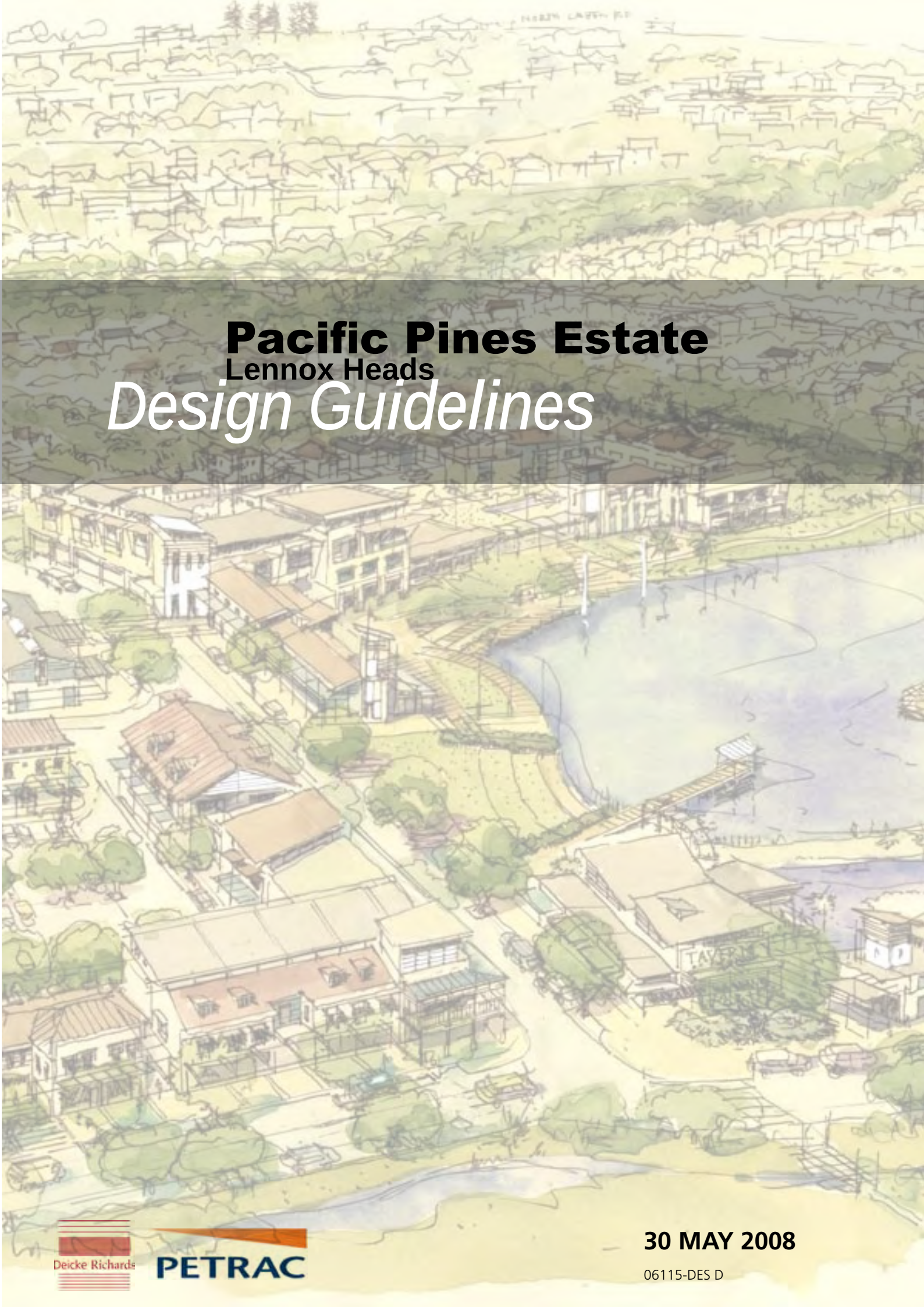

Pacific Pines Estate

Lennox Heads

Design Guidelines

Deicke Richards

PETRAC

30 MAY 2008

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NOTE:
Cover illustration completed by Clive Alcock of Annand Alcock Urban Design, Sydney.
Perspectives completed by Peter Edgeley.

1.0 INTRODUCTION

Deicke Richards have been engaged by Petrac to provide Design Guidelines based on the agreed principles for the proposed development of the Pacific Pines Estate. These are intended to provide guidance to encourage a sustainable urban form and provide a positive contribution to the future development of Lennox Head. They are intended to act as an integrated planning instrument, managing and promoting quality development whilst ensuring the outcomes of Council processes are implemented in a clear, cohesive and progressive manner.

1.1 REGULATORY CONTEXT

The development of Pacific Pines is being pursued by way of a Concept Plan approval under Section 75M of the *Environmental Planning and Assessment Act 1979* (Part 3A). This Concept Plan approval will outline the scope of the project and set out proposals for the staged implementation of the proposed development.

Following approval of the Concept Plan, future applications will be required to implement the development. Section 75P(2) of the Act requires that any future approvals must be '*generally consistent with the approval of the concept plan*'. These Design Guidelines have been developed to provide a framework within which future applications can be assessed. Consistency with these Guidelines will ensure future applications are consistent with the Concept Plan.

It is also suggested these Design Guidelines be adopted by Ballina Shire Council as a Development Control Plan for the Pacific Pines site.

1.2 HOW TO USE THESE GUIDELINES

These Guidelines are structured to provide clear guidance for future development within the Pacific Pines Estate using a combination of maps, diagrams and text.

The Guidelines are designed to be used in the following manor:

1. All new development needs to address the overall mass and scale of the development within the scenic contaxt of the Pacific Pines site and in response to the existing site vegetation and features;
2. New development needs to address the new areas of public realm, negative spaces between buildings and associated landscaping elements: and
3. The built form needs to address function, mass scale and the public interface. The Guildlines are intended to be read and applied sequentially however the order does not infer a hierarchy of importance.

All sections of the Guidelines have sustainability criteria at differing scales and for differing elements.

The Guidelines include an analysis of the existing character of the site with recommendations on how the positive elements may be retained. They address each of the proposed development uses to highlight core design principles for the creation of good urban places and they provide recommendations for the various common elements proposed for the project.

The Design Guidelines are presented in the form of **Performance Criteria**, identifying site-specific issues and **Acceptable Solutions** to satisfy criteria. To ensure that subdivision and/or development of the study area is in accordance with the objectives of these Guidelines, a proposal would need to demonstrate compliance with the Performance Criteria through the adoption of the Acceptable Solutions provided, or alternatively, a suitably justified solution.

1.3 DEFINITIONS

The following definitions apply to this document

Height - means the vertical distance between ground level (existing) at any point to the highest point of the building, including plant and lift overruns, but excluding communication devices, antennae, satellite dishes, masts, flagpoles, chimneys, flues and the like.

