



# Coal & Allied Southern Lands

## Appendix B: Urban Design Guidelines for Catherine Hill Bay Middle Camp

January 2013  
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**Appendix B: Urban Design Guidelines for Catherine Hill Bay** provides detail information on the public domain and built form. It describes how to achieve the principles of Appendix A: Concept Plan Principles for Catherine Hill Bay.

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, amenity, program for open spaces and sustainability of the streets and parks. It also includes 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.

## Public Domain

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## Introduction

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## B1.1 Public Domain Strategy

**General**

The public domain plan addresses:

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

For the purpose of this document the future public domain includes all areas such as streets, walking paths and parks within the estate that will be in community or public ownership and will be managed by community or government agencies.

**Site objectives**

Character:

- To retain the dominance of the natural landscape.
- To enhance and enrich the existing landscape character.
- To enhance the casual and informal character of the region.
- To maximise views to natural features within 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:**

- To provide shade in the public and private domain.
- To provide comfortable, direct and legible connections for all modes of transport.
- To provide opportunities for resting and weather protection at key locations within the public domain.
- To ensure safety throughout the public domain with application of CPTED principles.

**Program:**

- To provide a diverse range of settings in the public domain that will permit a range of activities for the community.
- To provide settings in public domain for some activities for regional users.
- To provide flexibility in all public domain settings to suit a range of activities.
- To provide access and parking for cars and bicycles at all activity nodes.

**Sustainability**

- To plan and design energy efficiency in built form through the use of topography and vegetation.
- To provide for a water management system in 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**

The plan reinforces two main landscape sub-types and provides an order that relates the settlement pattern to these landscape types. The character of the streets and private development is to be controlled so that development respects and enhances the qualities of the surrounding bush.

On the northern development areas which are currently cleared (A and B) there will be the introduction of a taller tree type, the smooth barked apple, endemic to the site's edges. It will be planted to create a park-like landscape with minimal understorey. Streets in this area will be broad with bushland views at each end. The streets will frame these views. Low densities will ensure the primacy of landscape and the richness and texture of the vegetation. They will allow views to distant ridge lines along tree lined streets rather than across rows of numerous houses. Parks will be located in Area B, providing interpretation of the mining heritage and green areas of diverse play which can link residents to the foreshore walk.

**Amenity**

The key aspects of amenity embodied in the landscape concept plan are as follows:

- The street layout is designed to provide safe walking and bicycle routes that link the sites with the coast, the heritage pathways and the existing services. The provision of short blocks encourages permeability and the grid encourages legibility.
- 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.
- Three recreational parks will be located in the northern areas, central to the densest development area.
- The parks will have a focus on active recreation and will be centred around existing heritage items. The parks will include shelter and picnic facilities.

**Program**

The concept plan provides a diversity of program.

- The parks will be programmed to suit the diverse needs of the community. Each park will have a number of nodes or meeting places on its edges. Each will provide controlled access to the bushland which will limit any broad scale damage to the sensitive environment.
- Workshop Park will include community facilities on rolling grasslands. Lemon Tree Park will have lawns and an interpretation of former gardens in the area. Gateway Park will provide a flat grass expanse and peripheral facilities. The linear park along the drainage lines of Middle Camp Creek and the heritage walk that follows the former rail line will provide access through the site.

- The outer zone of the Asset Protection Zone provides the potential for additional local recreational places. It will form a linear park that acts as everyone's backyard where local and less formal spaces for safe recreation such as walking games and meeting can occur.

**Sustainability**

The landscape concept plan embodies a number of sustainability measures that are integrated into the landscape of the site.

Key components of sustainability are:

- Retention of existing trees.
- Introduction of plantings of endemic species to enhance biodiversity in streets which provide cross linking corridors through the site.
- Introduction of swales in most streets with native grass plantings to filter and cleanse first flush water run-off.



B1.2 Street types



Figure B1.2.1 - Street Types

**Street Typology**

The streets of Catherine Hill Bay are designated as one of three types with one sub-type. This will create a diversity and richness that responds to the different conditions around the site without being constrained by unnecessary complexity. The five types refer to:

- Edge streets that occur on the periphery of the development which include the APZ.
- Local streets that form the estate's grid.
- One way streets around parks.

The street types and their character, are described below:

**Type A1, A2 Streets**

- These streets are the periphery streets, distinctive because they will have parkland on one side and residential housing development on the other.
- These streets will be wider due to APZ requirements. Carriageways will be narrow, and one verge will be dedicated to a swale and buffer planting to filter and protect the conservation areas. The development verge will have a kerb a footpath and discontinuous tree and ground cover planting. Housing setbacks will accommodate the APZ requirements where necessary, in particular, along the southern boundary of Area B.
- A 1.2m wide footpath is to be located within 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 that are smaller and denser, providing a layer of lush vegetation in front of the adjoining bushland.

**Type B Streets**

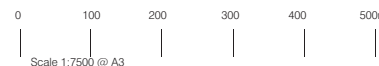
- These are local streets that form the majority of the streets within the development estate.
- In the heath landscaped-type they will be enclosed by heath species. They will include parallel parking on both sides and will include narrow setbacks to housing. New heath planting will be supplementary to the existing landscape. The ground plane will include native grasses.
- In the forest landscape type, streets will be framed by avenues of vegetation which will allow view corridors down the site. Tall trees will arch over the streets giving views to the bushland at the terminations of these short streets. Setbacks will be generous ensuring the forest character will prevail.
- This street type will have 1.2m footpath on one verge, parallel parking on both sides.
- These streets will have kerbs and gutters.

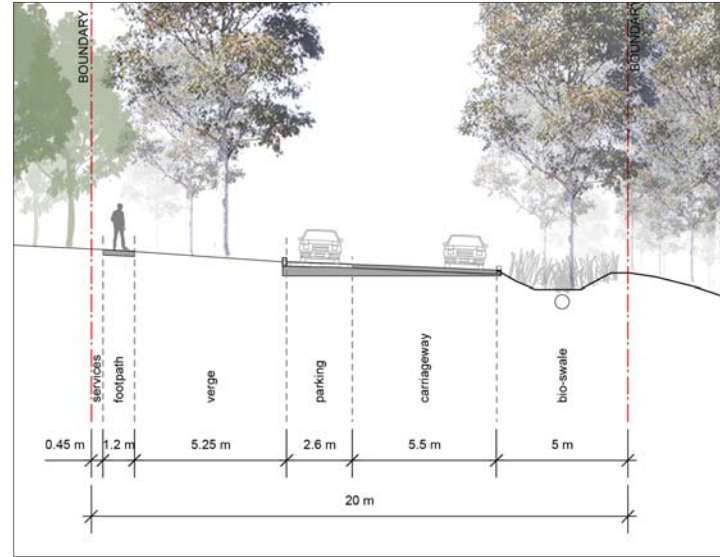
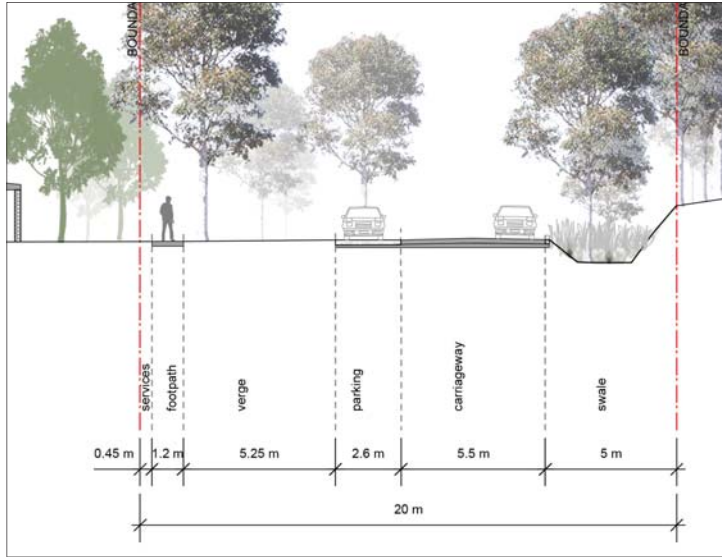
**Type F Streets**

