- 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 native landscape. The landscape type of Eucalpytus robusta & Caesalpinia ferrea is to be developed in streets with 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.
- Bio Swale proposed with cobble drain channel and native macrophyte plants which are suited to drainage corridors, and appropriate for planting in APZ.
- 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.

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2.Public domain plan: Street & Buffer Types

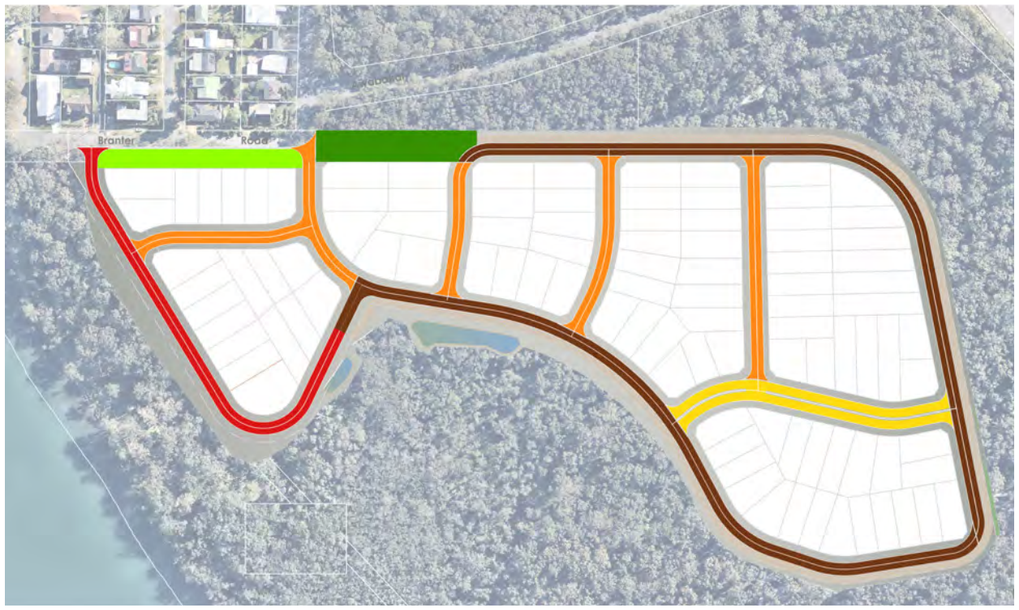

Figure B1.2.1 - Street & Buffer Types

KEY

- Street Type A1
  Local Street with swale
- Street Type A2
  Local Street with bio- swale
- Street Type B
  Local Street with central swale
- Street Type C
  Local internal/connector street
- Street buffer 1
  Along Branter Road
- Street buffer 1
  Buffer with Bio swale

The streets of Nords Wharf Residential Estate 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 various conditions around the site without being unnecessary complex.

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

Type A1, A2

- 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.
- These streets 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 lush vegetation in front of the adjoining bushland.

Type B

This street includes the wider street type that includes a central swale to accommodate Larger flows of stormwater.

Type C

- 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 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.
- This street type will have 1.2M footpaths on one verge, parallel parking on both sides, kerbs and gutters.

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2.Public domain plan: Street Types

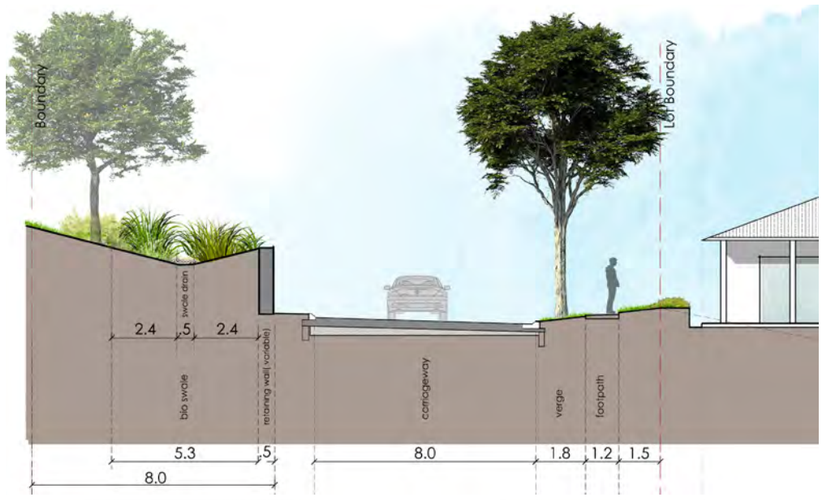

Figure B1.2.2 - Street Type A1

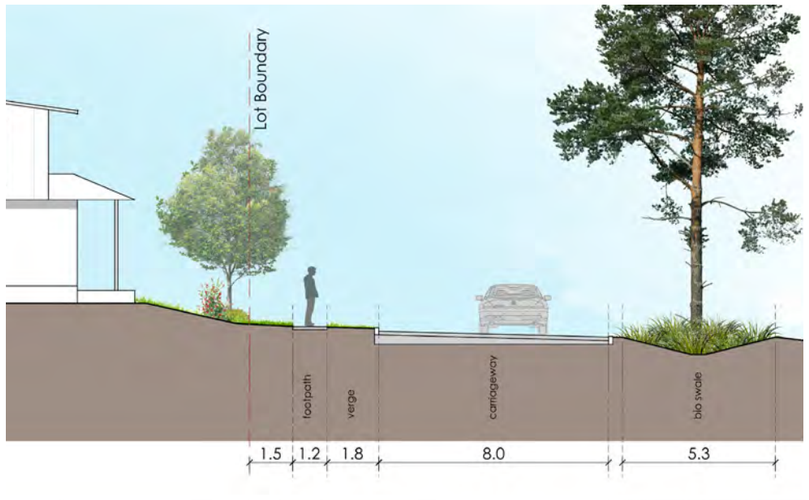

Figure B1.2.3 - Street Type A2

Key plan

Street Type A1
Local Street with swale : 1

Street Type A2
Local Street with Bio swale : 1

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2.Public domain plan: Street Types