Setback - means the minimum required distance between lot boundaries and the outer face of the external wall of a building erected or proposed to be erected thereon.

Site Cover - means the percentage of the site covered by buildings.

Active Frontage - means edges of enclosed habitable spaces that front the public realm and have a clear view to and from it. Wet areas, carparking spaces, display cabinets are not ragarded as habitable spaces

Deep Soil Landscaping - Landscaping directly over existing soil profiles and not separated from those profiles by elevated podium structures, concrete slabs and other impermiable surfaces.

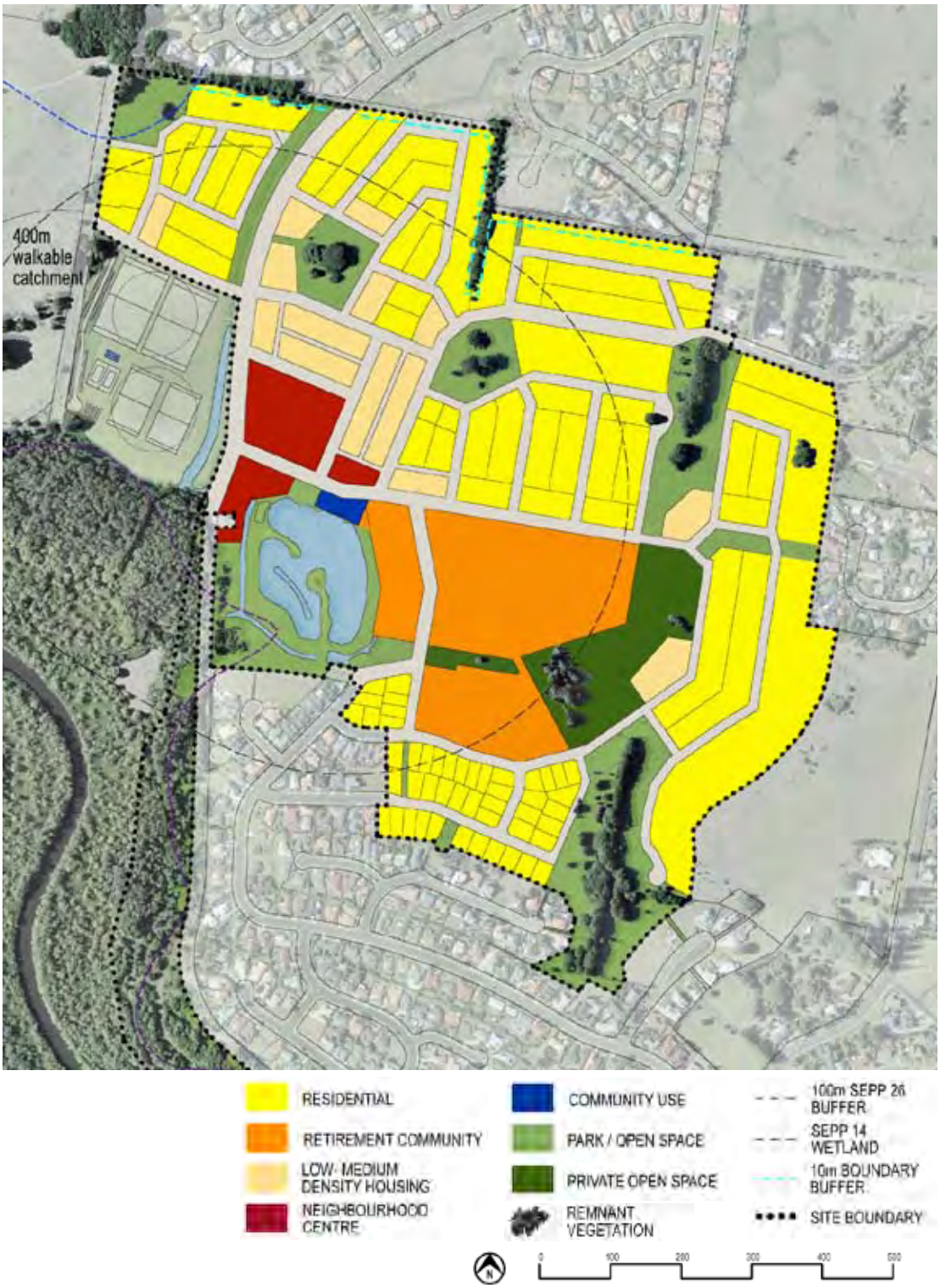

FIGURE 1: CONCEPT PLAN

FIGURE 2: ARTIST'S IMPRESSION

2.0 EXISTING LANDSCAPE CHARACTER

2.1 SCENIC VALUES

New development protects the landscape values of the site. It ensures urban and built form is complimentary to the scenic values of the landscape and environment by establishing which facets of the landscape contribute to the character and maintaining and enhancing these elements as part of future development.

ISSUES

Visually the rural landscape of the site can be divided into a series of distinct landscape forms and elements including:

- The Spur
- The Slopes
- The Valley Floor
- The Pond
- The Wetlands

THE SPUR

The Spur runs along the northern edge of the site. The northern side of the Spur is visible from areas to the north including the Coast Road. Adjacent areas to the Spur include housing developments, remnant vegetation and farmland.

THE SLOPES

The slopes vary in grade, from 1:6 to 1:4. They are located to the east and north of the site and form a natural amphitheatre around the pond. A feature of views from the site is the grouping of Norfolk Island Pines along North Creek Road. Scattered remnant trees delineate former fence lines and introduce visual interest and wildlife habitat.

THE VALLEY FLOOR

The Valley Floor forms the focus of the development. It includes the Pond, the Brook and associated vegetation.

THE POND

The Pond is the focus to the development and surrounding areas. It with high visual amenity values.

THE WETLANDS

The Ballina Nature Reserve is a natural area to the east and south-east of the development. A slither of wetlands is part of the development site. Which provides a focus for long views from the developed areas of the site.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
The existing land form character is retained and enhanced.	The topography of the Spur, slopes, and Valley Floor are maintained where possible with the exception of the cut and fill associated with elevating land adjacent to the Pond above flood levels. Cut and fill is minimised. Larger house blocks are located on the steeper areas of the site. Houses are built on split floor pads and retaining walls of natural appearance are split into a series of lower walls rather than a single tall one.
Existing vegetation is retained and enhanced.	Existing vegetation is retained in proposed parks and within larger hillside blocks where ever possible.
Views to the water bodies are retained and enhanced.	Views to the Pond and Wetlands from roadways and principle buildings and open space areas are provided where possible. These may be framed by buildings or vegetation.
The Ballina Nature Reserve provides a natural focus for long views from elevated areas of the site, adjacent areas, from roadways and open space. These are framed by buildings or vegetation.	The Brook is a focus within parkland, for the surrounding area.
Visual intrusion by taller buildings is minimised.	3 storey buildings are located on the lower areas of the site within the Neighbourhood Centre.
A vegetative backdrop along the elevated boundaries of the development is provided	Trees are planted in widened road reserves and at the rear of larger house blocks on sloping sites.
Scenic qualities of the spur are retained and enhanced .	An avenue of Norfolk Island Pines is provided along the Spur to provide a backdrop for the development and views to the north.