- Type F streets border the urban parks. They are intended to be low speed with random tree planting that reinforces the character of planting in the park. They will have a footpath on the housing side of the street.

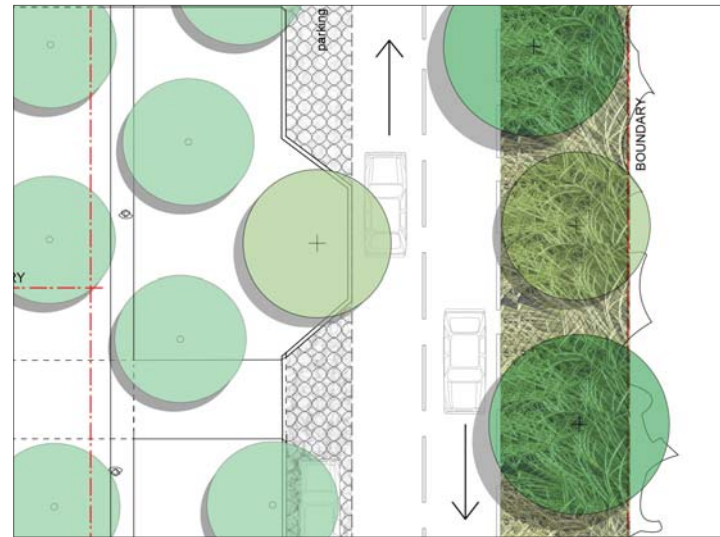
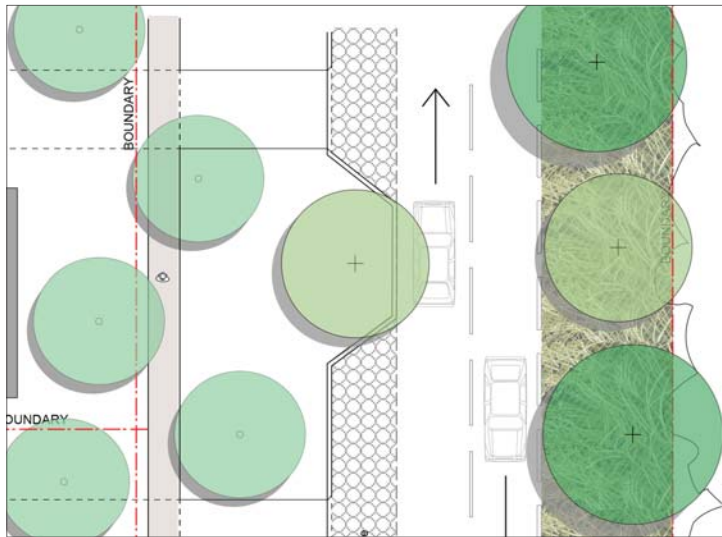
KEY

- Street Type A1  
Local Street with swale :20m wide
- Street Type A2  
Local Street with bio- swale :20m wide
- Street Type B  
Local Street :17m wide
- Street Type F  
Local Street :9m wide





Location plan



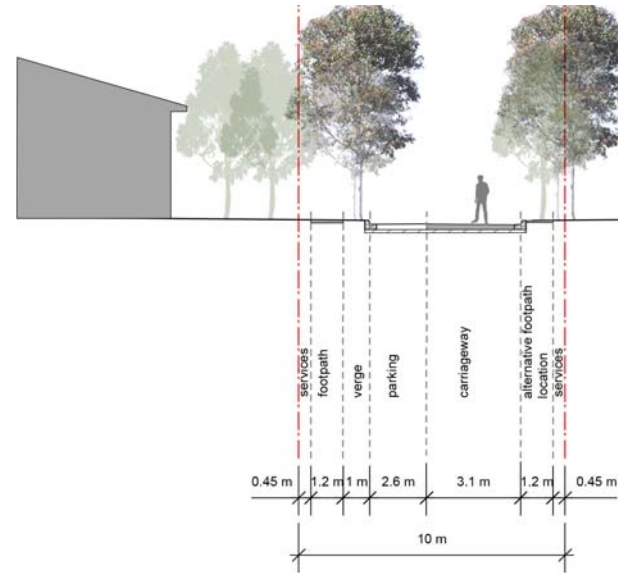
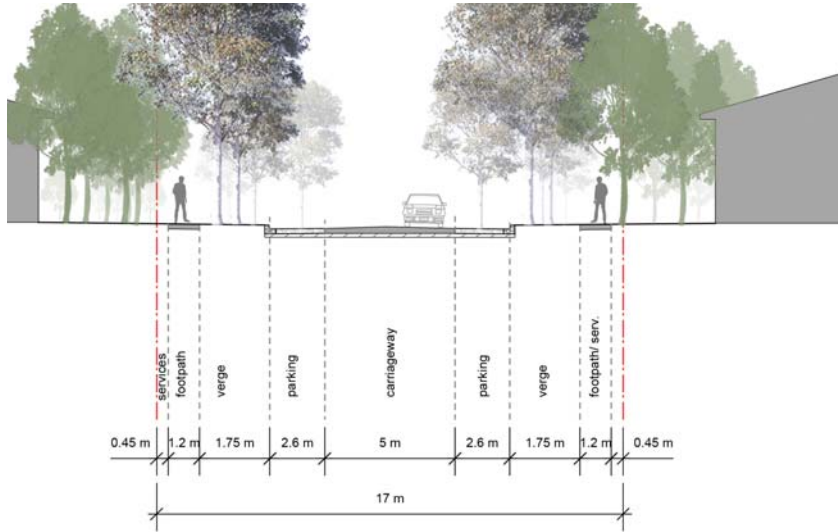
**Street Type A1**  
Local Street with swale :20m wide

