# Future Residential Character & Built Form Report

## Residential Subdivision

between Walmsleys Road & Stott Street

## Bilambil Heights

prepared for

**Darryl Anderson Consulting**

by

bda architecture

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## 01 INTRODUCTION

BDA Architecture has been engaged by Darryl Anderson Consulting to prepare a Future Residential Character and Built Form Report for an 85 lot residential subdivision between Walmsleys Road & Stott Street at Bilambil Heights (Tweed Shire Council).

This report forms part of the Environmental Assessment Report and Major Project Application prepared by Darryl Anderson Consulting, in which a full description of the land, its location and the proposed 85 lot subdivision can be found. This document should be read in conjunction with the Annexures of the Environmental Assessment Report.

The purpose of this report is to respond to the request from the Department of Planning for additional information in regards to the consistency with the character of existing development in terms of the locality, street frontage, scale, building envelopes & future built form controls, aesthetics and energy and water efficiency.

The Future Residential Character and Built Form Report is structured as follows:



## 02 CHARACTER OF SURROUNDING NEIGHBOURHOODS

The existing neighbourhoods surrounding the subject site are characterised by steep topography, and generally large allotments with detached dwellings that capture views to the ocean and/or Terranora Broadwater to the east or the hinterland to the west.

## 02 CHARACTER OF SURROUNDING NEIGHBOURHOODS

**Tweed Pacific Residential Estate** (1970's vintage) is located to the south-east of the subject site and has a gross density of approximately 10 dwellings/ha. It comprises single and two-storey detached dwellings in lots of 700m² to 1000m² with 20m wide lot frontages and some battleaxe lots. Front setbacks vary from 6m to 10m from the road reserve and side setbacks are a minimum of 900mm. Houses are generally of brick and tile, with front gardens, driveways, garage doors and in some cases balconies addressing the street.

There is a mix of traditional and contemporary roof forms and the method of building construction varies from slab on ground, split level homes and a few suspended floor construction. There are a few contemporary new homes in the area that adopt more site responsive methods of construction such as pole or light frame buildings with split levels and minimum retaining walls.

Split level home

Slab on the Ground

Battleaxe lots

Split levels and partly suspended

Site responsive methods of construction with lightframe buildings and suspended floors

## 02 CHARACTER OF SURROUNDING NEIGHBOURHOODS

The eastern part of the subject site is partly bounded by 7(d) Environmental Protection Scenic Escarpment and partly by the new **Malua Park Estate**. Residential allotments at Malua Park Estate (2001's conventional subdivision) range from 600m² to 800m² in area and lots are 18m to 30m wide and 25 to 40m deep. The majority of the dwellings are two-storey buildings with some battleaxe lots accessed by driveways. Front setbacks of approximately 6m to 10m with front gardens, retaining walls, batters and driveways provide the transition between the street and the house.

Malua Park Estate is characterised by detached homes with a diversity of architectural styles and building appearance. There are some split level homes but generally the method of construction is slab on ground with extensive use of high retaining walls and batters on the streets and on the sides and rear of the lots.

Battleaxe Lots

Split level with balcony above garage

High retaining walls on boundaries

Slab on ground

## 02 CHARACTER OF SURROUNDING NEIGHBOURHOODS

The subject site is bounded by an aged care complex and the **Tweed Highlands Residential Estate** (mid-nineties' conventional subdivision) to the north. The density of this residential estate is approximately 10 dwellings per hectare comprising detached dwellings with single, two or three storeys in lots of 600m² to 1200m². The character of the built form is diverse in style, materials and methods of construction.

There are a few good examples of site responsive designs that adopted methods of construction such as split level homes, suspended floors, stepped gardens and minimal use of high retaining walls on the streets. In some cases front yards and balconies provide an effective interface between the private and public spaces.

On the other hand, there are some examples of housing design inadequate to steep slopes that create flat sites through substantial earthwork and the use of high retaining walls on the streets.

Aged Care

Battleaxe Lots

Suspended Floor Constructions

Split level homes with balconies above garage

High retaining wall on streets

## 02 CHARACTER OF SURROUNDING NEIGHBOURHOODS

**"The View"** is a new residential estate approximately 1 kilometre to the south of the subject land that has been recently built and is currently offering land for sale. This estate has been subject to substantial earthworks and the construction of 3 to 5m retaining walls on the streets and on side and rear of lots to provide flat sites for sale. The visual impact of those walls can be seen from Bilambil Heights and surrounding neighbourhoods.