1

1. Aerial perspective of existing site

2.2 SLOPING LAND AND SOILS

The need for earthworks (cut & fill) is minimised though appropriate lot layout and size, recognition of site/land constraints and use of suitable construction techniques and materials.

ISSUES

The site has many elevated areas and slopes to the north and east. Some of these areas have slopes greater than 1:5 and are thus require careful treatment to maximise aesthetic outcome and cost effectiveness. The slopes between 1:5 and 1:10 over the remaining portion of the site present great challenges to high densities of development and smaller lot sizes. Constructing higher densities on more visible and steeper sites reduces the potential of tree screening and creates undesirable "walls of built form". Spaces between buildings allowing for trees greatly reduce these visual impacts.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
Development is restricted to sites where slopes are compatible with future development.	No development occurs within areas of slope greater than 1:3.
Lot sizes and guidelines reflect site characteristics	In areas known to have slopes of greater than 1:6, individual allotments are to be greater than 720m^2. Building envelopes and or setbacks encourage tree planting between buildings on to upper level slopes. Small lots (less than 450m^2) are restricted to slopes less than 1:6 gradient.

1 | 2 | 3

1. View looking east to Pond. Earlier stages of Pacific Pines Estate and Norfolk Island pines visible in background
2. Historic Norfolk Island pines on coast road
3. View looking west to the pond with Ballina wetlands behind

2.3 REMNANT VEGETATION

Vehicles, people and building operations and changes to groundwater, drainage and nutrient levels all have impacts on remnant vegetation and minimising negative impacts is a priority to ensure health and vigour.

ISSUES

Remnant vegetation on the site has been noted as having high environmental and visual values. Wherever possible, existing trees shrubs and other vegetation of note is protected, retained and maintained as a feature of the future development.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
Remnant vegetation is protected from damage during construction and into the future.	Fencing is installed a minimum of 2m outside the dripline (extent of outermost branches) of the remnant vegetation to ensure during development, no building works occur within this area (above and below ground). Contractors are trained to ensure no liquids containing building materials, cleaners or other contaminants are poured onto soil or grass, particularly adjacent to remnant vegetation. If accidents occur contractors flood the immediate area to minimise impacts to soil and remnant vegetation. Contractors are trained to ensure no airborne pollutants, poisons, paints or gases are expelled adjacent to remnant vegetation. Following construction, areas around the trees roots are planted to minimise access and compaction around roots. Access is provided using elevated walkways or directed through areas where compaction does not impact on vegetation.
Changes to drainage and water table in the vicinity of remnant vegetation is minimised	Wherever possible, drainage towards and within areas of remnant vegetation is maintained in its predevelopment condition. Additional vegetation is planted around the remnant vegetation to provide a buffer.

2.4 STORMWATER MANAGEMENT AND ONSITE STORMWATER HARVESTING

Well located and designed stormwater systems protect the quality of receiving waters. On-site stormwater source controls that reduce run-off impacts, and allow for the harvesting and reuse of stormwater are promoted.

ISSUES

The site currently drains to the existing filtration pond and, from there, to the Ballina wetlands. Wherever possible, runoff will be filtered through vegetation to remove sediment and pollutants prior to entering stormwater systems or the Pond to minimise environmental impacts.

Water Sensitive Urban Design Principles are implemented within the development. Roof water storage for irrigation use and toilets should be utilised by new development. Swales are developed in open space areas to direct water flows. Planting is incorporated adjacent to large areas of paving to increase ground water absorption.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
The major drainage system has the capacity to aesthetically and safely convey stormwater flows under normal operating conditions.	Drainage corridors include grassed and vegetated swales along side roads, broad swales within parks and open space. Cascading grass swales are formed in the drainage corridors to provide additional sediment control and nutrient take up. Due to the steep topography of the site, the swales are separated by a rock lined weir which prevents erosion as well as acting as a 'feature wall' as the swales step up the slope. At the base of each swale are gravel filled infiltration trenches to allow stormwater runoff to be conveyed to the groundwater system.
Stormwater run-off from roofs and hard surfaces is minimised.	New dwellings have rainwater tanks for the reuse of roof water run off for washing machines, flushing toilets and external taps.
Stormwater runoff from driveways and external hard surfaces is not discharged directly into stormwater system	Vegetated or turfed swales are incorporated at the base of external paved areas over 10m^2 in area. Porous paving is utilised for external paved areas other than driveways.
Landscaping incorporating terracing, contour banks, vegetated filter strips and mulching to increase stormwater infiltration is maximised.	Vegetated areas are provided at the rear of allotments for the retention of existing trees and maintenance of existing surface levels.
Shared-use facilities that protect water bodies and ecological corridors are provided.	Open space, stormwater management and visually important vegetation is bound by streets and public access ways to allow passive recreational uses.

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2 3

1. View through figs to pond
2. Remnant vegetation and brook
3. View looking north to paddocks with remnant trees

2.5 THE SPRING

ISSUES

The spring, located within the proposed parkland area, has been noted as having cultural values to the original owners of the area. The Spring contributes to the amenity of the area with the continuous flow of water, which runs downhill to the Pond, and supports a diversity of lush vegetation including the endangered Hairy Joint Grass. Maintaining and enhancing the Spring and surrounding area will contribute to the amenity and cultural values of the development.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
The Spring and the area immediately it is retained as a valuable element within the development.	Fencing is installed to protect the Spring. Vegetation and landform within the area will be retained in its existing form during construction and development of the associated park Landscape works within this area are limited to removal of weed species and planting of appropriate plant species, which compliment the Spring and retained vegetation. A path to the Spring and signage is placed so as to enhance the area and to minimise visual and environmental impacts.
Residents and visitors are educated regarding the values of the spring both culturally and environmentally. This is done in collaboration with representatives to realise the values of the Spring both culturally & environmentally.	Information on the Spring and its cultural and environmental values is provided to the residents as part of the Pacific Pines information kit (subject to discussions with the traditional owners). Interpretive signage is located sympathetically adjacent to the Spring to explain the significance to visitors to the area (subject to discussions with the traditional owners).