**Street Type A2**  
Local Street with bio-swale :20m wide

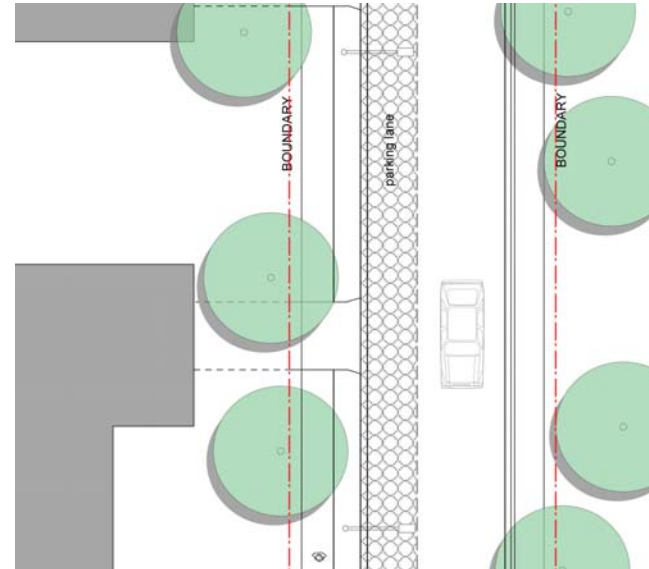
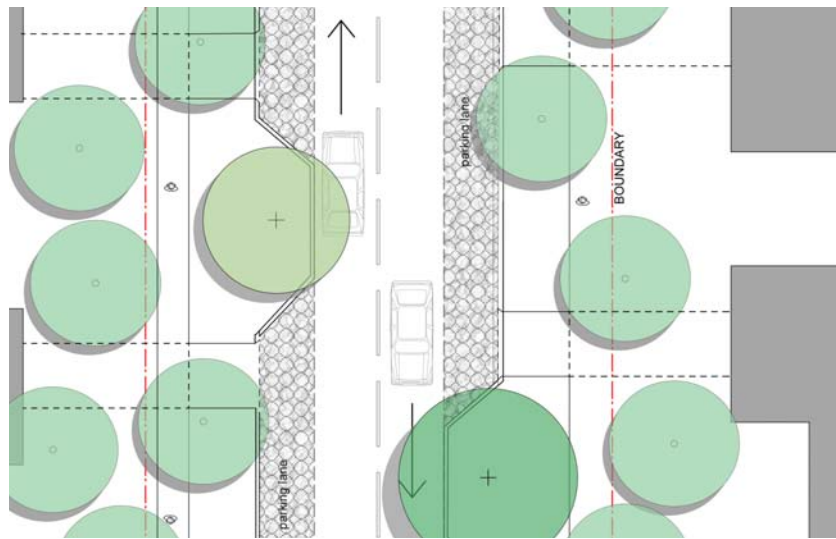
Figure BI.2.2 - Street Type A1

Figure BI.2.3 - Street Type A2





Location plan



**Street Type B**  
Local Street :17m wide

Figure B1.2.4 - Street Type B

**Street Type F**  
Local Street :9m wide

Figure B1.2.5 - Street Type F

B1.3 Parks and open space



Location plan



Figure B1.3.1 - Workshop Park

**Parks and open space**

There are three key parks on the site and a linear park that follows the rail line/watercourse. All parks will be fully accessible to all members of the community at all times.

**Workshop Park**

The Workshop park is to include the remnant workshop building and provide a significant open space for the new residents. It will be spatially framed on three sides by a public road and footpaths. The workshop park will be the focus for community activities. It will be designed within two distinctive zones that reflect the past organisation patterns of the site by the mining community.

- A terraced upper area that is focussed around the workshop and will include an adaptive reuse of the building for community use. New toilets and a children’s play space will also be provided in close proximity to the adapted heritage building. It is envisioned that this area will become an important gathering place for the new community.
- Sloping up the hill away from the workshop will be existing bush land with a winding path and seating areas. The new community facilities within a plane of turf will be clearly visible as the focus of the area, with a backdrop of bush land. Its location and layout will be clearly legible and it will be a key landmark within the Colliery Hamlet.

An illustrative layout is shown opposite.

**KEY**

1. Existing Heritage Shed to be renovated for community use including front desk, change rooms, cafe and shaded seating area.
2. New eco-toilet facility.
3. Major through-path.
4. Playground area.
5. Vehicular drop off zone.
6. Timber seating platforms in bush.
7. Existing bushland to remain. Understorey to be managed for fire prevention and new Indigenous planting to create habitat corridor.





Location plan



Figure B1.3.2 - Lemon Tree Park

**Lemon Tree Park**

The former manager's house is the site for an interpretive park with lawns and an interpretation of former gardens in the area. The remnants of previous uses such as terracing and plantings including a lemon tree are still evident.

A signage and an interpretive strategy will be developed. It is envisaged that this park will be low key. The only interventions will be timber decks, a footpath and an interpretive garden.

The site is located on the side slopes of the hill that extend from the creek to the ridge top. It will be flanked on two sides by medium density housing, separated by a public road with a footpath.

The character of the park is to be dominated by the ambience of a past garden. Grasslands and exotic plantings, a walkway through the park define the key elements. Seating platforms will punctuate the space

An illustrative layout is shown opposite.

**KEY**

- 1. Central Ridge Raised Path
- 2. Indigenous Grassland Zones
- 3. Heritage Footprint Planting Stand
- 4. Raised Timber Platforms and Seating
- 5. Retain Existing Trees



Location plan



Figure B1.3.3 - Gateway Park

**Gateway Park**

The Gateway Park will be located at the entry to the development at the existing clearing where Flowers Drive emerges from the forest and the main development of Middle Camp becomes visible.

The existing area will be affected by the proposed road realignment. The large grassed area will embrace both sides of the road and will be surrounded by existing and new planting which will screen the existing and the proposed development from the road.

The Gateway Park is designed to encourage informal active uses, and provide space for the community to gather for small-scaled events. The character of the open lawn area fringed by groups of trees will be in contrast to the dense surrounding bushland.

On the periphery of the park will be some picnic facilities and a playground including heritage items with shelter and seating.

An illustrative layout is shown opposite.

**Linear Park**

The linear park follows the former rail line and embraces the character of the creek line. It includes creek crossings and provides an interpretation of the story of the people that once lived in the area both pre-European and during the coal mining working period. It will have an informal character with a diverse range of paving materials and a variety of plantings which reflect the ecological areas through which the rail line traverses.

**Bushland Reserves**

Each of the development footprints include peripheral buffers. These will be managed bushland buffers that incorporate the requirements of the bushfire Asset Protection Zone.

Colliery Hamlet includes drainage lines that are to be conserved. Recreational facilities will be provided along the drainage lines including walking trails. Wherever possible, walking trails will be elevated above the ground plane to minimise the impact on ground ecologies. Seating will be provided along the edges, near the streets and where the APZ will require thinning of the canopy. Existing wetlands will be enhanced to manage environmental conditions and ensure water quality is maximised.





