



WorleyParsons

resources & energy

UTILA PTY LTD

Residential Subdivision, Lyons Rd North Bonville

Design Principles and Low Density Built Form Controls



301015-02663

13 May 2013

Infrastructure & Environment

Level 12, 141 Walker Street,

North Sydney NSW 2060

Australia

Telephone: +61 2 8923-6866

Facsimile: +61 2 8923-6877

www.worleyparsons.com

ABN 61 001 279 812

© Copyright 2012 WorleyParsons Services Pty Ltd



UTILA PTY LTD

RESIDENTIAL SUBDIVISION, LYONS RD NORTH BONVILLE

DESIGN PRINCIPLES AND LOW DENSITY BUILT FORM CONTROLS

Disclaimer

This report has been prepared on behalf of and for the exclusive use of Utila Pty Ltd, and is subject to and issued in accordance with the agreement between Utila Pty Ltd and WorleyParsons. WorleyParsons accepts no liability or responsibility whatsoever for it in respect of any use of or reliance upon this report by any third party.

Copying this report without the permission of Utila Pty Ltd and WorleyParsons is not permitted.

PROJECT 301015-02663 - RESIDENTIAL SUBDIVISION, LYONS RD NORTH BONVILLE

REV	DESCRIPTION	ORIG	REVIEW	WORLEY- PARSONS APPROVAL	DATE	CLIENT APPROVAL	DATE
A	Original	J. McCredie	J. Fielding	N/A	24-Aug-11		
B	Revised	J. McCredie	C. Jones	N/A	06-Sep-12		
C	Final	J. McCredie	C. Jones	R. Power	13-May-13		



UTILA PTY LTD

RESIDENTIAL SUBDIVISION, LYONS RD NORTH BONVILLE

DESIGN PRINCIPLES AND LOW DENSITY BUILT FORM CONTROLS

CONTENTS

1	INTRODUCTION	1
2	GENERAL DESIGN PRINCIPLES	2
2.1	Street and Block Pattern	2
2.2	Lot and Dwelling Organisation	3
2.3	Building Zones and Dwelling Location	3
2.4	Car Parking	4
3	DETAILED SITE CONSIDERATIONS	5
3.1	Development of the Concept Layout	5
3.2	Size of Lots	5
4	BUILT FORM CONTROLS	7
4.1	Creating a Sense of Place	7
4.2	Lot Layout and Dwelling Organisation	9
4.3	Lot Size and Shapes	9
4.4	Building Zones	10
4.5	Car Parking	11
4.6	Riparian Zone / Detention Basins	11

APPENDICES

Appendix 1: Low Density Built Form Controls



UTILA PTY LTD

RESIDENTIAL SUBDIVISION, LYONS RD NORTH BONVILLE

DESIGN PRINCIPLES AND LOW DENSITY BUILT FORM CONTROLS

1 INTRODUCTION

A Preferred Project Report (PPR) has been prepared for the Project Application given that changes have been made to the proposed subdivision design since the exhibition period to minimise environmental impact and because the Department of Planning & Infrastructure considered further environmental assessment was necessary.

The development of the revised subdivision layout was undertaken by Jan McCredie in consultation with the Project Team.

This document sets out the Design Principles that have guided the formulation of the revised Preliminary Concept Layout and the proposed Low Density Built Form Controls (refer **Appendix 1**) to guide the future development of the residential subdivision.



UTILA PTY LTD

RESIDENTIAL SUBDIVISION, LYONS RD NORTH BONVILLE

DESIGN PRINCIPLES AND LOW DENSITY BUILT FORM CONTROLS

2 GENERAL DESIGN PRINCIPLES

2.1 Street and Block Pattern

The Street and block pattern is to:

- accommodate regular lots.
- connect to the block and street system as part of the public street network.
- ensure that the new street and block pattern is as fully connected to the surrounding suburban development so it does not create a gated community.
- introduce a street and block pattern which reveals the land form of the surrounding area by ensuring that:
 - o long streets are parallel to the ridges and gullies;
 - o short streets run across the contours.
- provide public access through the site on roads and / or footpaths from surrounding area to the bushland gully/ open space.
- provide an edge road to the bushland / riparian zone so that buildings/ lots do not back onto the open space.
- enhance and reinforce identified key natural features as part of the design, i.e. the vegetation / national park / riparian zone, etc by locating the streets to optimise views to the special features.
- ensure that there are clear views to bushland and sky along the streets. This will minimise the impact of density and the development will feel more spacious.
- ensure that there are clear views along the street so that the topography can be read and understood.
- provide lot widths and depths to suit a range of dwelling types with the majority of lots being under 800sqm and above 600sqm. One corner lot to be greater in area than 800sqm.
- ensure that the majority of lots are regular in shape with side boundaries parallel to the streets so that the dwellings will be located with regular spacing and shape between them. This will minimise the visual impact of density from within the development and from the open space and will ensure that one dwelling relates to another and the landform.
- ensure that dwelling lots do not back onto open space but have a front to the open space. This will optimise the value of the open space visually and in terms of ongoing use; safety and importance.



UTILA PTY LTD

RESIDENTIAL SUBDIVISION, LYONS RD NORTH BONVILLE

DESIGN PRINCIPLES AND LOW DENSITY BUILT FORM CONTROLS

- be in accordance with the Coffs Harbour (CH) subdivision DCP in terms of street width, etc.

2.2 Lot and Dwelling Organisation

Dwelling lots are to be organised on the basis of a predominance of generic lots and some “special” lots. This is to enable the buildings to be organised so that they create a spatial system:

- in which the natural features are enhanced and highlighted revealing the special qualities of the site.
- which land is clearly public or private.
- which establishes legibility and variety. Variety in urban area is in large part derived from the shape of the street over the land in plan and in section [narrow / wide etc].

Dwelling lots are to be laid out:

- to provide for the placement of regularly shaped buildings.
- so that the relationship between one dwelling and another creates a regular space along front, side and rear boundaries.
- so that there is ample room for well-designed dwellings, private open space and car access;
- there is a clear legible entry to a public street. This can be front or side.

Fronts of dwellings are to:

- face the street.
- face fronts of dwellings.
- face open space and public areas.

Backs of dwellings are to:

- face backs of dwellings.
- in a corner condition backs are to face sides.

2.3 Building Zones and Dwelling Location

An area is to be nominated on each lot for a building zone. This area is where a building footprint can be located. The size and shape of these zones are to be sufficient to:

- enable a range of housing types and design resolution.
- optimise the floor space capacity.
- accommodate 1 and 2 storey dwellings.
- enable a building form which can address privacy and solar access.



UTILA PTY LTD

RESIDENTIAL SUBDIVISION, LYONS RD NORTH BONVILLE

DESIGN PRINCIPLES AND LOW DENSITY BUILT FORM CONTROLS

2.4 Car Parking

Car parking is the organised so that it:

- meets the requirements of CH DCP.
- does not dominate the street view particularly entrances.
- provides direct and easy access to each site and / or dwelling.
- uses the site levels to maximum advantage.
- minimises cut and fill.
- does not distort the shape of the land.



UTILA PTY LTD

RESIDENTIAL SUBDIVISION, LYONS RD NORTH BONVILLE

DESIGN PRINCIPLES AND LOW DENSITY BUILT FORM CONTROLS

3 DETAILED SITE CONSIDERATIONS

3.1 Development of the Concept Layout

The subdivision has been designed in accordance with the agreed layout of the riparian zone and flood levels. It is noted that:

- All construction including roads is outside the Riparian zone.
- All residential development is to be outside the “assumed bottom of the bank”.
- A limited number of part lots are within the “limit of flood accounting for sea level rise”. These lots will require either fill or the ground finished floor level of the dwellings to be raised.

The agreed layout of the riparian zone and flood levels had repercussions on the previous layout in that the potential area for development is reduced in:

- The north western corner of the site. The riparian zone meets with the proposed main entrance road in an acute angle and at a higher R.L. than previously indicated. This has implications for the street network, the number of lots and the ability to achieve regular lots which face the riparian zone.
- The northern end of the site adjacent to the existing subdivision. The combination of riparian zone and flood levels and detention basin severely reduces the amount of development in this precinct.

3.2 Size of Lots

The proposed layout has a main central street with those lots facing the bushland slightly narrower (16 metres wide) and smaller (approximately 560sqm). This has the following benefits:

- It optimises the number of lots.
- It maximises the number of lots with views.
- It puts the “higher” density of dwellings overlooking and adjacent to the open space or the wider main street so that the streets with more “mass” form stronger edges to the open and /or wider spaces. This in turn strengthens the visual impact and optimises the value of the open space.