High retaining walls

Views to "The View" Estate from Bilambil Heights

## 02 CHARACTER OF SURROUNDING NEIGHBOURHOODS

**Bilambil Heights** is located approximately 2 kilometres south of the subject site. Lots are mainly regular in shape ranging from 600m² to 2000m² including some battleaxe lots greater than 2000m² due to the steepness of the land. Housing design at Bilambil Heights has effectively responded to the steep topography of the area, adopting lightweight materials, pole frame buildings and some split level homes. Balconies, verandahs, landscaped gardens, stepped gardens and low retaining walls promote a good transition between the house and street. Minimum front setback is 6 metres although it varies along the street corridor to accommodate site specific issues such as existing trees, topography and building orientation.

Views to Bilambil Heights from “The View Estate”

Architectural style, materials and roof forms vary across the neighbourhood, nevertheless, brick and tile homes and slab on ground are not common in the area. Visual impact on the ridge has been mitigated through extensive planting of trees, minimal retaining walls and the use of site responsive methods of construction to accommodate steep topography with minimal disturbance of natural ground levels.

Site responsive homes

Good interface with street

## 02 CHARACTER OF SURROUNDING NEIGHBOURHOODS

**Sierra Vista** is a new residential estate located to the south of Bilambil Heights that includes regular shaped lots from 600m² to 800m² in size and a few battleaxe lots. Houses are a mix of brick and tile and rendered brick homes with retaining elements taken up within the buildings or minimal retaining walls on the sides or rear of the lots. Front setbacks are a minimum of 6m with no fences or retaining walls evident from the street. Stepped gardens and landscaped batters create a pleasant interface between public and private realm although the use of balconies and verandahs facing the streets could have been more encouraged across the neighbourhood.

Split level homes

Split level homes - good interface with street with balconies and front gardens facing the street

Retaining elements taken up within the building

Battleaxe lots - Minimal retaining elements on boundaries and street

Good landscaping on side boundary

## 03 PROPOSED RESIDENTIAL CHARACTER

The proposed subdivision layout comprises a conventional low density residential development of 85 lots ranging from 600m² to 2000m². Lots are generally regular in shape with a few battleaxe lots and irregular shaped lots over 1000m² due to topographic constraints. Lot dimensions are generally 20m wide by 30 to 35m deep, and the areas dimensions and access are consistent with the surrounding neighbourhood.

The built form will have a contemporary style based on its natural bush setting. Buildings should be carefully placed within the lot to maximize the features of the natural environment and to create comfortable and enjoyable living environments, using the topography and terrain to the best advantage, while maximizing visual aspect, orientation and environmental principles.

The built form character will be a mix of slab on ground, split level homes and suspended floor construction. The method of construction for each specific lot will be determined by the steepness of the site and must consider methods to minimise disturbance of existing ground levels. Design guidelines will enforce few retaining walls evident from the streets and retaining elements taken up within the buildings. Single level slab on ground will only be allowed in slopes of up to 10% (1:10m). Dwellings on slopes greater than 10% (1:10m) must adopt split levels or suspended floor construction. Section 5 discusses these methods in more detail.

Design guidelines will be prepared to encourage future buyers to incorporate simple architectural design principles with articulated elements such as terraces, balconies, verandahs and pergolas to promote interest and variety to the streetscape.

The built form must be responsive to the natural environment and local climatic conditions and shall adopt a palette of colours and materials sympathetic to its environment. Roofs are to be a simple composition of shapes with the use of architectural elements to create interest to the elevations.

Houses must address their interface with public areas such as street, and adjoining open space, by attention to the design and integration of roofs, balconies, walls, ancillary structures and landscape. Roof forms, detailing, and materials visible from all public areas and adjoining properties must be complementary to the character and form of neighbouring houses. Garages and all ancillary structures must also be in harmony with the main dwelling.