Location plan



Figure B1.3.4 - Landscape Buffer Zone

Proposed verge planting. Located in clumps to comply with Planning for Bushfire requirements	Proposed buffer vegetation. Located in clumps to comply with Planning for Bushfire requirements	Existing vegetation to be thinned to comply with Planning for Bushfire Protection requirements
<b>Verge Trees and mature size</b>	<b>Landscape buffer trees and mature size</b>	
Cupaniopsis anarcardoides 10m	Angophora costata 20m	
Elaeocarpus reticulata 8m	Eucalyptus botryooides 20m	
Angophora costata 20m	Elaeocarpus reticulata 8m	
Glochidion ferdinandi 8m	Syzgium paniculatum 6m	
Melaleuca linarifolia 6m		
Syzgium paniculatum 6m		

**Landscape Buffer Zone**

A buffer zone is proposed along Flowers Drive to provide a vegetated area between the existing street and the proposed housing area known as Sawmill Camp. The buffer zone will be approximately 20m wide and currently contains dense existing vegetation along most of its length. This existing vegetation is to be thinned and pruned to comply with the requirements of Bush Fire Environmental Assessment Code (RFS 2006). These include the following criteria in areas of existing native vegetation:

- Any part of a tree within 5 metres of the building may be removed (this may involve pruning of the tree, rather than total removal).
- The canopy throughout the APZ should be discontinuous. Tree crowns may be separated by a maximum of 5 metres (this may involve pruning of trees, rather than total removal).
- Skirting (the removal of lower branches) to separate the tree canopy from the ground or understorey vegetation should be used in preference to tree removal where appropriate.
- Any pruning or branch removal must be carried out in accordance with the Rural Fires Service Standards for Asset Protection Zones or AS 4373—1996 Pruning of amenity trees.

In selecting trees for removal:

- Species that are listed by the local authority as noxious or environmental weeds should be removed in preference to other species.
- Non-native woody plants should be removed in preference to native species.
- Species with rough, flaky or stringy bark should be removed in preference to those with smooth or tightly held bark.
- Small trees without hollows should be removed in preference to larger trees and trees with hollows.
- Locally common species should be removed in preference to species listed by the local authority as regionally significant, or valuable for habitat or food source.
- Trees that have been determined to be dangerous by the local authority should be removed in preference to other trees.

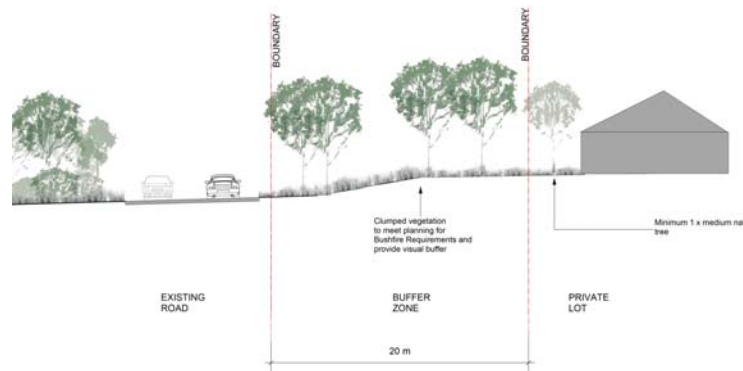


Figure B1.3.5 - Landscape Buffer Zone\_Section

The southern portion of the area proposed as buffer has less existing vegetation and in this portion it is proposed to plant new trees to continue the vegetative screen. New trees will be planted in clumps (to comply with the requirements of Bush Fire Environmental Assessment Code (RFS 2006). The species of trees to be planted includes local native species as per the buffer plan and key. Understorey planting in the buffer zone will consist mostly of native grasses and low groundcovers to comply with bushfire prevention requirements.

**Heritage Shared pathway**

- A heritage shared pathway is proposed to tie in the new development with the existing development. The route is aligned to an existing drainage line and then follows the former rail line towards the coast.
- The pathway will be generous in width to accommodate pedestrians and cyclists and will consist of a range of paving materials depending on the context.

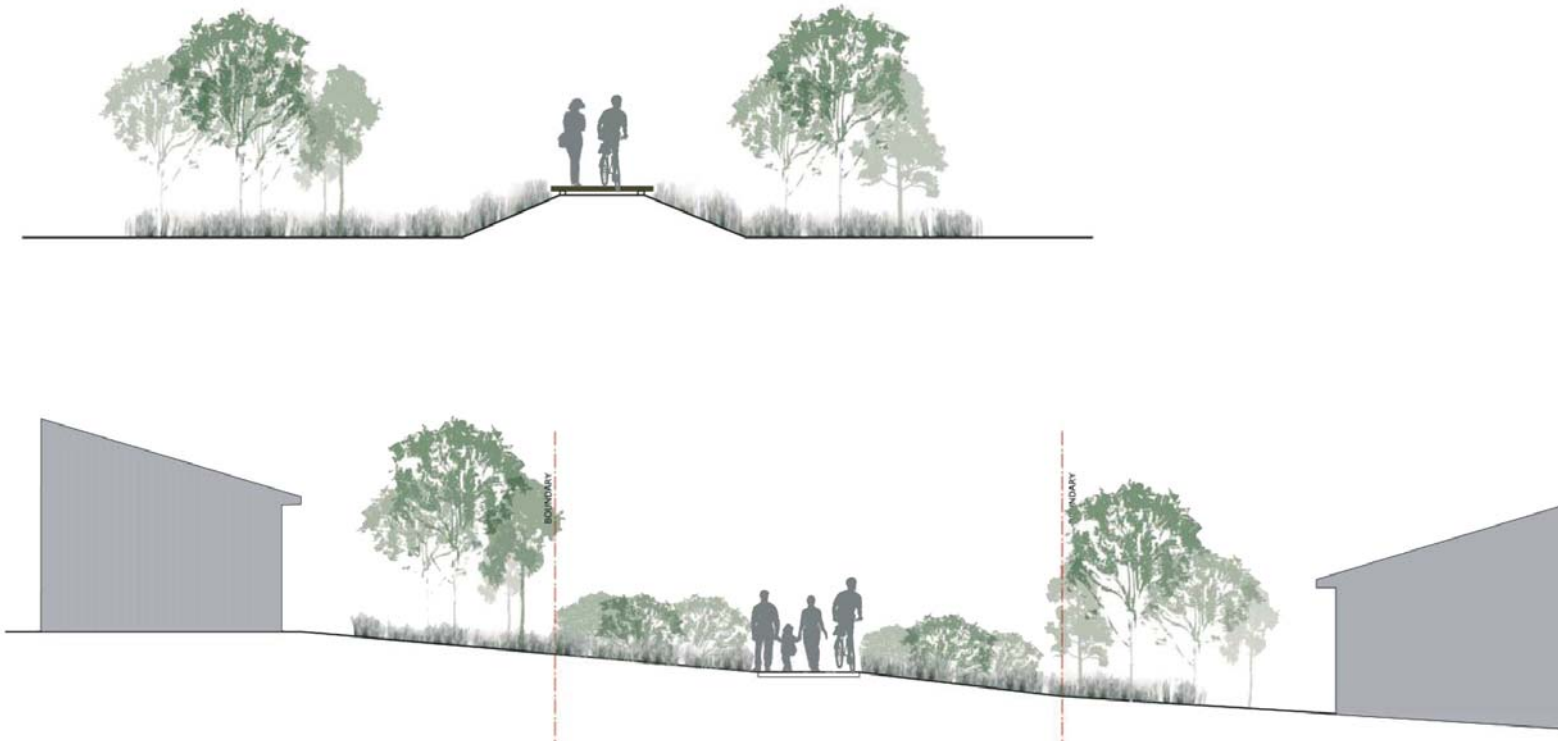
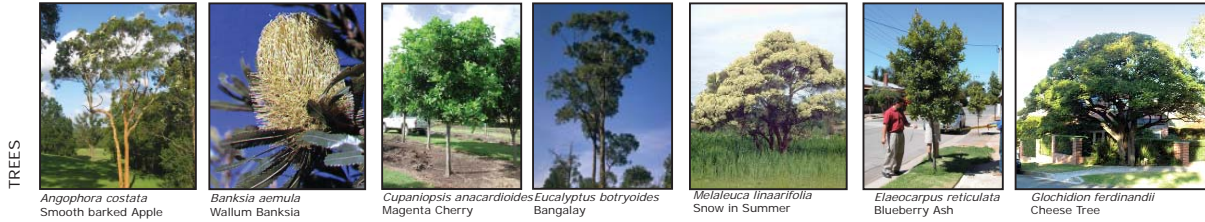