3.0 LANDSCAPE GUIDELINES

High amenity landscape treatments contributes to the existing streetscape, open space, private areas and the local character. Good planting selections assist in the creation of sense of place or specific character, enhance the amenity of the area and provide a suitable backdrop to the built form. Landscape modifies the climate provide shade, shelter and summer cooling thus providing greater comfort.

Landscapes provide a range of recreational and environmental settings, corridors and focal points. Landscaping address issues of security and surveillance.

ISSUES

Landscape treatments respond to landform and steeper gradients of part of the site. They frame and enhance views and address safety and security issues. Plantings provide a common theme to link disparite buildings in a streetscape. Plants utilised are low maintenance, create a minimum of leaf drop or litter, suffer from few pests and diseases and do not require constant upkeep.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
The shape and massing of landscaping will enhance personal safety and security, provide shade and shelter.	Trees are planted: - Along all streets and footpaths; - Between the footpath and the street; - To provide continuous canopy within 20 years; - At 8-10m intervals minimum 15m unless there are safety issues; - Using suitable species forms dense tall canopy is a minimum of 10m wide; and - With a suitable planting hole, minimum 2m wide, to allow future growth. - Within 3m of pedestrian paths tree canopies will be lifted above 2m and groundcovers planted which do not grow above 600mm.
Sustainable horticultural practices are utilised to: - Provide suitable habitats for faunal diversity and encourage natural predators; - Avoid planting native species in large monocultures; - Minimise the prevalence of plant pests and diseases; and - Protect and insulate soil, reduce evaporation and improve its organic component.	Species recognised as hardy and vigorous in the district are planted. No plant comprises more than 5% of the species mix. All tree pits are three times the width and depth of the tree container and contain amended topsoil. All garden areas have cultivated topsoil a minimum of 300mm deep and are mulched to a minimum depth of 75mm with organic mulch. All lawn areas have a minimum cultivated topsoil of 150mm deep and are located in areas : - With grades no greater than 1:4; - Greater than 30m^2; and - Wider than 3m. A maintenance program, a minimum of 3 months in duration is applied to all landscaped areas. Chemical based pesticides, herbicides and fertilisers are avoided, particularly those used on lawns. Weed control is via hand weeding, steam and flame treatments.
Appropriate plants are selected based on data and local knowledge to enhance environmental qualities of the area.	Hardy native and non-native plants are utilised. Native species will be local provenance. Non-indigenous and indigenous plant species known to be local weeds are avoided.

FIGURE 3: GREEN NETWORK PLAN

3.1 NEIGHBOURHOOD CENTRE STREETSCAPE

The Neighbourhood Centre streetscape will provide a focus for development of the area, providing outdoor spaces which link disparite built form, encourage walking and supply areas for visitors and residents to congregate and interact in a safe, comfortable and aesthetic environment.

ISSUES

The Neighbourhood Centre streetscape has high quality finishes, furniture and design which encourages walking and popular usage. Trees, vine covered pergolas and planting provide shade and shelter and cool the area over summer.

Tree plantings provide a human scale to the development, screening taller buildings and overhead windows. The landscape has a consistant character linking disparate built form, with a paving, planting and furniture theme.

Robust spaces are provided which cater for a variety of urban uses.

Sketch 1: Main Street view looking eastwards

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
High quality, durable street furniture and amenities are provided. Benches provide both prospect and refuge.	Street furniture is distributed as follows: - Benches are provided at a rate of a minimum of 2 per block, with more in intensively used areas such as adjacent to pedestrian crossings and adjacent to transport stops. - Benches are preferably located undercover backing onto a wall or taller vegetation behind with clear views to areas of activity. - Rubbish bins are provided at a rate of a minimum of 1 per block with more in intensively used areas such as adjacent to pedestrian crossings and adjacent to transport stops. Placed at least 3 metres from benches to minimise visual and odour impacts. - One drinking fountain is placed in each high use pedestrian area such as the lake front, shopping area and community hall.
Paving provides a unified paving character for the Pacific Pines Neighbourhood Centre	Paving is in units to allow ready access to services and relaying
Pedestrian movements across the Main Street are frequent and safe.	Pedestrian crossings across Main Street are designed to allow safe movement with priority to pedestrians.

3.2 RESIDENTIAL STREETSCAPE

The residential streetscape provides a relaxed, safe and friendly setting for the resident's homes.

ISSUES

Interaction, safety and security is encouraged by focussing resident's views to the street, unencumbered by fencing or screen planting. Landscape treatments are low maintenance and low key with an emphasis on trees for shade and cooling and grass, with generous footpaths to encourage walking. Whereever possible water sensitive urban design is implemented within the street in an attractive way.

Sketch 2: Stoneyhurst Drive looking eastwards along ridgeline, with Norfolk Island Pines plated in grassed parking areas

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
Views up streets are towards elements that are consistent in landscape character with the upper parts of the site.	Views up streets terminate on landscape elements not abrupt built form.
Lot layout enhances personal safety and security.	Lots front onto all streets and open space is bounded by streets on at least two sides in all cases.
High quality, durable street furniture and amenities are provided.	Street furniture is distributed as follows: - Benches are provided at a rate of a minimum of 1 per block, with more in intensively used areas such as adjacent to pedestrian crossings and adjacent to transport stops. - Benches are preferably located undercover backing onto a wall or taller vegetation behind with clear views to areas of activity. - Rubbish bins are provided at a rate of a minimum of 1 per block with more in intensively used areas such as adjacent to pedestrian crossings and adjacent to transport stops. Placed at least 3m from benches to minimise visual and odour impacts. - One drinking fountain is placed in each high use pedestrian area such as the lake front, shopping area and community hall.
Paving is unified in paving character for the Pacific Pines Neighbourhood Centre	Paving is in units to allow ready access to services and relaying

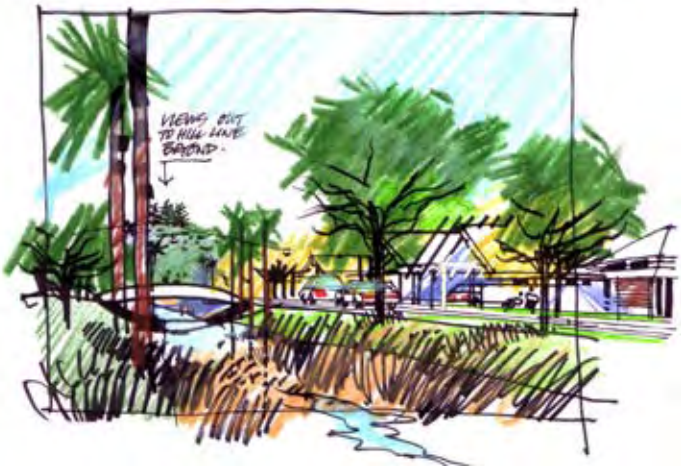
3.3 PARKLAND AND OPEN SPACE GUIDELINES

The parkland and open space will provide an attractive, safe and secure setting for a range of recreational and leisure activities. It will encourage interaction between residents, ease of access and provide a comfortable microclimate. The parkland and openspace will encourage interaction with wildlife by providing suitable habitat and incorporate water sensitive urban design strategies.