Although it is common practices to fill up all parts of a site which are deemed “developable”, this is somewhat simplistic and can result in a less optimum outcome. A slightly “tighter” urban area can be experienced and understood in a more satisfying way because the contrast with the surrounding open space is more dramatic.



UTILA PTY LTD

RESIDENTIAL SUBDIVISION, LYONS RD NORTH BONVILLE

DESIGN PRINCIPLES AND LOW DENSITY BUILT FORM CONTROLS

The re-configuration of the corners lots has been an important focus to fit within the site boundaries. This has the following benefits as it:

- creates more lots with views.
- brings the qualities of the site into the development.
- creates more regular lots. This means that all the dwellings will relate well to each other in a positive way i.e. with positive and not irregular spaces between them. This in turn helps create a strong sense of identity for the precinct because the buildings read as a grouping and contrast with the open space rather than appearing as a scattering of individual elements.
- reduces the amount of fill required in these sensitive corners
- enables the detention basins to be located in the corners.
- enables the shape of the site to be read in its entirety rather than it being a flattened plateau.
- enables the streets at the northern end of the site to intersect at right angles rather than at an acute angle.



UTILA PTY LTD

RESIDENTIAL SUBDIVISION, LYONS RD NORTH BONVILLE

DESIGN PRINCIPLES AND LOW DENSITY BUILT FORM CONTROLS

4 BUILT FORM CONTROLS

4.1 Creating a Sense of Place

In a suburban environment a sense of place comes predominately from the characteristics of the land, in particular the slope / vegetation / views / waterways. The slope of the land and the views from and to the land are in turn revealed by the spatial system. The spatial system consists of the streets and the open space. This means that the arrangement of the streets over the land is fundamental in creating the sense of place. In Bonville the sense of place has to be derived from the ridges, riparian gullies, bush, trees, etc.

Because people see in straight lines, a relatively straight street pattern will provide the best views of the land. Curvilinear streets particularly on hilly topography truncate views of the land, sky and vegetation.

Most dwellings need to have a similar and regular relationship to each other but some are required to create “points of difference” e.g. the special sites. These will evolve from the natural features, the street pattern and the organisation of the regular lots. This approach also allows for a variation in the architecture because it is not relying on the architecture to create the sense of place.

Street and Block Pattern

The street and block pattern has an entry from Bambara Drive and locates two streets running parallel to Bambara Drive, the gully and the ridge line and a series of east-west streets running across the contours and located along the Southern Boundary.

The street pattern is designed to:

- maximise the impact of the land and minimise the impact of the buildings. This is done by organising the buildings to reveal the land formation to the human eye, e.g. by providing views from the entry across the riparian zone to the open space and beyond; by providing views down the site to the bush and views across the site to the north / south;
- relate to the building typology, i.e. detached dwellings with on-site car parking;
- has a street between the dwellings and the bush reserve and/or riparian zone;
- aligns the blocks to respond to the traditional pattern and the ridge and gully topography;
- creates a clear sense of place by using a street pattern with streets a high side and low side and cross contour.

Views at the ends of Streets

The views along the East / West cross streets are open-ended with views to the National Park so that the total landscape can be understood. The perimeter streets and entrance street runs predominately



UTILA PTY LTD

RESIDENTIAL SUBDIVISION, LYONS RD NORTH BONVILLE

DESIGN PRINCIPLES AND LOW DENSITY BUILT FORM CONTROLS

North South and are open-ended to the North and South providing views to the National Park and the Riparian zone.

Width of Streets

The majority of streets are a minimum of 16m wide. The entrance central street is typically 22 metres wide and includes a central swale system in the median and provision for parallel on-street parking in some locations.

Central Street

The central street has median planting. This spatial arrangement contrasts the street to all other streets. In Options A and B this wide street is reinforced by narrower lots thereby defining the spatial system.

Bush Edge Street

This street runs predominately North / South but its East / West on the Southern end. It is lined by dwellings which all face the street and have front set-backs of 6 metres. In Options A and B this street is reinforced by narrower lots thereby defining the spatial system and creating a stronger edge to the bush.