Figure B1.3.6 - Heritage shared pathway typical sections

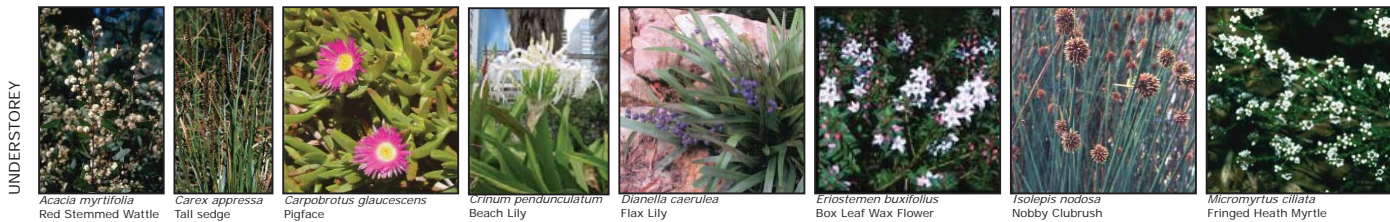
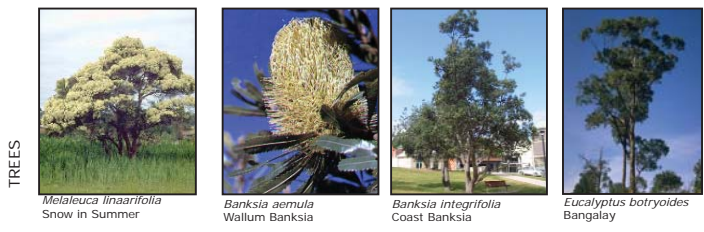


B1.4 Plant Types and Materials

Forest vegetation



Heath vegetation



Plant palette

- Plant palette will be dominated by local and endemic species. The landscape character of the existing vegetation will dominate, so tree species will consist of both smaller trees on the plateau areas and taller trees on the slopes. The soils are quite shallow in this area so good soil preparation is essential to maximise the potential of the site.

Landscape materials and assemblage techniques

- Public domain materials will be simple i.e. concrete footpaths and concrete kerbs. In parks, larger paved areas will be gravel with some special areas of sandstone paving.
- Playgrounds will consist of diverse types of play elements designed in an exciting and experiential setting.
- Picnic facilities will include specially designed shelters that are unique to Catherine Hill Bay and off-the shelf seating and barbeque items.
- Kerb ramps are to be provided at all intersections.
- Lighting poles in streets 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 planting include species shown opposite

- The forest landscape type of scribbly gum/smooth barked apple is to be developed in streets and parking lanes with plantings of same and similar species of trees with thin, layered canopies.
- Trees in the swales along the edge of the development will be smaller and denser riparian species trees, more suited to drainage corridors and appropriate for planting in Asset Protection Zones.
- Trees in the main road swales will be grand spreading trees such as Ficus species.
- Ground covers will be native grasses and low shrubs. Extensive areas of lawn shall occur on the verges only to facilitate access from parking areas.

Figure B1.4.1 - Plant types

## B2.1 Building types



Figure B2.1.1 - Building types diagram

The following building types provide indicative illustrations of possible design outcomes on various lot sizes, shapes and orientations. They respond to the desired future character of the Catherine Hill Bay Estate.

### Objectives:

- To reinforce the desired future character for Catherine Hill Bay Estate and its neighbourhood precincts.
- 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 promote pavilion and "L"-shaped housing forms.
- To retain existing cottages within Colliery Hamlet and incorporate them into the new subdivision pattern.
- 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

Within the Catherine Hill Bay Estate there are 3 proposed building and lot types which have the following characteristics:

### Type 1: Village Courtyard Lots

- detached dwellings
- two storey
- 15m minimum lot frontage
- 450m<sup>2</sup> minimum lot area;

### Type 2: Hamlet Lots

- detached dwellings
- single storey
- may be courtyard or "L"-shaped houses
- typically 15m minimum lot frontage
- 520m<sup>2</sup> minimum lot area
- front vehicle access

### Type 3: Traditional Courtyard Lots including Corner Lots

- detached dwellings
- single or two storey
- typically 20m minimum lot frontage
- 600m<sup>2</sup> minimum lot area
- front vehicle access, corner lots may have side vehicle access
- includes all corner lots

### 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.

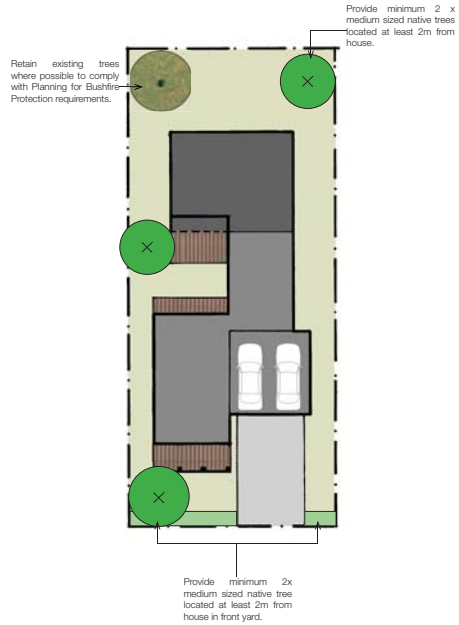
### Retaining walls

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

B2.1 Building types

Type 1: Village Courtyard Lots with landscape plan

Minimum 15m lot frontage



Indicative Plan



Indicative Elevation

Figure B2.1.2 - Village Courtyard Lots

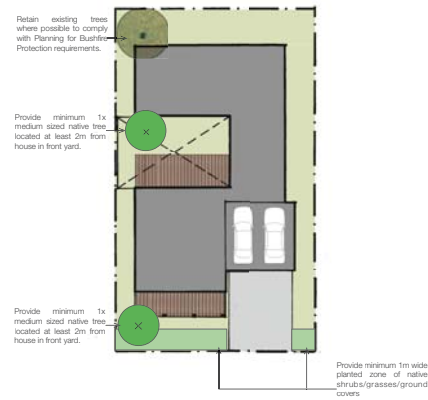


Indicative Elevation

Figure B2.1.2 a- Village Courtyard Lots on 'stumps'