Key plan

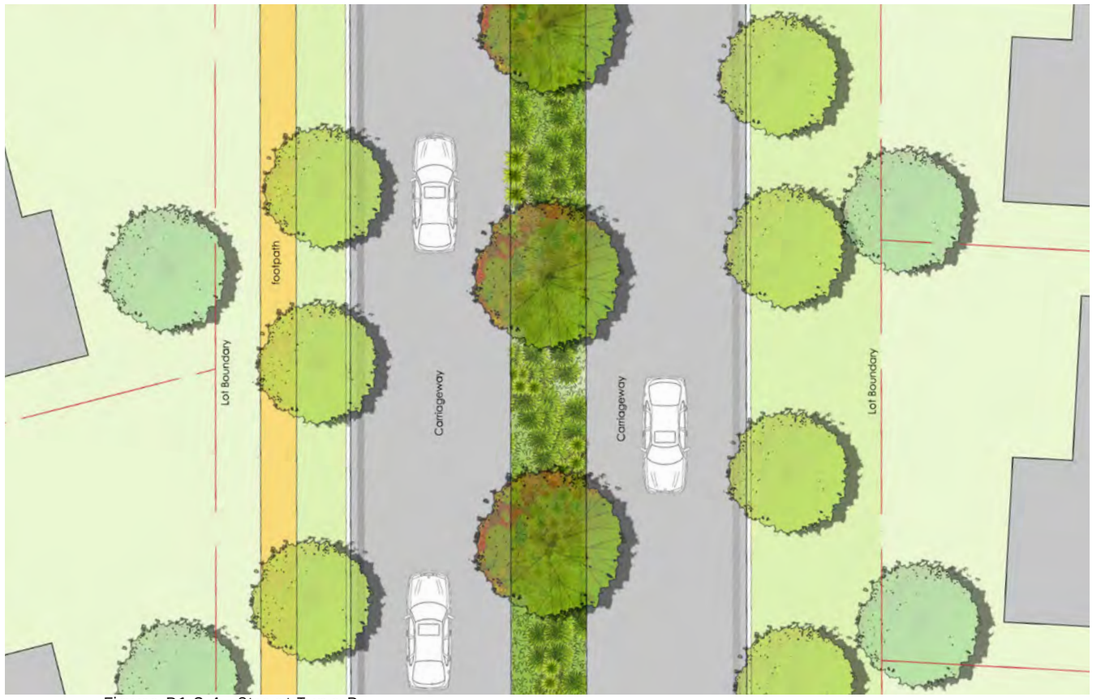

Figure B1.2.4 - Street Type B

Street Type B
Local Street with swale : 1

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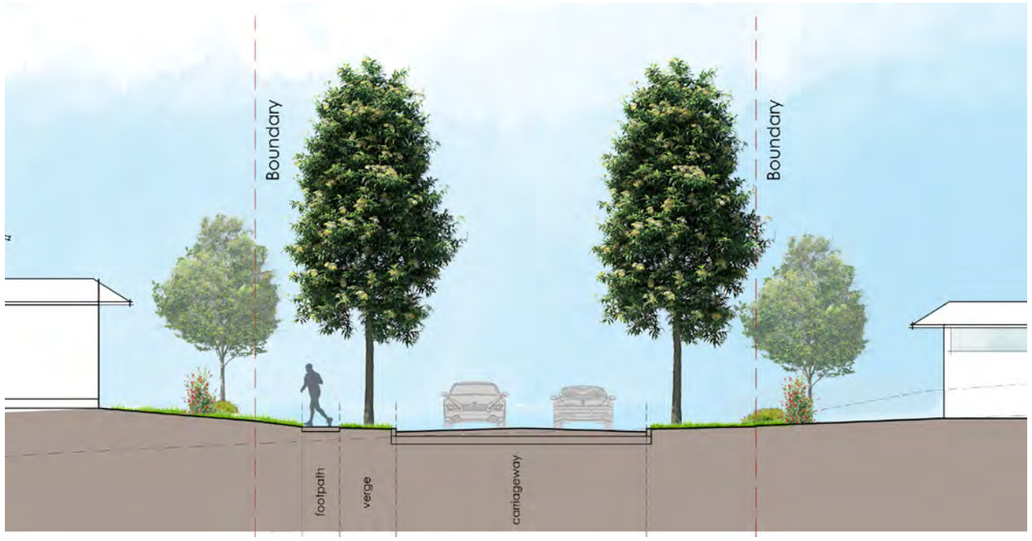
2.Public domain plan: Street Types