Split Level Homes

## 03 PROPOSED RESIDENTIAL CHARACTER




Slab on Ground (not on grades above 10%)





Suspended Floors

## BUILDING SITING

Each dwelling should be designed to maximize the natural characteristics of its surroundings. Important characteristics to consider are:

- Site orientation and prevailing breezes;
- Solar access;
- Topographic characteristics and drainage lines;
- Points of access;
- Views and Vistas;
- The relationship to the adjoining allotments and buildings (existing or proposed); and
- Tree coverage, including preservation of existing vegetation and tree planting

## DESIGN FOR COMFORTABLE LIVING AND ENERGY EFFICIENCY

In addition to achieving a high quality built form, a pro-active attitude towards environmental responsive design by landowners is encouraged. Addressing the local climate and the unique characteristics of a home site, and applying simple design and building techniques will be a requirement for all lots.

All homes must incorporate passive solar principles and must comply with the Tweed Shire Development Control Plan: Section A9 – Energy Smart Homes Policy.

To achieve a sustainable outcome, all development on private lots needs to consider and respond to:

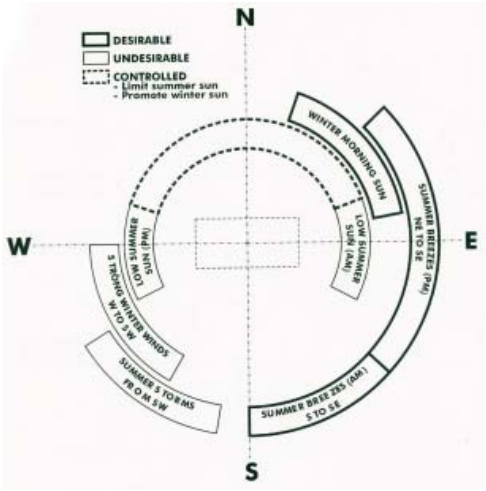
- Protection of the existing vegetation (if applicable);
- Planting appropriate species;
- Maintaining soil stability; and
- Energy Efficient Building Design

Home owners are to incorporate energy saving design features into all aspect of their home and garden areas.

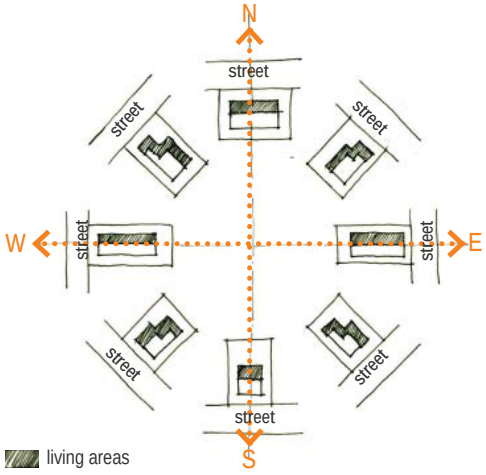
Dwellings must include at least the following:

- Insulation to walls and ceilings;
- Eaves overhangs of 600mm minimum;
- North/east facing living areas and outdoor areas;
- West facing windows should be minimized. When provided, west facing windows should be shaded with fixed or moveable devices such as blinds, shutters or awnings;
- Cross ventilation;
- Minimum NatHERS or equivalent rating of 3.5 stars;
- At least AAA rated water efficient shower heads, toilets and aerators on bathroom hand basins and kitchen sinks; and
- Clothes Dryers: 3.5 star rating or greater
- Compliance with BASIX

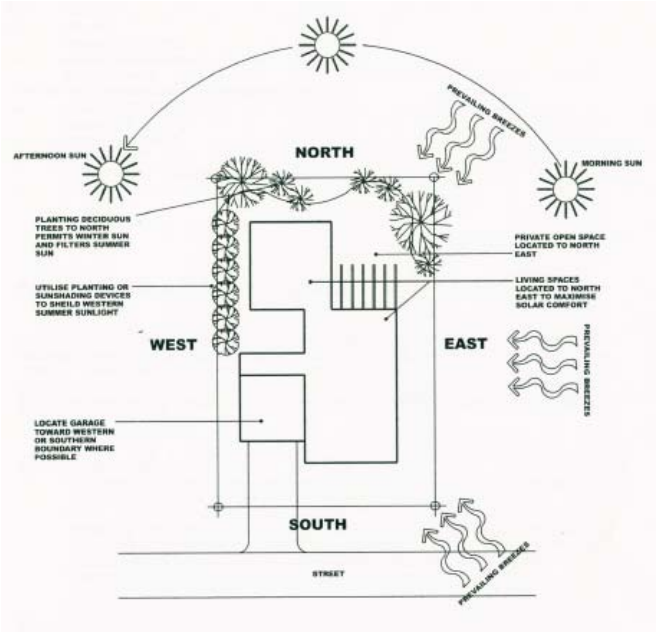
Building Orientation And Climatic Guide




Notional Living Areas Layout For Varying Lot Orientation for Solar Access




Design for comfortable Living



04 DWELLING ENVELOPE

## SETBACKS

All dwellings are to address streets and public open spaces (where applicable) to articulate built form and to provide opportunities for passive surveillance.