Type 2: Hamlet Lots with landscape plan

Minimum 15m lot frontage



Indicative Plan



Indicative Elevation

Figure B2.1.3 - Hamlet Lots, Single Storey, Courtyard Option

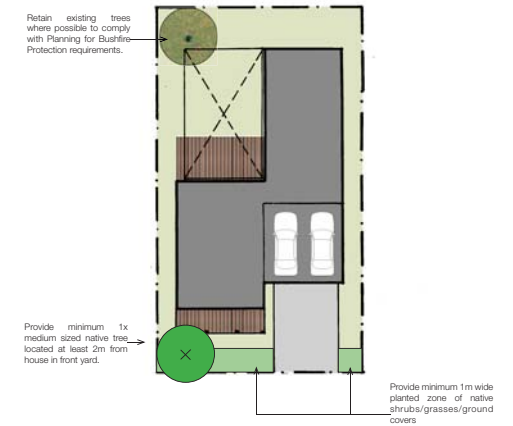


Indicative Elevation

Figure B2.1.3a - Hamlet Lots, Single Storey, Courtyard Option on 'stumps'

Type 2: Hamlet Lots with landscape plan

Minimum 15m lot frontage



Indicative Plan



Indicative Elevation

Figure B2.1.4 - Hamlet Lots, Single Storey, L-shape Option



Indicative Elevation

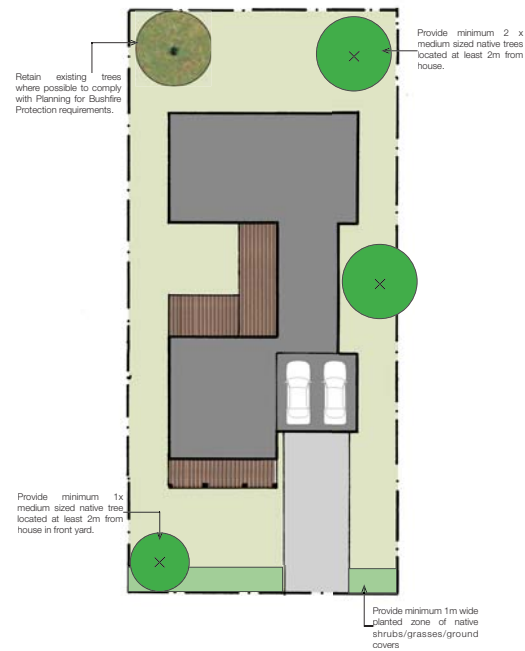
Figure B2.1.4a - Hamlet Lots, Single Storey, L-shape Option on 'stumps'



B2.1 Building types

Type 3: Traditional Courtyard Lots with landscape plan

Minimum 20m lot frontage

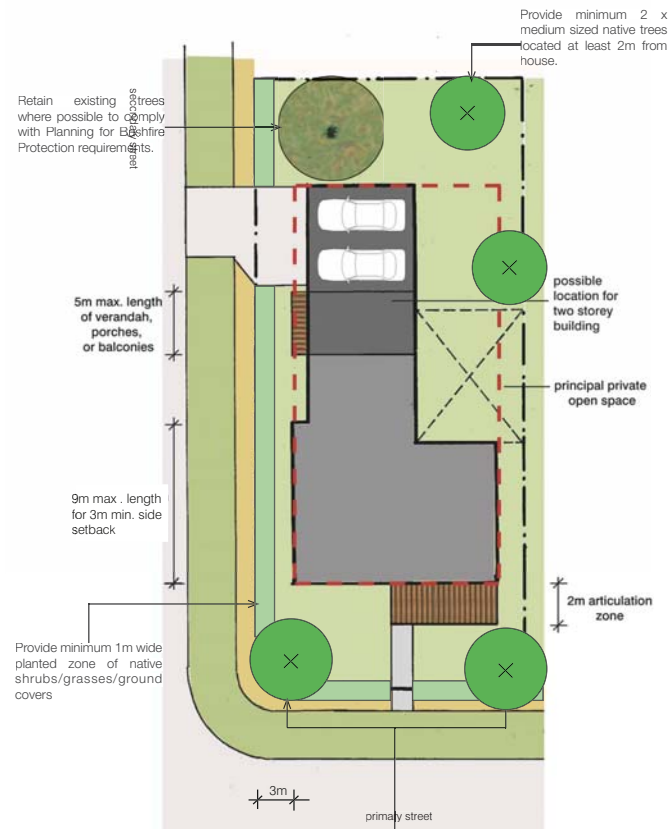


Indicative Plan

Figure B2.1.5 - Traditional Courtyard Lots

Type 3: Traditional Courtyard Lots - Corner Lots with landscape plan

Minimum 20m lot frontage



Indicative Plan

Figure B2.1.6 - Traditional Courtyard Lots - Corner Lots



## B2.2 Site Coverage



Figure B2.2.1 - Site coverage diagram

### Objectives:

- To promote housing types appropriate to the lot size, shape, slope and orientation.
- To enhance the landscape character of each neighbourhood precinct by reinforcing its individual landscape setting and encouraging retention of existing trees where possible.
- To provide adequate residential amenity within the site and between adjacent properties.

### Controls:

Individual lots are to be planned to meet the following:

Lot Types	Minimum Lot Frontage	Minimum Lot Area	FSR	Site Coverage (Maximum)
Sawmill Camp	15m	450m <sup>2</sup>	N/A	35%
Colliery Hamlet Lots	15m	450m <sup>2</sup>	N/A	40%

- 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:

- any basement,
  - any part of an awning that is outside the outer walls of a building and that adjoins the street frontage or other site boundary,
  - any eaves,
  - unenclosed balconies, decks, pergolas and the like.
- The maximum area of ancillary structures such as sheds is to be 40m<sup>2</sup>.

## B2.3 Building Height and Bulk



Figure B2.3.1 - Building height diagram

**KEY**

- 2 storey maximum building height
- 1 storey maximum building height
- Existing Buildings
- Landscape buffer

**Objectives:**

- To ensure houses are designed in proportion to their site.
- To promote house designs that utilise pavilions organised around courtyards.
- 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 the sharing of views.
- To ensure development responds to mining constraints.

**Controls:**

- Building heights are to be in accordance with Figure 2.3.1: Building height diagram.
- For two storey development the overall height limit is 8.5 metres. The overall intention is minimise height of buildings off natural ground level particularly at street frontage.
- For single storey development the overall height limit is 5 metres for stump construction. The overall intention is minimise height of buildings off natural ground level particularly at street frontage.
- The overall height limit of a detached garage is 4.5 metres.
- The overall height limit of carports is to be 3.5 metres.
- The overall height limit of ancillary structures such as sheds 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 2.7 metres.
- Roof pitches are to be between 15-30 degrees.



B2.4 Streetscape & Street Setbacks

- Front setbacks and secondary street setbacks for corner sites to be in accordance with Figure B2.4.1 - Street setbacks diagram.

**Garages**

- Garages are to be setback a minimum of 2m behind the front building line, that is garages must be a minimum 7m from the front boundary. See Figures in B2.5 Setbacks.
- 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.
- 4m maximum width of driveway at boundary.