Key plan

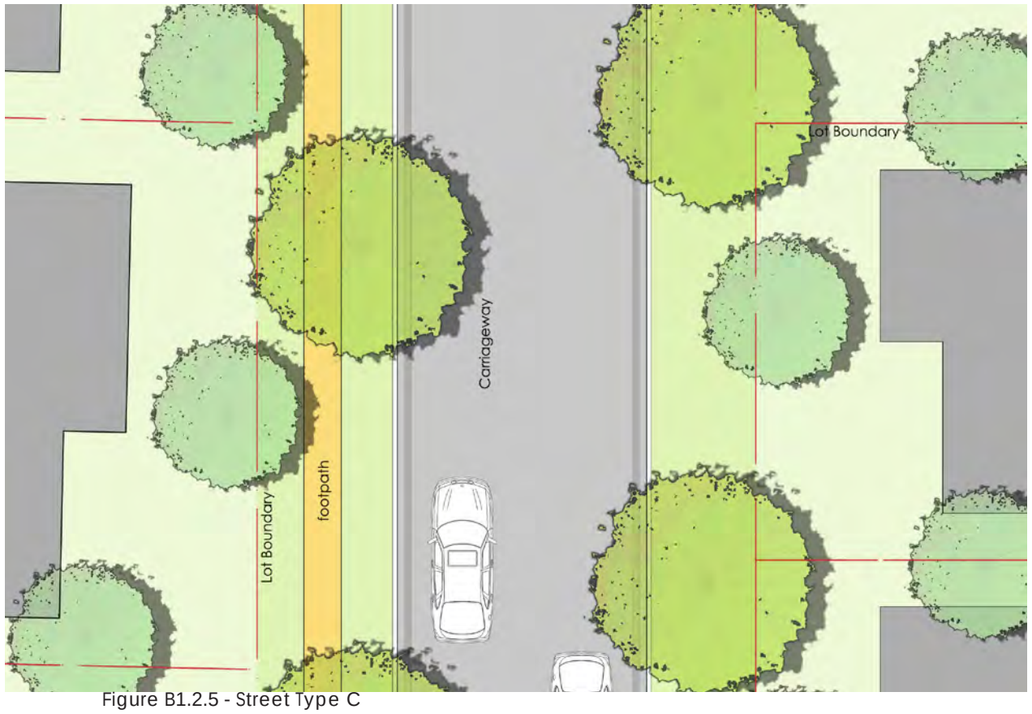


Figure B1.2.5 - Street Type C

Street Type C
Local internal/connector Street

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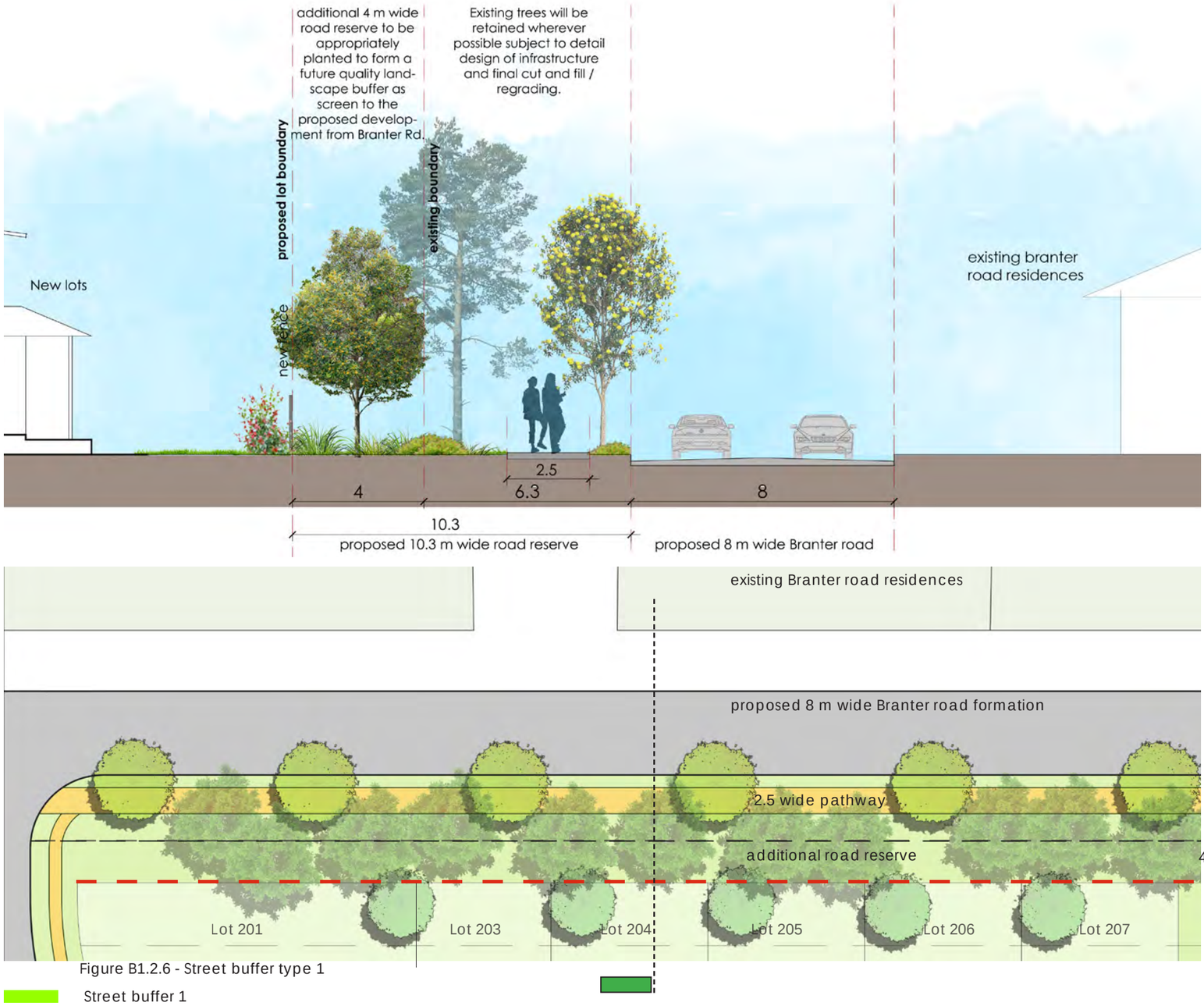
2.Public domain plan: Street buffer types