The corners are pulled back from the area of allowable developable area. This creates:

- more lots with views.
- less fill is required and the natural shape of the land revealed / maintained.
- all lots have regular shapes enabling the optimum relationship of one building to another.

This configuration also adds to the sense of place and variety.

East/ West Street

The East / West streets run across the slope. They are lined by dwellings which all face the street and step down the contours. The front set backs are all approximately 6 metres.

Overall Street Pattern

All streets will have a unique character about them as a result of:

- their relationship with the land e.g. along contours, high side/low side, across contours;
- the views at each end.
- the contrast of width of the central spine to all the other streets.
- the level of definition and enclosure by the buildings, i.e. open on one side or buildings on both sides; front set backs, etc.



UTILA PTY LTD

RESIDENTIAL SUBDIVISION, LYONS RD NORTH BONVILLE

DESIGN PRINCIPLES AND LOW DENSITY BUILT FORM CONTROLS

4.2 Lot Layout and Dwelling Organisation

Dwelling lots are to be organised on the basis of a predominance of generic lots and some “special” lots. The subdivision is in two areas divided by a riparian zone. The main area of the subdivision is surrounded by National Park and a riparian zone. It forms an “island”. There are a small group of lots (8) adjacent to the existing Stage 1 residential subdivision.

The proposed lot layout:

- has a total of 165 low density lots.
- has a total of 91 lots with views directly to the riparian corridor/bushland.
- comprises generic lots which provide for the placement of regularly shaped buildings and some are “special” lots (or irregular shapes).
- enables one dwelling to relate to another.
- creates a regular space along front, side and rear boundaries.
- has ample room for well-designed dwellings, private open space and car access.
- provides a clear legible face to a public the street, open space and public areas.
- has backs of dwellings facing backs of dwellings or in the corner condition backs face sides.
- has dwellings facing the spine street and the bush edge street and the side lots face the cross streets.

4.3 Lot Size and Shapes

Lot Width

- Lots are a minimum width of 15.0 metres.

Lot Depth

- Lots are approximately 35-40 metres deep.

Lot Size

- The lots range in size from 544.8sqm to 826.2sqm.
- Most lots to be under 800sqm in area are to ensure that there are no “back yard” dual occupancies. These can have a very detrimental impact on the surrounding dwellings unless the land is very hilly and the lots very large.
- The single over 800sqm lot is located in the north-western section of the site can accommodate a dual occupancy as long as it has minimal impact to the surrounding development.



UTILA PTY LTD

RESIDENTIAL SUBDIVISION, LYONS RD NORTH BONVILLE

DESIGN PRINCIPLES AND LOW DENSITY BUILT FORM CONTROLS

Rear Setbacks

Lots are to have a minimum distance of 12.0 metres from the rear of the dwelling to the rear boundary. This is to enable:

- the distance between two back-to-back dwellings to be a minimum of 24 metres for privacy and solar access.
- a rear private open space of 12.0 metres deep for each dwelling.
- a zone for substantial planting at the rear of the dwellings to establish a contiguous green network.

Where there are “special” lots they may have a slightly reduced rear set back depending on the site configuration.

Side Setbacks

Side setbacks are a minimum of 1200mm / eaves 800mm except:

- on a Southern Boundary – minimum of 900mm / eaves 675mm.
- on a Northern Boundary – minimum of 2500mm / eaves 2100mm.

Front Setbacks

The building front setbacks are 6 metres.

On corner lots, the setback can be 2 metres on the secondary boundary. These:

- help establish the particular design and character of the street.
- reflect the topography and/or the location of the lot relative to the street pattern and width.
- establish an appropriate building zone related to the overall dimensions of the lots and rear setbacks.
- enable the issues of privacy and interface to be addressed.

4.4 Building Zones

An area is nominated on each lot for as a building zone. This area is where a building can be located. The size of these zones is indicative and vary related to the lot size and shape but are sufficiently large enough to:

- enable a range of housing types and design resolution, i.e. they do not “force” the architecture.
- optimise the floor space capacity allowable on the site and each lot.
- accommodate 1 or 2 storey dwellings.



UTILA PTY LTD

RESIDENTIAL SUBDIVISION, LYONS RD NORTH BONVILLE

DESIGN PRINCIPLES AND LOW DENSITY BUILT FORM CONTROLS

- enable a building form which can address privacy and solar access.