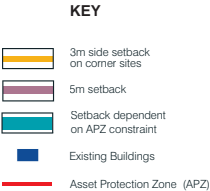


Figure B2.4.1 - Street setbacks diagram

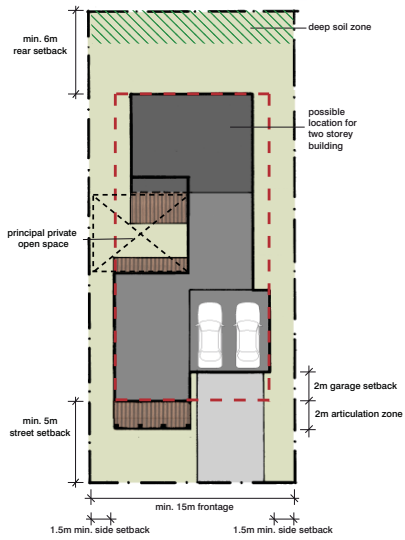


Figure B2.5.1 - Village Courtyard Lots showing minimum side and rear setbacks

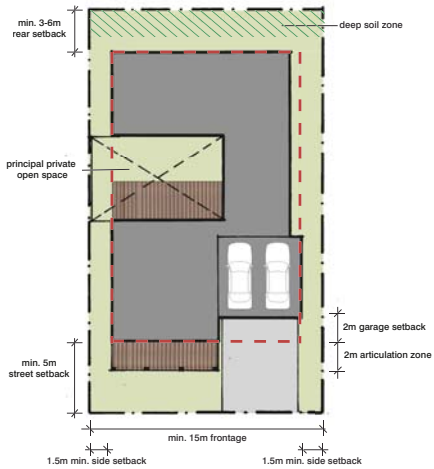


Figure B2.5.2 - Hamlet Lots showing minimum side and rear setbacks courtyard option

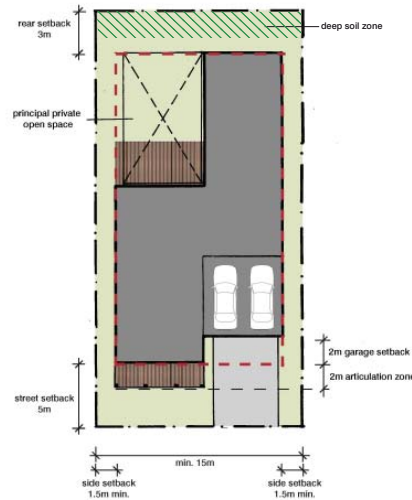


Figure B2.5.3 - Hamlet Lots showing minimum side and rear setbacks L-shaped option

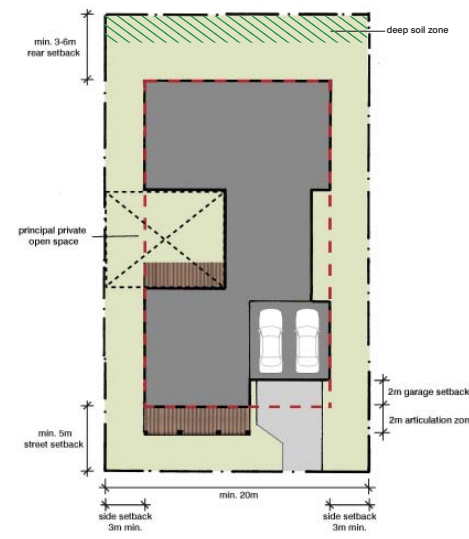


Figure B2.5.4 - Traditional lot showing minimum side and rear setbacks

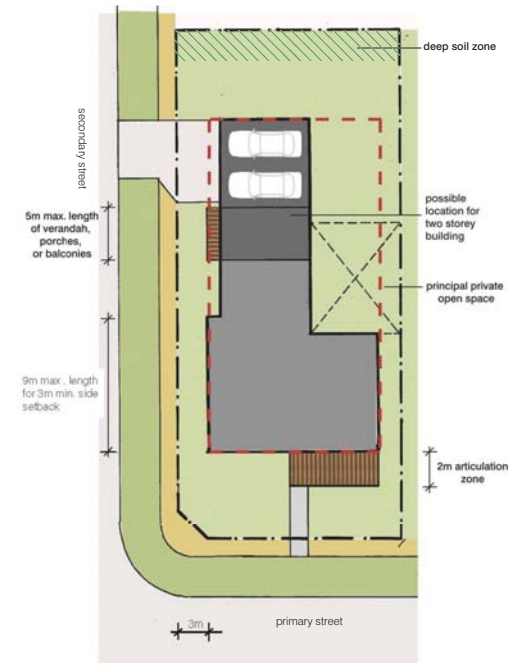


Figure B2.5.5 - Secondary street setbacks diagram for corner lots.

### 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 encourage and enhance vegetation within the rear setback to reinforce the bush and coastal heath setting of the hamlets.
- 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:

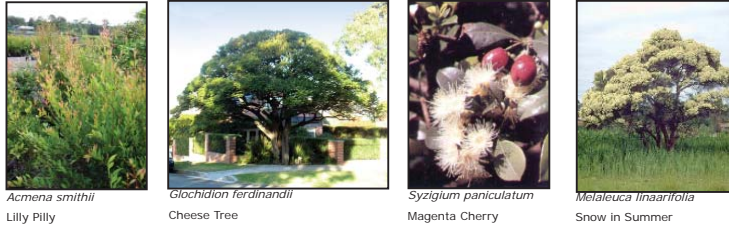
	Side Setback (minimum)	Rear Setback (minimum)
Village Courtyard Lot	1.5m	6m
Hamlet Lots	1.5m	3m, 6m for lots more than 35m min. in length
Traditional Lots and Corner lots	3m	3m

- Ancillary structures are to be located a minimum of 1m from a side or rear boundary.



B2.6 Private Open Space and Landscaping

Forest vegetation



Heath vegetation



Native and exotic vegetation



Figure B2.6.1 - Plant Types

Objectives:

- To ensure useful and purposeful private open space is provided adjacent to internal living areas.
- To reinforce the landscape setting of the estate.
- To promote landscaping on individual lots.
- To encourage courtyard housing types.

Controls:

Individual lots are to be planned to meet the following:

	Principal Private Open Space	Minimum Soft Landscape Area of Lot	Deep Soil Zone
Village Courtyard Lot	80m <sup>2</sup> with a minimum dimension of 4m	45%	Minimum 2m depth along rear boundary
Hamlet Lot	70m <sup>2</sup> with a minimum dimension of 6m	35%	Minimum 2m depth along rear boundary
Traditional Lot and Corner Lot	80m <sup>2</sup> with a minimum dimension of 6m	40%	Minimum 2m depth along rear boundary

- Locate principal private open space to side or rear of lot and ensure it is directly accessible from living areas.
- Areas of private open space are to achieve at least 3 hours of sunlight to 50% of the principal open space between 9am and 3pm on 21 June.
- 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.
- Verandahs are required along the primary street frontage for a minimum depth of 2m.
- Landscape area is any area that is landscaped by way of planting of gardens, lawns, shrubs or trees in deep soil. 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.