ISSUES

Trees are retained in many of the parks and open space areas and development which ensures their health and vigour is maintained and enhanced. Safety and security is enhanced through design. Access is encourage by providing high quality pathways and furniture. Plantings, paving and furniture are selected to minimise future maintenance needs

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
High quality, durable park furniture and amenities are provided	Park furniture is distributed as follows: - Benches: a minimum 1 per 10,000m^2 with a minimum of one per park - Rubbish bins: a minimum 1 per 10,000m^2 with a minimum of one per park
Car parking and access by vehicles are not encouraged	No roadways or parking is included within park.
An area for community gardens is included within the public parkland	A community garden a minimum of 100m^2 with potential to grow to double this size is provided It is in a well drained, elevated location with northerly aspect, away from the drip line of any trees or remnant vegetation.
Water sensitive urban design strategies are implemented.	Vegetated swales and brooks maximise infiltration. Refer Section 2.4 Stormwater Management and Onsite Stormwater Harvesting.
Existing natural vegetation is maintained, particularly on hillsides and along waterways.	Areas of natural vegetation are preserved and adjacent development will have minimum impact on adjacent vegetation.
Populations of Hairy Joint Grass are protected in key locations.	In areas where Hairy Joint Grass is protected and established the following are undertaken: - Maintain existing moisture and light regimes, - maintain adequate nutrients such as added cow manure - Undertake slashing to control growth of adjacent grasses
Areas of cultural heritage are maintained and enhanced.	The Spring, Brook and immediate surrounding area are protected and retained as a major landscape features. Existing vegetation with in this area is retained and management practices implemented to protect the character of this area.



Sketch 3: Looking over Brook to bridge and Retirement Community, view out to hills and Norfolk Island Pines

Sketch 4: Looking eastwards towards iconic Ficus tree with park beyond

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1. Existing wide road with Norfolk Island Pines

3.4 CAR PARK DESIGN

Car parking areas have a positive character, enhance accessibility and safety and promote the principles of environmental sustainability by minimising runoff and maximising shade. Siting and layout of car parking provides attractive streetscapes, amenity and character. Site coverage of hard surfaces is restricted and permeable surfaces are maximised; maintaining a balance between the built/unbuilt areas.
Car parking is screened from general view, however the location of car parks does not obstruct/ encroach significant view corridors. Car parking discourages crime and increases safety and security in the site through design.

ISSUES

There is significant areas of at grade parking areas associated with the retail and the three story mixed use building proposed in the Neighbourhood Centre. The bulk of this is in one location to make it easy to find and clearly legible. Buildings sleave larger parking areas to improve streetscape amenity and vitality consistent with the existing Lennox Centre.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
Areas of infiltration are maximised by minimising areas of hard surfacing	Hard surfacing is restricted to access ways. Wherever possible car parks spaces are surfaced with reinforced turf, reinforced gravel or permeable pavers, which allow water to infiltrate and thus minimise runoff.
Heat absorption and reflection is minimised by providing continuous shade across the car parks.	Large shade trees and vine clad pergolas are incorporated into car park to provide shade and cooling. Shade trees are planted within continuous planting beds not narrower than 1.5m. Shade trees are planted at 8 to 10 intervals and at no greater distance than 15m from one another. Shade trees are selected that perform well in urban environments with a mature spreading canopy of at least 10m within 15 years. Pergolas are not lower than 3m and of appropriate construction to support a large mature vine. Climbing plants are suitably vigorous species, which will provide a dense cover within 10 years.
Car parks are screened from roadways, open space and residential areas.	A minimum 2m vegetated buffer is provided around car parking areas that are exposed to the street and service more than 4 cars.
Storm water runoff from driveways and external hard surfaces does not discharged directly into the storm water system.	Vegetated or turfed swales are incorporated at the base of external paved areas over $10m^2$ in area. Car parks in key visual corridors are avoided
Landscaping incorporating terracing, contour banks, vegetated filter strips and mulching to increase stormwater infiltration is maximised.	Vegetated areas are provided at the rear of allotments for the retention of existing trees and maintenance of existing surface levels

3.5 FENCES AND RETAINING WALLS

Fencing is suitable to the development type, complements the existing streetscape and character of the area, promotes safety and security and highlights entrances. Retaining does not encourage large amounts of cut and fill and is not be visually prominent.

ISSUES

A number of edge conditions exist within the site between public and privately owned land and between highly constrained privately owned land parcels and less constrained built form locations. A number of fencing types will be required to respond to the variety of urban conditions which exist on the subject site. Fencing within the site will need to respond to issues including:

- Visual appearance;
- Ability to allow wildlife corridors to function as they do currently;
- Ability to control domestic animals; and
- Delineation of privately owned land parcels.

The steep nature of the site will necessitate retaining both between and within private allotments. The height of individual retaining walls needs to be controlled to ensure the visual appearance of the development is not scarred by tall retaining walls.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
Ensure fencing and courtyard walls: - Do not detract from the desired Lennox Head character and do not become a dominant built element in the landscape; - Provide a sense of territory, privacy, noise reduction and safety for residents; - Do not remove the sense of safety in the street which pedestrians gain from the casual observation by residents; - Retain opportunities for casual social intteration in the commmunity. - Are built to encourage cross ventilation between individual allotments; - Are coloured in neutral tones and receding colours; - Are scaled appropriately; and - Are built to minimum glare or heat radiation.	Refer requirements of Ballina Shire Council Combined Development Control Plan, Chapter 16 - Lennox Head. Fencing between private alotments and public parkland is to be 450mm high minimum and in accordance with the front fencing requirements of the Ballina Shire Council Combined Development Control Plan, Chapter 16 - Lennox Head. Fencing is a minimum of 10% open to allow cross ventilation between private allotments and from the street. Unless screened and shaded by vegetation or other structures, the following is avoided: - High glare materials or finishes which are white, or pale in colour or reflective; and - Materials dark in colour.
Retaining within privately owned areas of built form has a positive impact on visual amenity by being: - Articulated; and - Constructed in sensitive materials.	Retaining walls within landscaped areas and where they are not integral to a building, are a maximum of 1.5m high. Retaining is articulated into maximum 2.4m panels. Unless screened and shaded by vegetation or other structures, the following is avoided: - High glare materials or finishes which are white, or pale in colour or reflective; and - Materials dark in colour.
Views to and from the front of residences maximise security and safety.	Gardens remain open forward of the front building line.