Design guidelines will strongly encourage the use of balconies, pergolas, verandahs and living areas with windows facing the primary and secondary streets and public open spaces to articulate built form and to provide opportunity for passive surveillance.

Houses on corner lots must be designed with consideration of their dual street frontage and open space. The elevation of the secondary street frontage must address the issue of visibility from public areas and provide an interesting residential façade that supports a high quality streetscape. The need for privacy for outdoor spaces within the lot must be addressed by the layout of the house in association with a landscape solution that provides acceptable visual screening.

Some portions of lots 14, 15 and 16 are subject to unstable soils (refer to annexures of the Environmental Assessment Report). Dwellings shall be built within the Building Location Envelope (BLE) and are subject to the same setback requirements as described on page 17.

Asset Protection Zones have been provided within lots 33, 38, 41, 48, 49, 50, 52, 53, 69 and 71 (refer to annexures of the Environmental Assessment Report). Dwellings shall be built within the Building Location Envelope (BLE) and are subject to the same setback requirements as described on page 17.

Sloping sites fall into 3 categories: side slope, downhill slope and uphill slope and have different setback requirements as described below.

**Flat Lots (grades up to 10%) or Lots on Side Slope**

• Front entry garages must be aligned with the main building line or setback from the main building line;

• For two storey buildings balconies above front entry garages are encouraged;

**SETBACKS (cont...)**

• For single storey buildings balconies or pergolas forward of the main building line are encouraged

**Lots on Uphill Slope**

Garages and driveways on lots on Uphill slopes can have a detrimental impact on the streetscape. Therefore, special conditions are necessary to ensure good quality streets and to minimise the dominance of garage doors and driveways.

• Front entry garages must be aligned with the main building line or setback from the main building line;

• Side entry garages will be encouraged;

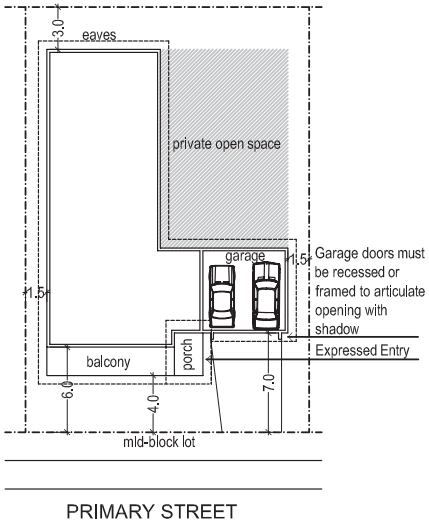
• For two storey buildings balconies above front entry garages will be mandatory; and

• For 1 storey buildings terraces or pergolas forward the main building line are mandatory.

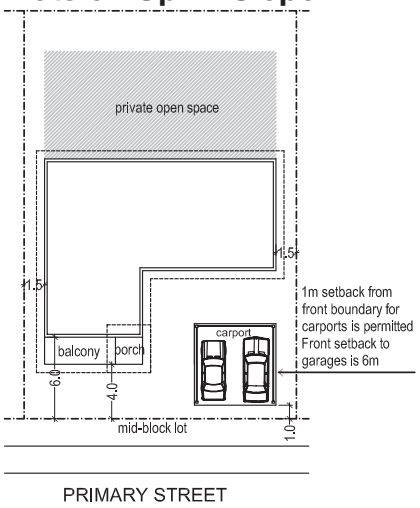
**SETBACKS (cont...)**
**Lots on Downhill Slope**

Garage doors and driveways on lots on downhill slope are generally less prominant therefore setbacks are less restrictive than the other categories. 1m setback from the front boundary for carports will be permitted. If carport is to be provided it must be screened on three sides.