Key plan

Figure B1.2.6 - Street buffer type 1

Street buffer 1
Along Branter Road

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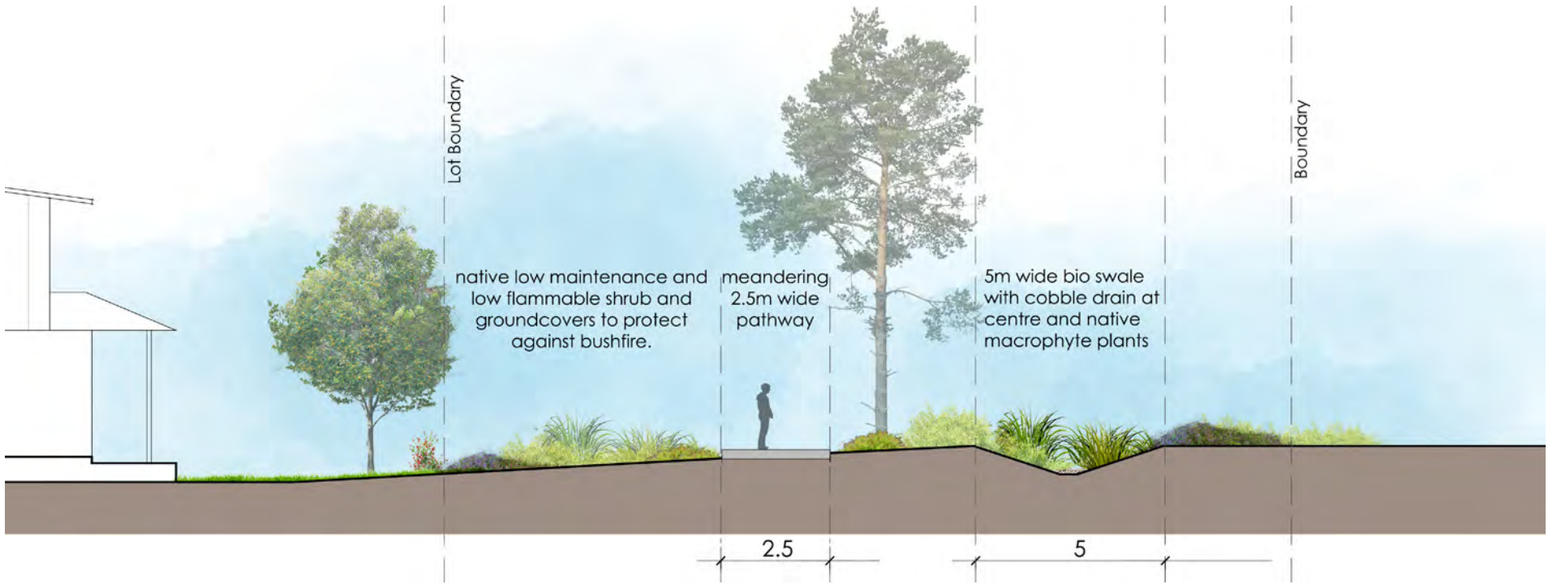
2.Public domain plan: Street buffer types