3.6 PRIVATE LANDSCAPE AREAS

Appropriate landscape contributes to the amenity of the a residential lot, enhances the microclimate and minimises maintenance.

ISSUES

The site is located within the subtropical zone with the majority of rainfall falling during the summer months. During the winter months, temperatures are usually below human comfort levels at night and occasionally during the day. During summer temperatures are often above human comfort levels during the day.

The layout of the house and garden and the choice of materials and finishes can significantly enhance human comfort, minimise use of energy and fossil fuels and enhance the use of house and garden.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
Covering of building and hard surfaces is minimised.	Construction of large footprint single story buildings with significant coverage is discouraged Significant site coverage by buildings and non-permeable surfaces such as other structures, swimming pools, non-permeable drives and paving is discouraged. Refer to Section 2.4 Stormwater Management and Onsite Stormwater Harvesting.
Plantings are used to: - Minimise direct heat exposure, glare and reflection during summer; - Maximise cooling summer breezes during summer; - Minimise exposure to westerly winds; and - Maximum heat exposure during winter.	Pergolas with climbing plants or large trees are used and appropriately located adjacent to the western side of the house and outdoor living areas. Appropriate trees, tall shrubs or climbing plants are planted adjacent to the western walls of the residence. Dark materials or surface finishes are avoided and non-reflective, mid-tone coloured materials or surface finishes are used. Unshaded paved surfaces are minimised and areas of vegetation are maximised to improve evaporative cooling effects.
Soil compaction is minimised around trees, in areas of natural vegetation, turf and in garden areas. All retained trees are healthy and do not represent a safety risk.	Egress by machinery and vehicles, storage of materials and location of site buildings is limited to those areas where construction is to occur. Temporary fencing is erected during construction to prevent contractors utilising the space under existing trees or bushland. The fence occurs on the drip line or outer extent of the canopy. An arborist is used to assess all trees proposed to be maintained within 10 metres or adjacent to new built form.

4.0 NEIGHBOURHOOD CENTRE BUILT FORM

A Neighbourhood Centre is an identifiable focus for a community. A centre fosters community interaction and sharing. It encourages walking and interaction within a well defined, positive and attractive environment. Centres enhance accessibility and safety and promote the principles of environmental sustainability.

The urban, built form and landscape is highly legible and contributes to the existing streetscape and the local character with active frontages and overlooking.

The design of the development does not obstruct/encroach significant view corridor and it enhances existing vistas and views whenever possible.

A range of recreational and environmental settings, corridors and focal points are provided. Issues of security and surveillance are addressed.

Built form offers permeability in addition to the surrounding streets for finer grain pedestrian movements.

Built form sleeves large exposed car parking areas from the street.

The Neighbourhood Centre provides sufficient development intensity to sustain a vibrant centre that is activated at all times of day. As many residents as possible are located within a 5 minute walk (or 400m) of the Neighbourhood Centre to encourage walking and reduce motor vehicle dependence.

The Neighbourhood Centre delivers a diverse range of denser housing types.

ISSUES

The Neighbourhood Centre is the focus of the Pacific Pines Estate (see Figure 5). The Centre is the most intensively developed component of the community, with a mixture of uses to encourage walking and to ensure vitality of the public areas. The Neighbourhood Centre does not directly adjoin existing low-density residential areas and is in the lowest part of the site so it has increased building scale in this area, up to three stories, to help deliver the required intensity. It requires a high amenity public realm to encourage walking and interaction, shade, summer breezes, minimisation glare, places to sit and talk needed. It contains key community facilities that are celebrated in the urban composition. Beacuse the Neighbourhood Centre is viewed from above from adjoining redisential areas large flat rooves are discouraged and articulated pitched roof forms are encouraged.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
The Neighbourhood Centre provides an identifiable core to the development.	Buildings are 3 stories in scale. Footpaths are broader, more highly finished and have street furniture
Building siting responds to the site characteristics.	The buildings are positioned so extensive earthworks are not visible and they appear to sit with in the natural landform. That visual corridors are retained along roads and wherever possible from the centre, to the Pond, Ballina Wetlands and treed hilltops .
Floor space meets community needs into the future	Floor space is calculated to provide for a final local population
The vertical scale of buildings in the Neighbourhood Centre supports the vitality of the centre and is visually appealing when viewed from above from adjacent residential areas.	A variety of retail, office and residential building sizes are provided within the centre layout. 3 storey buildings are encouraged where indicated in Fugre 4 to achieve Main Street vitality. Flat roof forms are discouraged and articulated pitched roof forms are encouraged (refer Diagram 2). Taller buildings are provided at key corners to contribute to the legibility of the street and building hierarchy.
Safety and security in the centre is encouraged by using appropriate urban design	Maintaining views through trees and groundcovers from the street to the footpath. All buildings incorporate a mixture of uses including residential to ensure 24-hour activity in the area and the passive surveillance by residents. The Neighbourhood Centre is located centrally on the key movement corridors and intersections. Buildings have active frontages and provide overlooking to streets.
Building orientation maximises solar access and promotes outdoor activity.	Buildings open out onto dining and entertainment areas.
The built form does not dominate the street	Large shade trees and tall shrub plantings around the buildings area provided to give human scale to the building. Building canopies, shade tree canopies and vine-clad pergolas are provided to give protection to pedestrians.
Amenity and passive human comfort are provided to contribute to the use of outdoor spaces and reduce the use of mechanical cooling and heating.	Buildings and landscaping is designed to provide ventilation and vegetative cooling. Buildings and internal spaces are naturally ventilated most of the year to encourage minimise use of air conditioning. Dwelling units are orientated to the north and east to maximise solar access and energy efficiency. Buildings are shaded, sheltered and cooled by large shade and shelter trees, vine clad walls, green roofs, vertical green walls. Attractive planting is incorporated wherever possible within the streetscape.
Deep planting around the building is maximised.	Basements and subsurface infrastructures do not extend beyond the buildings walls. A minimum of 15% of the site is set aside for deep planting. Vehicle access is rationalised and consolidated to minimise intrusion on landscape areas.
Green areas are maximised and incorporate water sensitive urban design strategies including minimising runoff and maximising infiltration and stormwater polishing on site.	Refer Section 2.4 Stormwater Management and Onsite Stormwater Harvesting.

A minimum of 1.5 off-street car parking spaces are provided per dwelling. Visitor paring is provided in the street. Basement car parking can project up to 1 metre above the natural ground level for ventilation purposes directly below residential or commercial ground floor uses on the associated.	Refer to Diagram 3 for further details.
Servicing needs for buildings in the Neighbourhood Centre does not adversely effect the streetscape of the centre and associated residential areas.	Servicing strategies for Neighbourhood Centre buildings should considers the following issues: - Heavy Vehicle Movements - Noise - Odour - Visual Impact

FIGURE 4: BUILDING HEIGHTS PLAN

4.1 MIXED USE BUILDINGS

Mixed use buildings occur at the heart of Neighbourhood Centres and contribute directly to the vitality of their Main Streets. They contain a mixture of two or more retail, residential and commercial uses.