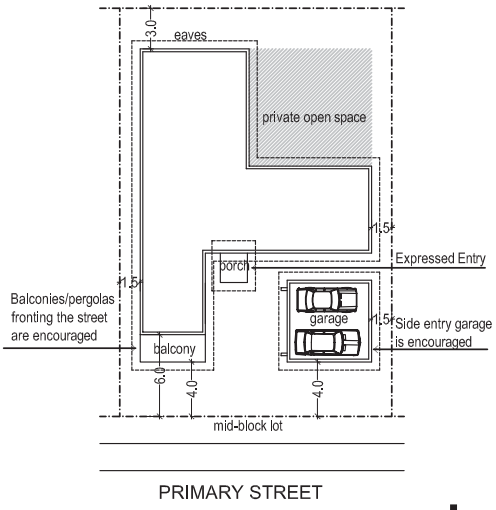
## Flat Lots (grades up to 10%) or Lots on Side Slopes




## Lots on Uphill Slope




## Lots on Downhill Slope



**SETBACKS (cont...)**

## Flat Lots (grades up to 10%) or Lots on Side Slopes

| ITEM | TYPE | REQUIREMENTS |
|---|---|---|
| Primary Street | wall<br>garage (with balconies above)<br>terraces / porches (on ground level)<br>garages (without balconies above) | 6.0m min.<br>6.0m min.<br>4.0m min.<br>7.0m min. |
| Secondary Street | wall<br>garage<br>balconies / porches | 4.0m min.<br>6.0m min.<br>3.0m min. |
| Side Boundary | wall | 1.5m min. |
| Rear Boundary | wall | 3.0m min. |
| Max. Building Height | - | 2 storeys |
| Site Cover | lots from 600 to 750m²<br>lots > 750m² | 65% max.<br>60% max. |
| Eaves<br>(can encroach on setbacks to a maximum of 500mm from the Boundary) | - | 600mm min. |

## Lots on Uphill Slope

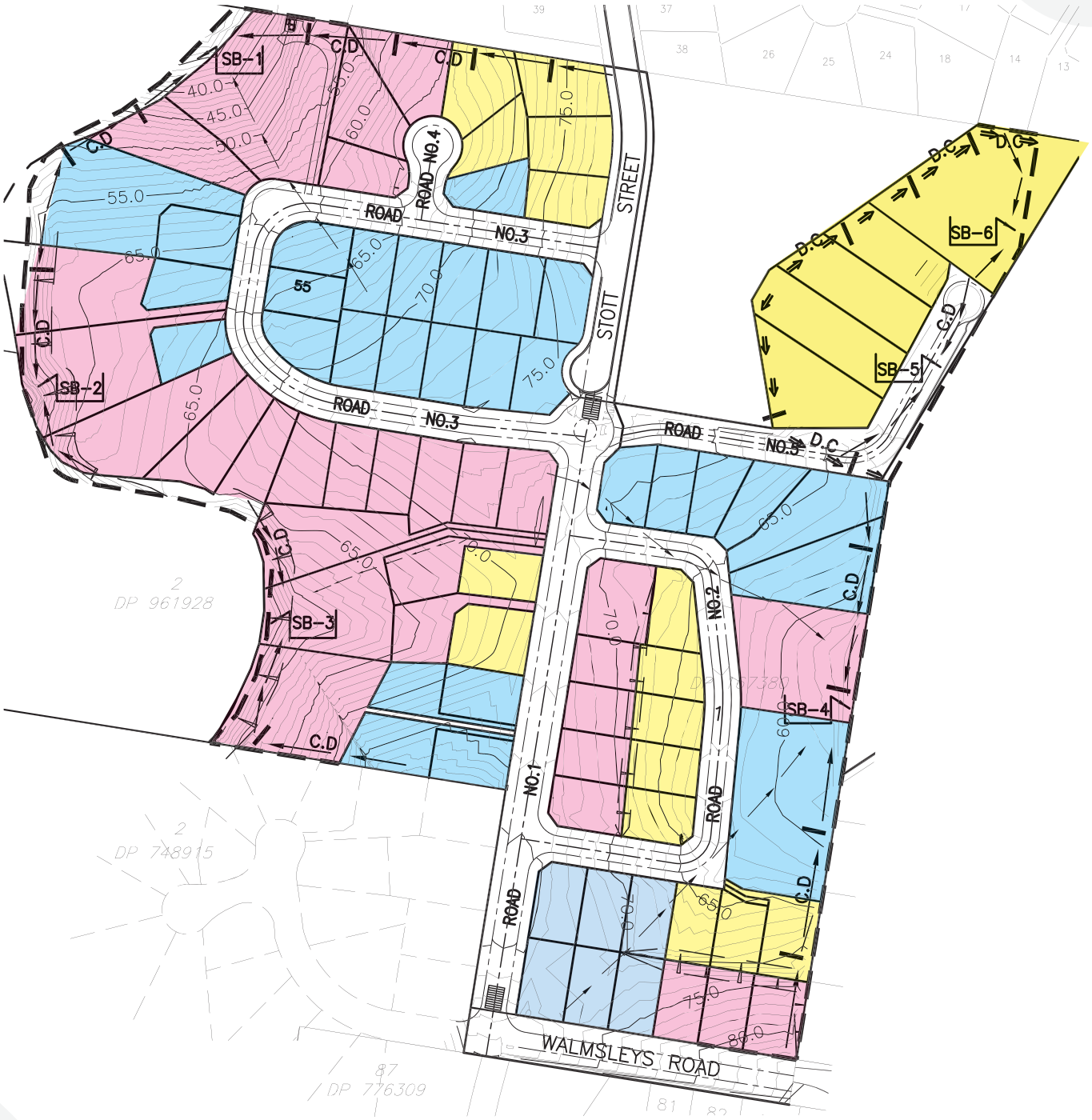
| ITEM | TYPE | REQUIREMENTS |
|---|---|---|
| Primary Street | wall<br>garage (side entry)<br>garage (front entry with balcony above)<br>garage (front entry without balcony above)<br>terraces/porches (on ground level) | 6.0m min.<br>4.0m min.<br>6.0m min.<br>6.0m min.<br>4.0m min. |
| Secondary Street | wall<br>garage<br>balconies / porches | 4.0m min.<br>6.0m min.<br>3.0m min. |
| Side Boundary | wall | 1.5m min. |
| Rear Boundary | wall | 3.0m min. |
| Max. Building Height | - | 3 storeys |
| Site Cover | lots from 600 to 750m²<br>lots > 750m² | 65% max.<br>60% max. |
| Eaves<br>(can encroach on setbacks to a maximum of 500mm from the Boundary) | - | 600mm min. |