Key plan

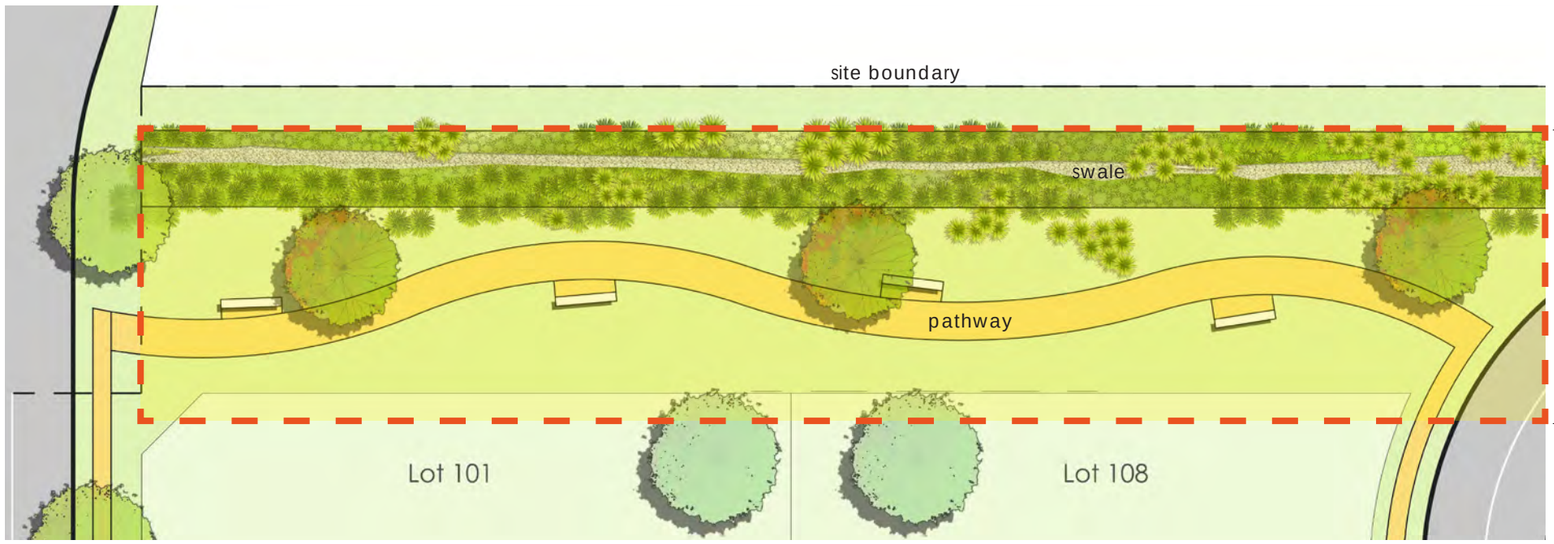


Figure B1.2.7 - Street buffer type 2

Street buffer 2
Buffer with Bio swale

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3.Public domain plan: Plant types and Materials

Trees in Road Verge

Xanthostemon chrysanthus
Golden Penda

Caesalpinia ferrea
Leopard tree

Eucalyptus robusta
Swamp Mahogany

Backhousia citriodora
Lemon Scented Myrtle

Swale Trees

Cupaniopsis anacardioides
Tuckeroo

Elaeocarpus reticulatus
Blueberry Ash

Glochidion ferdinandii
Cheese Tree

Syzigium paniculatum
Magenta Cherry

Bioswale Trees

Acmena smithii
Lilly pilly

Melaleuca Styphelioides
Prickly paperbark

Callistemon salignus
White bottlebrush

Tristaniopsis laurina
Water gum

Bio swale Understorey

Carex appressa
Tall sedge

Crinum pendunculatum
Swamp Lily

Dianella caerulea
Flax Lily

Gahnia sieberiana
Saw sedge

Lomandra longifolia
Matt Rush

Figure B1.3.1 - Plant Types

Plant palette

- Plant palette will be dominated by local and native 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

- Tall trees like lEucalyptus robusta/ Caesalpinia ferrea etc is to be developed in streets and parking lanes to create 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.

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1.Design Guidelines: Building Types

Figure B2.1.1 - Lot Types

Level lots/ Slab on ground - 47 Nos.

Upslope lots - 18 Nos.

Downslope lots - 7 Nos.

Side slope lots - 9 Nos.

Objectives:

- To minimize earth movement, reduce cut and fill.
- 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.

Level Lots / Slab on ground

- Detached dwellings on one level.
- Minimum site area of 505 m²
- 14 m minimum lot frontage with front access.
- Typically with east-west or north- south direction.

Upslope lots

- Detached dwelling with minimum 14 m minimum lot frontage.
- Located on a slope with two levels of building, typically front part at lower level.
- Minimum site area of 588 m²
- These lots have various orientation.

Downslope Lots

- Detached dwellings with minimum 14m min. lot frontage.
- Located on a slope with two levels of building, typically front part at upper level.
- Mimimum lots area 519 m²
- Typically with east-west direction.

Side slope lots

- Detached dwellings with minimum 15 m min. of lot frontage.
- Located on a slope with two halves of builing in two levels.
- Minimum site area of 563 m²

Retaining walls

- Retaining wall height hould generally be limited to 1 metre, and must not exceed 1.5 metres at any one point
- Located fully within the boundaries of the subject property.
- Constructed in decorative masonry or similar high quality materials

Cut and fill

- Cut and fill to meet requirment of Lake Macquaire City Council Development Control Plans
- On sloping sites, floor construction is to be in different level to reduce cut and fill.

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2.Design Guidelines: General arrangement