4.5 Car Parking

The car parking is accommodated on each site:

- car parking should be directly accessed from the street.
- have entrances are located so that they are not at the end of view lines along the street and have the potential due to level differences to provide relatively level access and have a building located over the top. This combination of considerations will ensure that the entrances are very discrete.
- garages are to be generally located behind the line of the dwelling so that they have minimal visual impact on the street.

4.6 Riparian Zone / Detention Basins

The Detention Basins are located near the Riparian Zones and on the Bush Edge street. These are to have related appropriate planting (refer to Landscape Concept Plan).



WorleyParsons

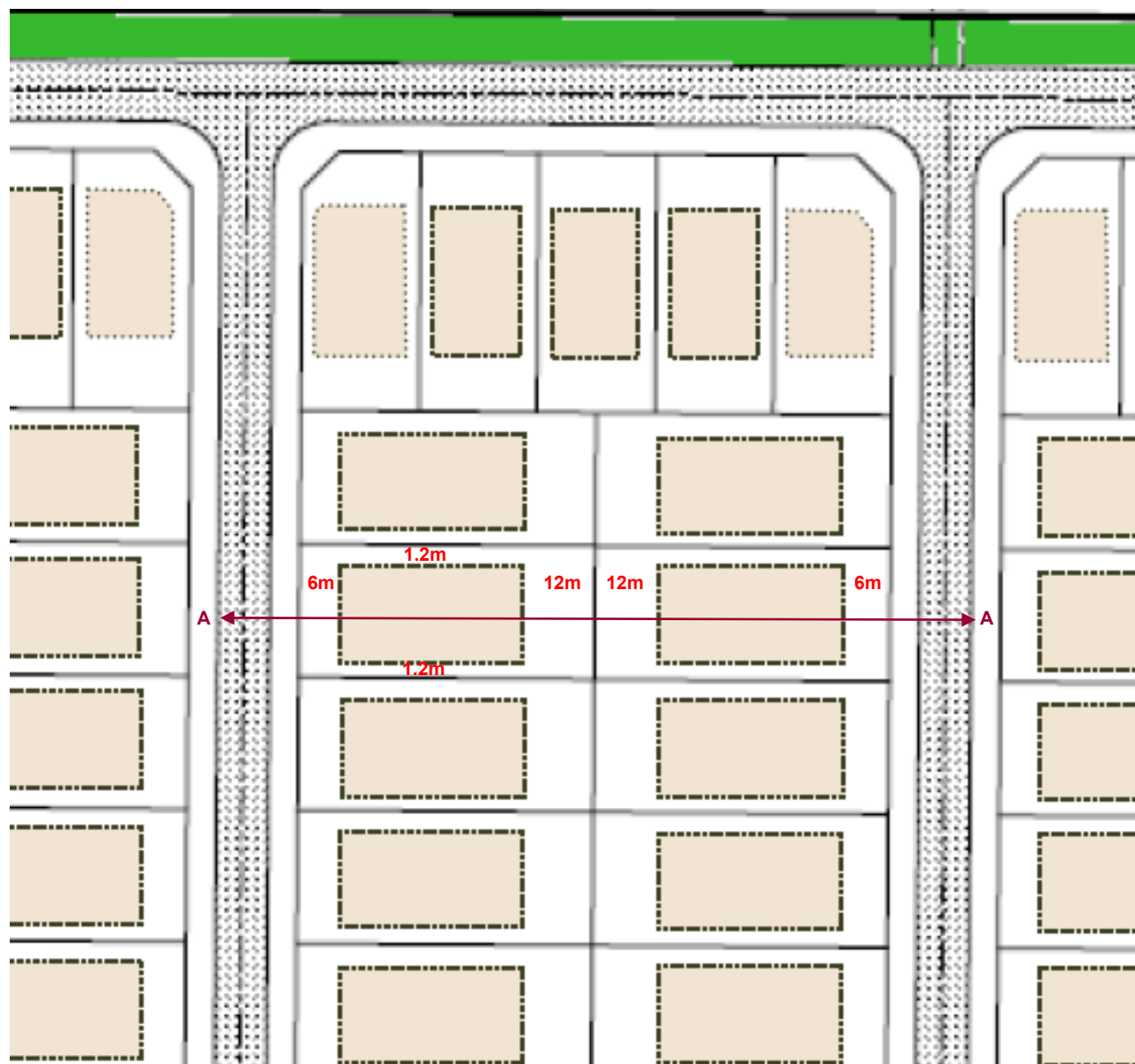
resources & energy

UTILA PTY LTD

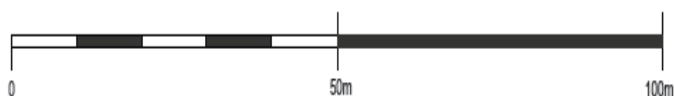
RESIDENTIAL SUBDIVISION, LYONS RD NORTH BONVILLE

DESIGN PRINCIPLES AND LOW DENSITY BUILT FORM CONTROLS

Appendix 1: Low Density Built Form Controls



Lot Layout Detail



BUILT FORM CONTROLS

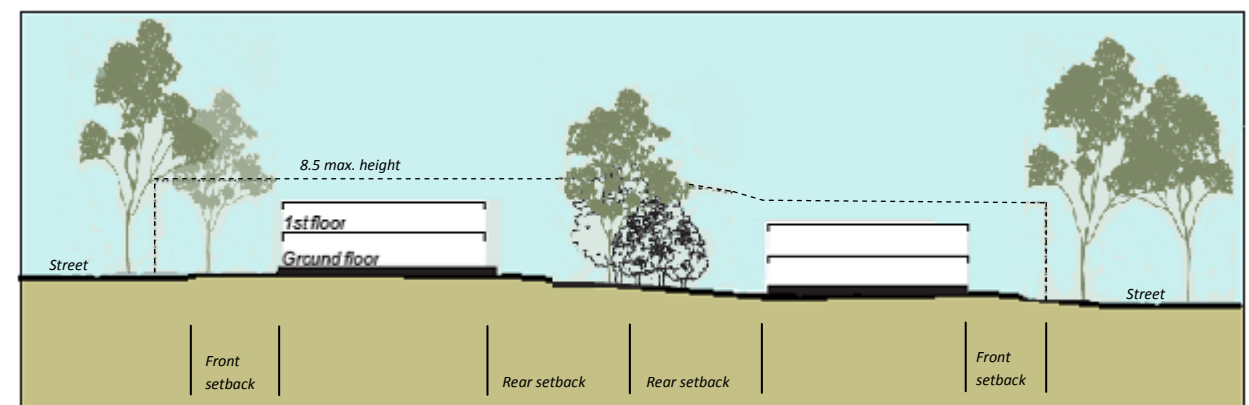


WorleyParsons

resources & energy

LOW DENSITY RESIDENTIAL DEVELOPMENT

Residential development within the low density subdivision is to generally comply with the Coffs Harbour City Council Low Density Housing Development Control Plan, and the requirements set out in the annotated street section (below), indicating the proposed landscape and street context and which illustrates the desired built scale.



Section A-A

Building Height

- Dwelling houses are proposed as a maximum two storeys, with an overall maximum building height of 8.5 metres above existing ground level. Where the land form falls more than two metres from the street alignment to the rear of the property, an additional basement/ half basement storey may be provided.

Building Form and Design

- Main residential dwelling buildings are to occur within the building zones identified on the Preliminary Subdivision Concept Layout.
- Building development is to minimise impact on the existing landform.
- In the design of new dwellings, ensure that each development has good access to daylight and natural ventilation; has good visual and acoustic privacy; and useable private open space.
- In the design of new dwellings, minimise impacts on neighbouring development in terms of their access to daylight and natural ventilation; and their visual and acoustic privacy both within buildings and in private open spaces.
- Dwellings are to be designed having regard for neighbouring amenity; overlooking; streetscape suitability; and regional views.
- Garages and carports are generally to be located behind the front building line.

Setbacks

- The front and side setbacks are to conform to the building footprint identified on the concept subdivision plan, in order to assist in establishing a consistent street character, and to maintain a reasonable separation distance between houses.
- The rear setback is to conform to the building zones identified on the Preliminary Subdivision Concept Layout.

Street Landscape

- The street verge is to be planted in accordance with the Landscape Concept Plan. All trees and grassed are to be maintained in accordance with that plan.