## Lots on Downhill Slope

| ITEM | TYPE | REQUIREMENTS |
|---|---|---|
| Primary Street | wall<br>garage (front entry)<br>car port<br>garage (side entry)<br>terraces / porches (on ground level) | 6.0m min.<br>6.0m min.<br>1.0m min.<br>4.0m min.<br>4.0m min. |
| Secondary Street | wall<br>garage (front entry)<br>garage (side entry)<br>balconies / porches | 4.0m min.<br>6.0m min.<br>4.0m min.<br>3.0m min. |
| Side Boundary | wall | 1.5m min. |
| Rear Boundary | wall | 3.0m min. |
| Max. Building Height | - | 3 storeys |
| Site Cover | lots from 600 to 750m²<br>lots > 750m² | 65% max.<br>60% max. |
| Eaves<br>(can encroach on setbacks to a maximum of 500mm from the Boundary) | - | 600mm min. |

04 DWELLING ENVELOPE

**SETBACKS (cont...)**




LEGEND

- Lots on Side Slope or Slopes up to 10% (1:10m)
- Lots on Uphill Slope
- Lots on Downhill Slope

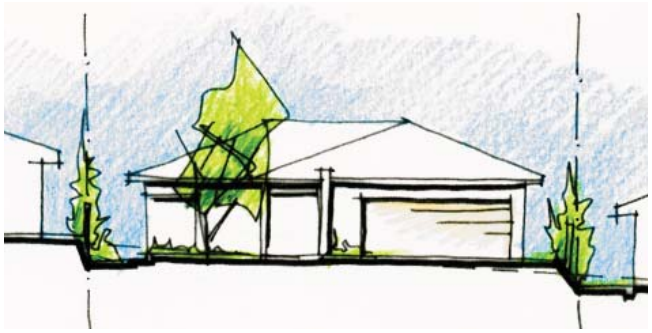
## BUILDINGS ON SLOPING SITES

The method of construction for each specific lot will be determined by the steepness of the site and must consider methods to minimise disturbance of existing ground levels and to take maximum advantage of the natural slope.

Design guidelines will enforce few retaining walls evident from the streets and retaining elements taken up within the buildings. Single level slab on ground will only be permitted in slopes of up to 10% (1:10m). Dwellings on slopes greater than 10% (1:10m) must adopt split levels or suspended floor constructions.