Level lots / Slab on ground

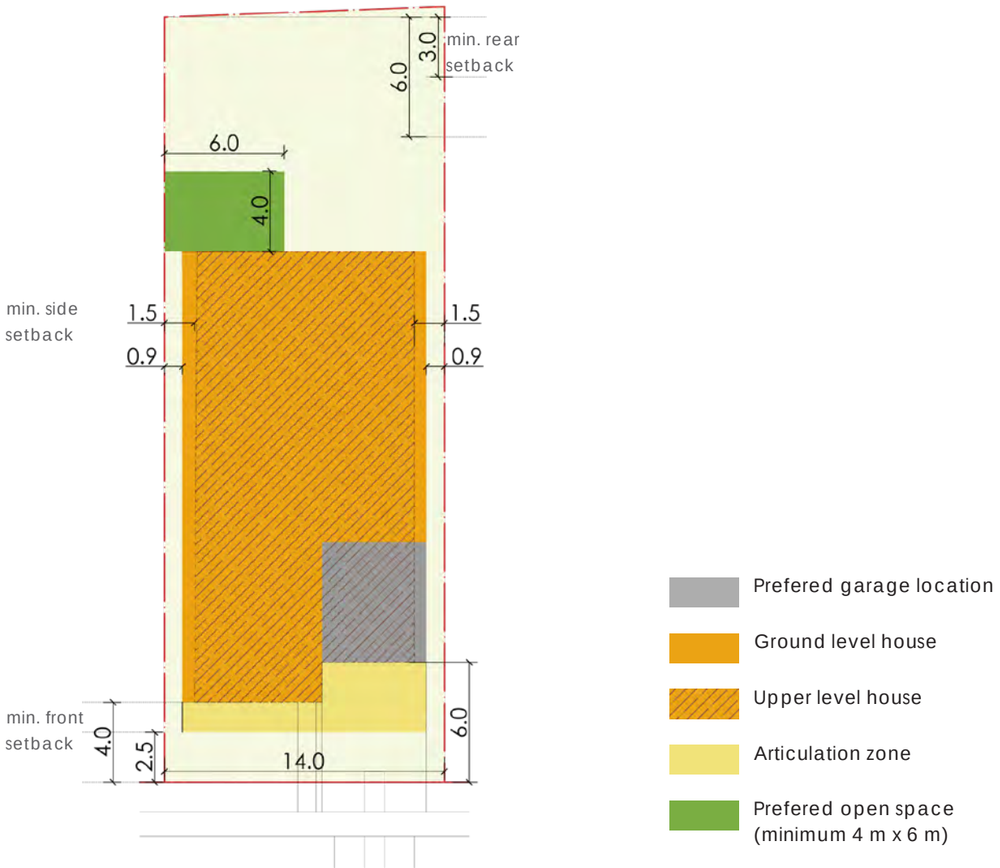

Figure B2.2.1 - Level lots location

Notes

- the envelopes depicted indicate the bounds to which any future development should be located within.
- the envelopes shown do not necessarily comply with maximum site coverage criteria if the full envelop is utilised. detailed assessment of site coverage should be considered during dwelling design phase.
- The private open space allocation indicates minimum size only and does not necessarily guarantee meeting minimum performance controls.

Figure B2.2.2 - Double storeyed level lots/slab on ground

Figure B2.2.3 - Sinlgle storeyed level lots/slab on ground

2.Design Guidelines: General arrangement

Up slope lots

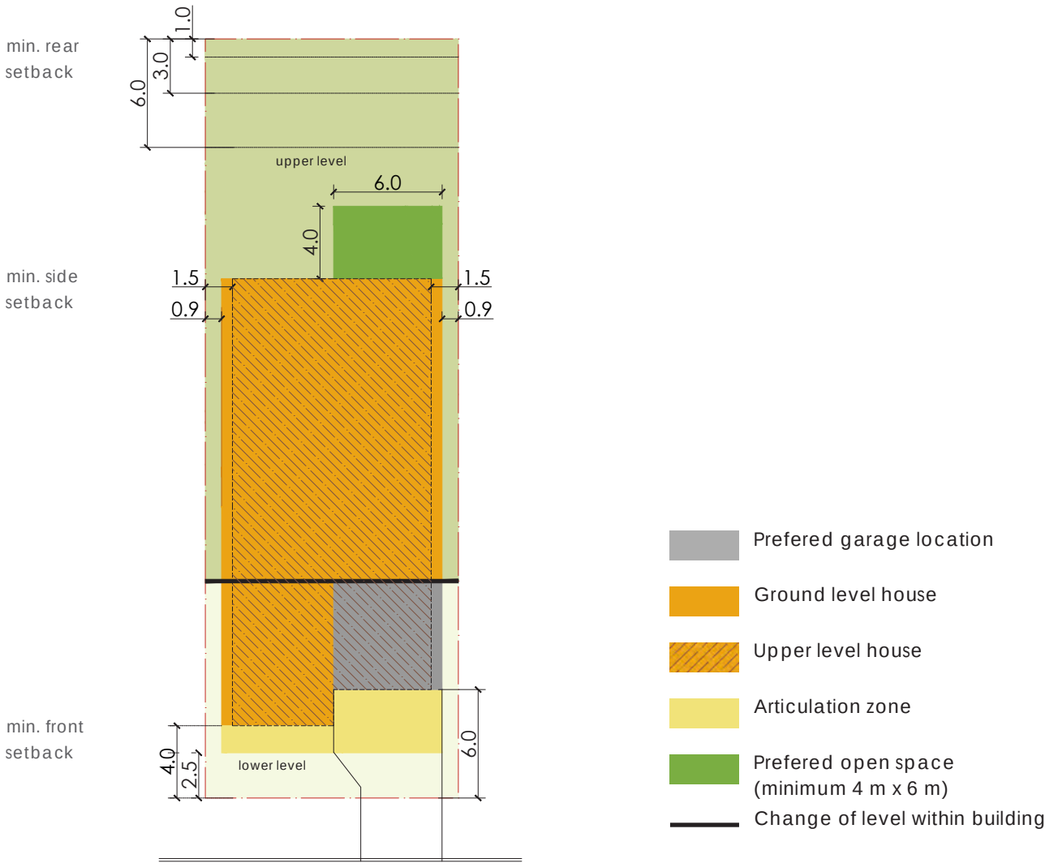

Figure B2.2.4- Upslope lots location

Notes

- the envelopes depicted indicate the bounds to which any future development should be located within.
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- The private open space allocation indicates minimum size only and does not necessarily guarantee meeting minimum performance controls.