ISSUES

In the Pacific Pines Neighbourhood Centre mixed use buildings are located on the overlooking the Main Street, Pond and Sportfields. The dedicated retail elements of the mixed use buildings are concentrated on the Main Street with opportunities for further retail on surrounding streets of the Neighbourhood Centre. Landmark elements integrated into the structure of these buildings mark the entry to the Main Street. These buildings contribute to high quality and comfortable footpath spaces for their users and passers by.

These buildings need to be three stories in height to provide development intensity sufficient to sustain a vibrant centre that is activated at all times of day. The building height limits in this area need to allow for sufficient height for ground floor retail uses and upper level commercial uses with appropriate ceiling servicing zones. The building heights also needs to allow sufficient height for articulated roof forms to ensure there are attractive views of the development from above and to discourage large flat rooved buildings. These heights are illustrated in Figure 4.

Sketch 5. Tavern view to lakeside looking northeast-wards

Sketch 6. View from Hutley Drive at Neighbourhood Centre looking southwards, showing street trees, footpaths and slow speed lanes

Sketch 7. Tavern view to lakeside looking northeast-wards

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
Retail Uses are located and sited to: - Have main entry points that are accessible from the street; - Maximise active frontages to streets, especially the Main Street; - Be as close to the street as possible to activate the street effectively; - Have floor levels as close as possible to the level of the adjacent footpath; and - Provide adequate circulation of air between buildings. Commercial Uses are located and sited to: - Have main entry points that are accessible from the street; - Maximise active frontages to streets, especially the Main Street; - Have clearly visible addresses and frontages to activate the street effectively; and - Provide adequate circulation of air between buildings. Residential uses within mixed use buildings are sited to: - Have main entry points that are accessible from the street; - Overlook the street and footpath with living room windows and balconies; and - Provide a range of dwelling sizes	Refer to Diagram 1 for details of some of these criteria.
Private open space is of a dimension and location to: - Serve as an extension to the dwelling unit for private recreation purposes; - Be directly accessible from the main living area of the dwelling unit; - Maximise solar access, where practical; and - Be comensorate with the size of the dwelling and enable a diversity of dwelling types including retirement, affordable housing and key worker housing.	A minimum private open space area to will apply as follows: - The area is to be provided by way of ground floor private open space / balcony or above ground balcony adjoining the living area of the unit and at the same level; - Ground level units and associated private open space are ideally between 400 and 900mm above adjacent street level; - For units at ground level with GFAs of 55m^2 or less, 20m^2 of private open space with a minimum dimension of 4m is adequate; - For units at ground level with GFAs between 55m^2 and 70m^2, 30m^2 of private open space with a minimum dimension of 4m is adequate; and - For units at ground level with GFAs greater than 70m^2, 50m^2 of private open space with a minimum dimension of 4m is required. - For units above ground level with GFAs of 35m^2 or less, 6m^2 minimum balcony area is adequate; - For units above ground level with GFAs between 35m^2 and 55m^2, 10m^2 of balcony area is adequate; and - For units above ground level with GFAs greater than 55m^2, 15m^2 of balcony area is required.

Communal open space is clearly defined, useable and helps create a pleasant, safe and attractive living environment	As part of any future application, a Landscape Concept Plan is to be prepared that demonstrates compliance with the design outcomes, addressing adjacent public areas, existing and proposed vegetation, earthworks, communal facilities, surveillance, irrigation, lighting, fencing etc.
Provision is made for: - Individual mail boxes; - Adequate garbage bin areas not visible from the street; and - Adequate storage areas.	No guideline.
Dwellings provide an attractive street appearance through the following: - Building frontage and entry points are readily apparent from the street; - Lightweight and translucent elements are utilised as required, to soften building presence; - Building design detail and finish provide an appropriate scale, add visual interest, and enable differentiation between dwellings; - Buildings are sited to enhance landscape character within the streetscape; and - Garages and parking structures are sited and designed so as to not dominate the street frontage.	Refer to Figure 5 for further details. AND As part of any future application, a Streetscape Concept Plan is prepared that demonstrates how the design outcomes are met.
Front fences and walls (forward of the building line) are no greater than 1.2m high if solid. This height may be increase to 1.8m if the fence has openings which make it not less than 50% transparent.	As part of any future application, a Streetscape Concept Plan is prepared that demonstrates how the design outcomes are met.

MIXED USE SECTION

The two levels above are residential or commercial and can be built with a terrace style roof or as an open apartment balcony.
Open balconies with glass frontage to allow maximum solar access to building.
Screens and awnings to provide protection and privacy for each apartment.
Balconies extended to the boundary to create a sence of enclousure withtin Main Street.

Bottom level is reserved for retail shops and commercial suites.
Setbacks are 0-300mm to shop fronts.
Ground level to provide space for cafe's shops & office suites with widened pavement and landscape shop fronts.
Shops fronts reach the boundary
Awning extends over widened pavement to creat space for outdoor tables and chairs and pedestrian walkway.

On street parking and landscaped footpath & reservations.
On street parking surrounded by landscaped gardens and pedestrian footpaths creating a pleasant street vista.
Landscaped areas creating a pedestrian focused boulevard to encourage social interaction.