### Single Slab on Ground Home (Not on grades above 10%)

• Single level slab on ground allows for minimal level change within the home.
• Not allowed for grades above 10% (1:10m) as all retaining elements occur on side boundaries.
• No level change in the home.

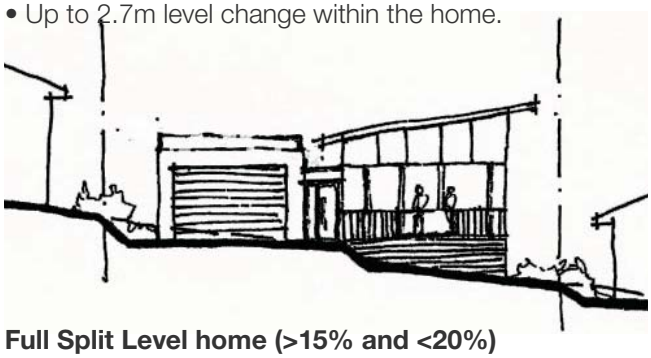


### Partial Split Level Home (>10% and <20%)

• Split level home with garage at either bottom or mid level.
• Building form allows for up to 2m level change within building.
• This home type will still require some retaining elements outside of the home on steep sites.

### Single level home with partial slab on ground (>10% and <20%)

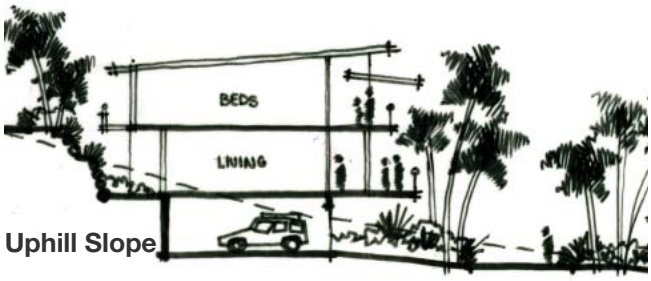
• Single level home that allows for a slab on ground for 50% of the dwelling. A good method to deal with slopes over 10% (1:10) with minimal retaining on lot boundaries.
• Up to 2.7m level change within the home.



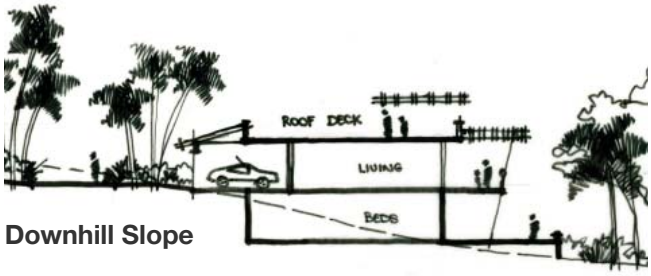
### Full Split Level home (>15% and <20%)

• Split level home with 50% upper floor level and lower level to be slab on ground.
• It provides good pedestrian and vehicle access.
• 2.7m level change within the home requires minimal retaining (less than 1m) on side boundaries for 1:6 side slopes.

### Side Slope




### Uphill Slope




### Downhill Slope

## BUILDINGS ON SLOPING SITES (cont.)

### Suspended floor. (>15% and <20%)

• High set timber construction with minimal earthworks to allow for vehicle access under.
• Full suspended floors throughout.
• Pedestrian access to the home from the street and private open space is via stairs.

### Suspended Floors. (>20%)

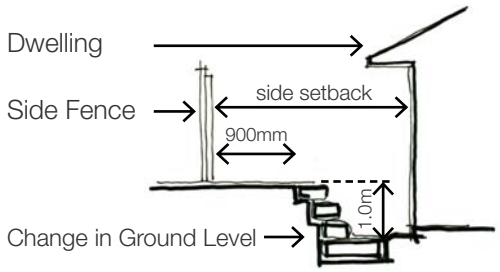
• Pole or light frame buildings offer a greater degree of flexibility in dealing with sloping and uneven land surfaces and solve many 'wet ground' housing maintenance problems.
• High set timber construction with minimal earthworks
• Full or partly suspended floors throughout.
• Buildings are not to be sited so that only roofs are visible from the street.
• Built form to be light weight construction with minor use of masonry with large overhangs characterised by sheet metal roofs and suspended decks.