Figure B2.2.5 - Upslope lots side elevation

Figure B2.2.6 - Upslope lots front elevation

2.Design Guidelines: General arrangement

Down slope lots

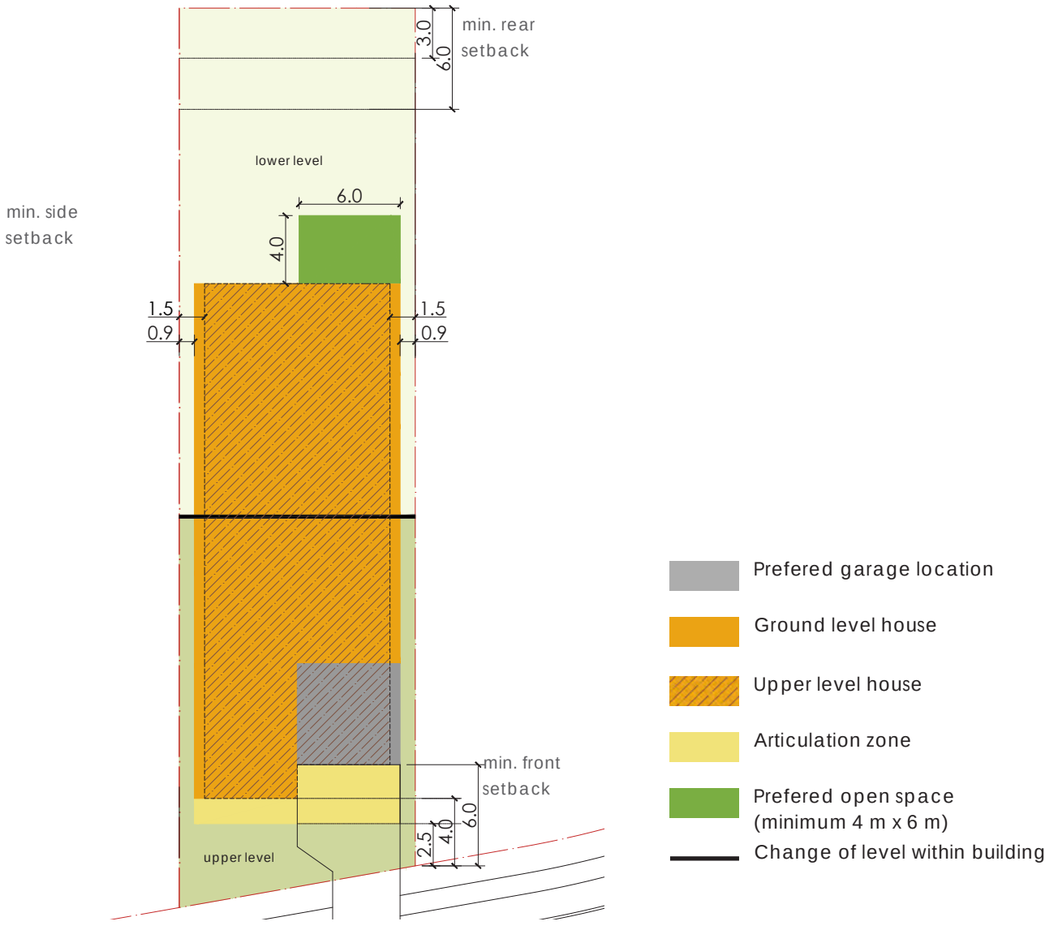

Figure B2.2.7- Downslope lots location

Notes

- the envelopes depicted indicate the bounds to which any future development should be located within.
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- The private open space allocation indicates minimum size only and does not necessarily guarantee meeting minimum performance controls.