B2.7 Asset Protection Zones

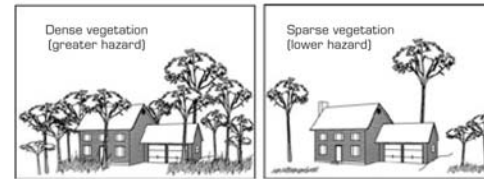


Figure B2.7.2 - Determining if an APZ is required

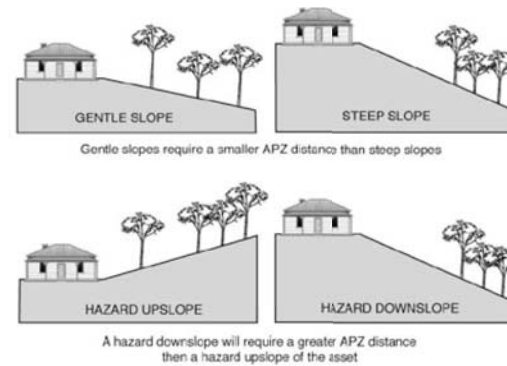


Figure B2.7.3 - Slope influencing the APZ

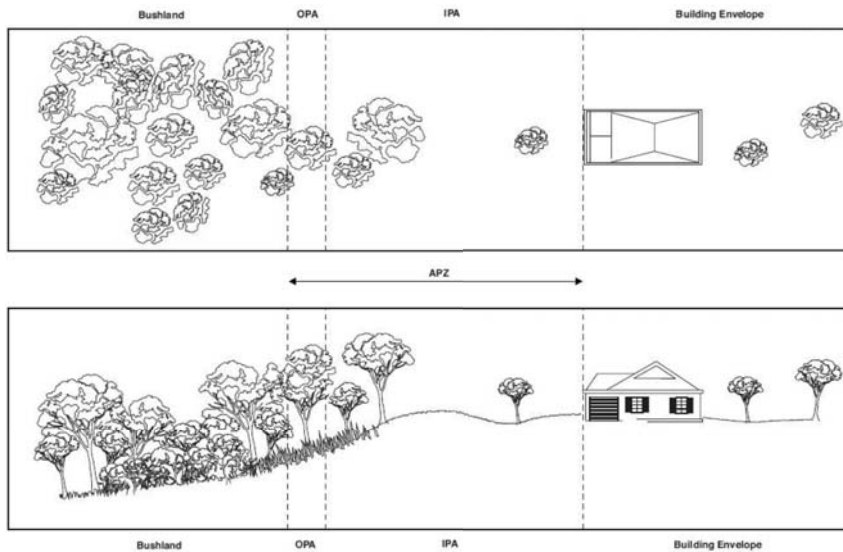


Figure B2.7.1 - Asset Protection Zone (APZ) showing Inner Protection Zone (IPZ) and Outer Protection Zone (OPZ).

**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.

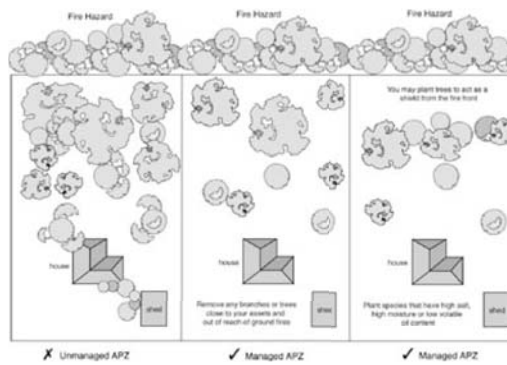
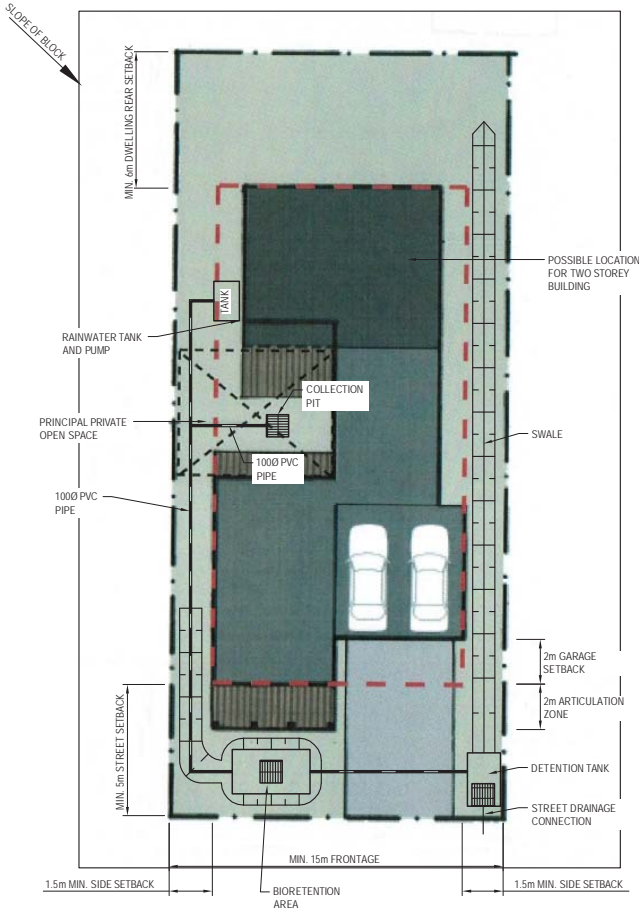


Figure B2.7.4 - Unmanaged and managed APZs

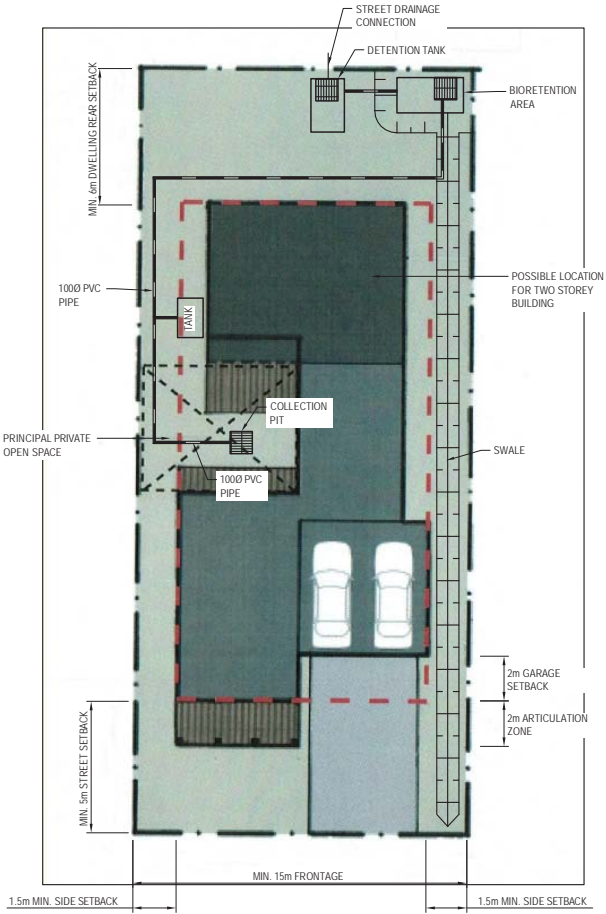
B2.8 Stormwater Management

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.



TYPICAL STORMWATER PLAN  
NTS



TYPICAL STORMWATER PLAN  
NTS

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

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