## EXCAVATION AND EMBANKMENTS

Excavation and embankments must comply with The Tweed Shire Control Plan - Section A14 Cut and Fill on Residential Land.

All dwellings must avoid detrimental impact on adjoining allotments as well as to the streetscape. Excavation or fill outside of the dwelling shall not exceed 1.0 metres in height from the natural ground level of the land.

Existing levels must be maintained at all boundaries. All cut and fill faces must be kept at a minimum of 900mm clear of each boundary and must incorporate suitable garden beds and landscape solutions (shrubs & trees).



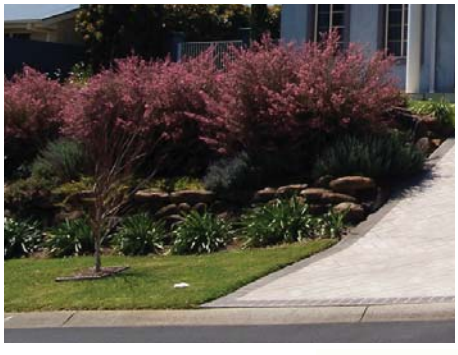

Cut and fill batters shall not exceed a slope of 1:2 (v:h) unless otherwise approved by Council. All batters are to be provided with both short term and long term stabilisation to prevent soil erosion.

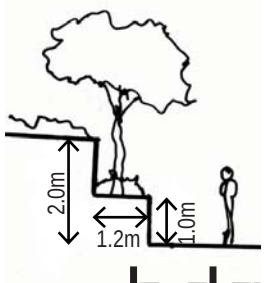
Where a batter is greater than 1:2 or higher than 0.6 meters the embankment is retained by rocks, timber sleeper or other approved retaining walls.

Retaining structures are to be made of durable materials and drainage shall be provided at the foot of each embankment or retaining wall.

### Retaining Walls

• Retaining walls should use materials that compliment the natural environment (ie. rocks or timber sleepers);
• Retaining walls made from metal or concrete will not be permitted;
• All retaining walls over 1.0m must be contained within the building and on driveways;
• Maximum height of any single level change external to the building is to be a maximum of 1.0m in height;
• Where retaining walls are incorporated on corner sites, they must be structured in accordance with the above mentioned requirements; and
• Any level change required exceeding 1.0m in height must be terraced with retaining walls. Retaining walls are to be a maximum of 1.0m each step with a maximum of 2 steps per terrace (as per diagram below).





## COLOURS AND MATERIALS

The use of warm natural materials such as timber and stone features carefully combined with masonry walls, metal feature panels, glass, aluminium and steel are encouraged to achieve streetscape variety. A maximum of 50% of external masonry will be encouraged.

Colours for all buildings should reflect the colours of the landscape. The Design Guidelines will promote the use of non-reflective, natural earthy or green colours. The specification of highlight colours on detailed building elements or feature elements can be used based on the ability to create a harmonious diversification on the built form.

All Ancillary structures, garages, carports and storage sheds are required to be complementary to the character of the main building in colour, material and form.

To promote a sense of arrival, entries to homes are to be clearly visible and identifiable from the street. Design, appearance, external colours and materials are to be integrated with the design of the main building.

Roofs are to be a simple composition of shapes with the use of architectural elements to create interest to the elevations. Roof materials are limited to colorbond profiled metal roofing of a low reflective finish.

Roof pitches for the main building shall be a minimum of 25 degrees for pitched roofs and 5 degrees for Skillions. All gutter and down pipe treatments must complement the dwelling design.

Low pitch roof elements may be used on secondary parts of the building such as verandahs, links and projections from the building bulk.

non-reflective, natural earthy colours and highlighted colours in detailed elements

Combination of mansory and lightweight materials.

non-reflective, natural earthy colours

Combination of mansory and lightweight materials.

Well defined entry (porch). Colours and materials are complementary to the design of the main building

Roof of main building minimum 25° for pitched roofs. Minimum 600mm overhangs

Roof of main building minimum 5° for skillion Minimum 600mm overhangs

## 6.0 APPENDIX 1 - SLOPE ANALYSIS - DESIGNED GROUND LEVELS


SLOPE ANALYSIS

| Color | Range Beg. | Range End |
|---|---|---|
| | 0.00% | 10.00 % (1:10) |
| | 10.00 % (1:10) | 20.00 % (1:5) |
| | > 20.00 % (>1:5) | |