Figure B2.2.8 - Downslope lots side elevation

Figure B2.2.9 - Downslope lots front elevation

Figure B2.2.10 - Downslope lots rear elevation

2.Design Guidelines: General arrangement

Side slope lots

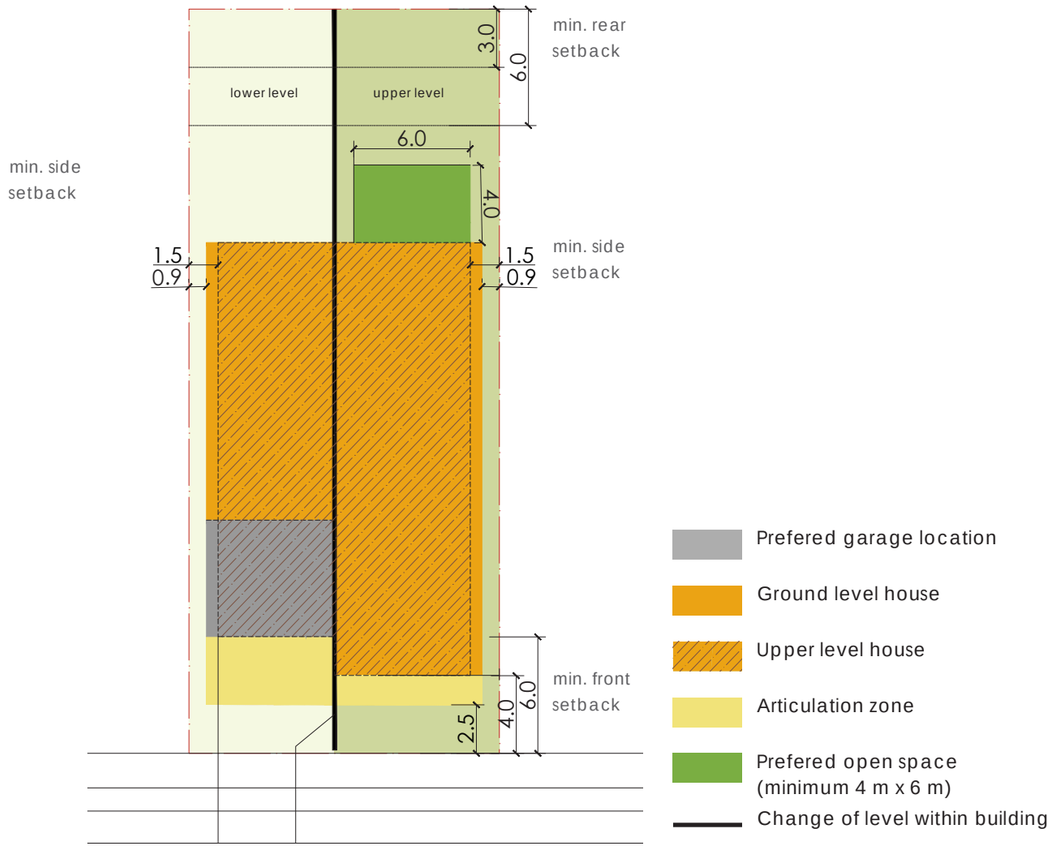

Figure B2.2.12 - Side slope lots

Figure B2.2.11 -Sideslope lots location

Notes

- the envelopes depicted indicate the bounds to which any future development should be located within.
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- The private open space allocation indicates minimum size only and does not necessarily guarantee meeting minimum performance controls.

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3.Design Guidelines: Streetscape & Bushfire Setback

Streetscape & Bushfire setbacks

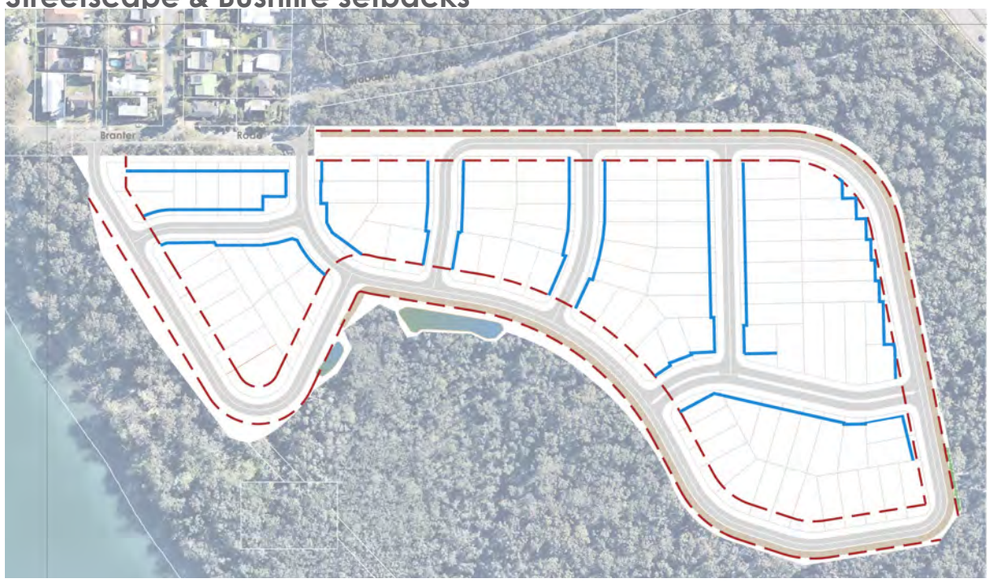

Figure B2.3.1 - Streetscape & Setbacks

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.

	Level Lot	Upslope	Down slope	Side slope
Corner Lot secondary frontage	2.0 m	2.0 m	2.0 m	2.0 m
Garage setback on primary Street		Minimum 1.0 setback from the primary building frontage.	Minimum 1.0 setback from the primary building frontage.	Minimum 1.0 setback from the primary building frontage.
Street Setback	As per Lake Macquaire City Council Development Control Plans - 4 m			

4.Design Guidelines: Private Open Space & Landscape

Trees

Tristaniopsis laurina
Water gum

Alphitonia excelsa
Red Ash

Banksia serrata
Old man Banksia

Melaleuca linaarifolia
Snow in Summer

Understorey

Acmena smithii
Lilly pilly

Acacia fimbriata dwarf
Dwarf wattle

Banksia marginata
Silver banksia

Ceratopetalum gummiferum
NSW Christmas bush

Figure B2.4.1 - Plant types

Objectives:

- To provide useful and purposeful private open space 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:

- 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