Basement parking on lower level

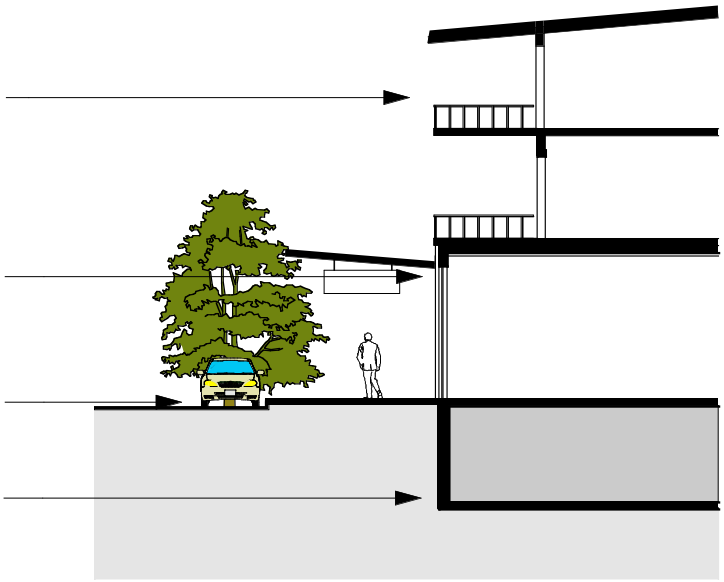


DIAGRAM 1

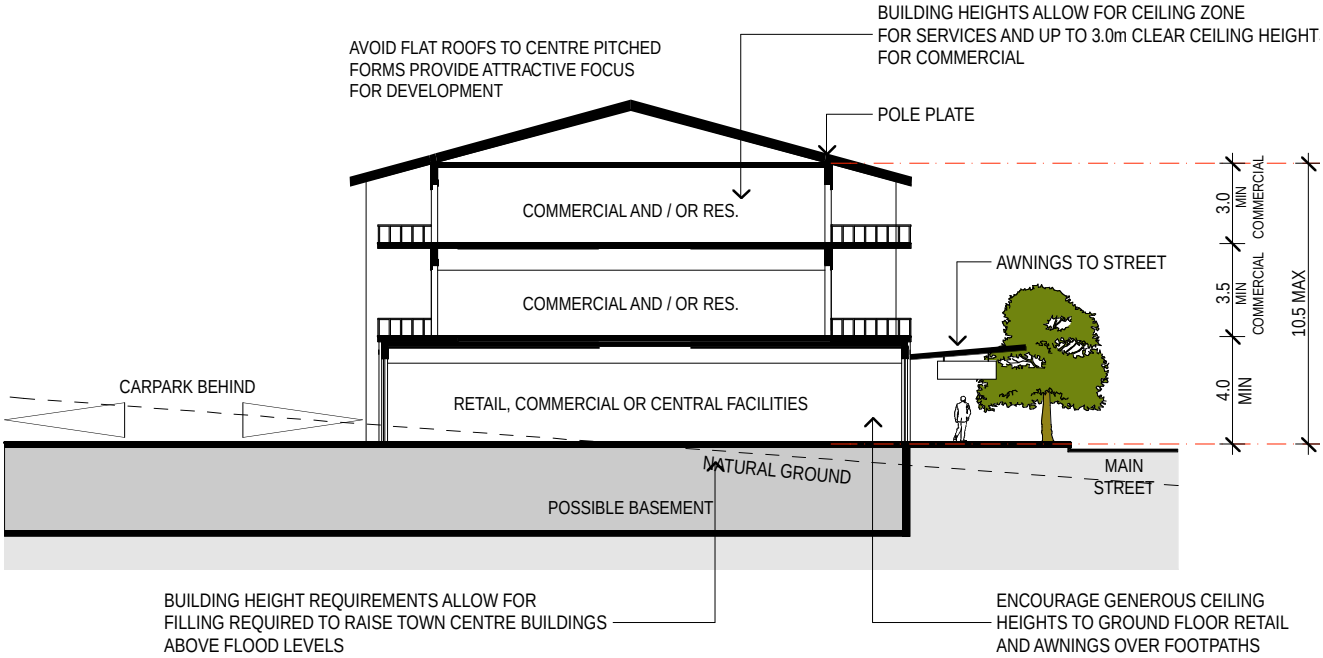
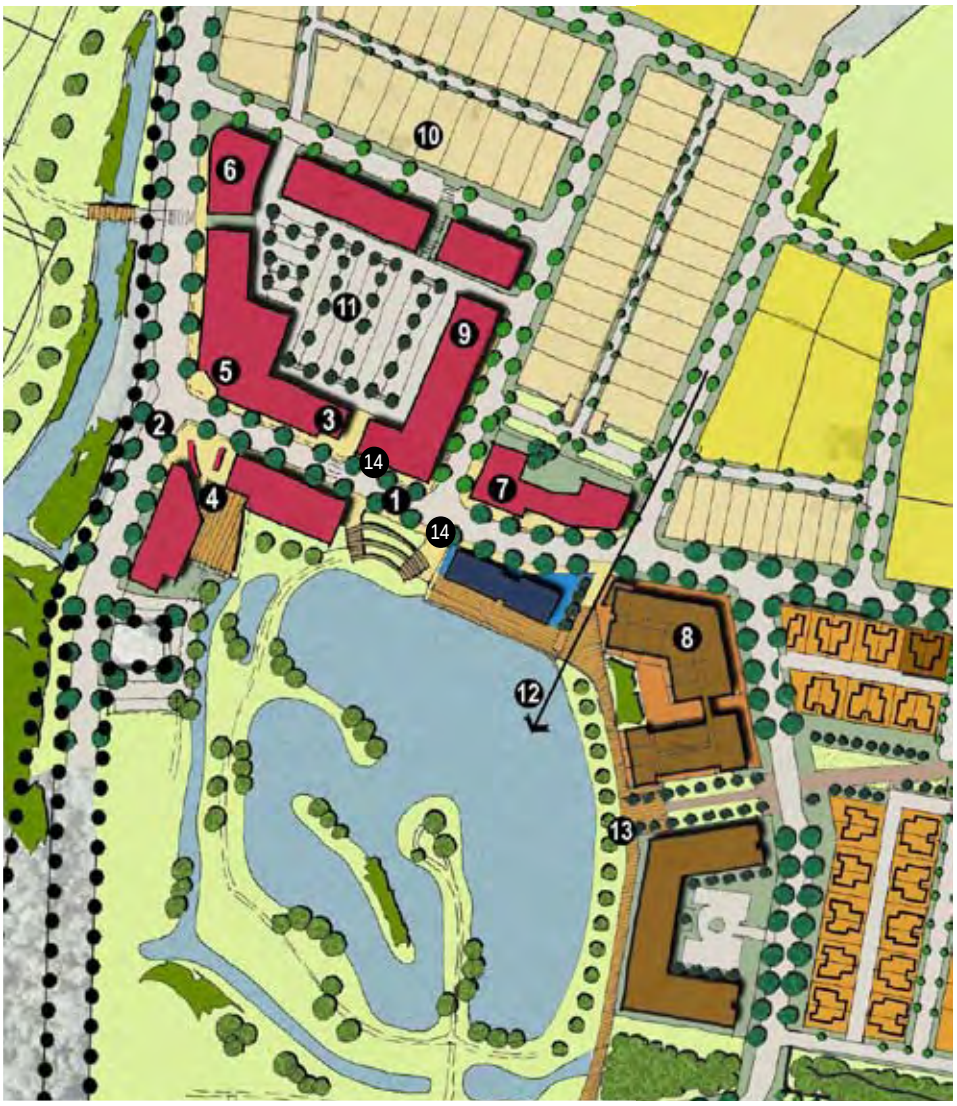


DIAGRAM 2: 3 STOREY BUILDING HEIGHTS



KEYNOTES

1. Main Street
2. Hutley Drive
3. Retail Core
4. Tavern
5. Medical centre
6. Arts business centre
7. Childcare centre
8. Assisted Living facility
9. Offices/service businesses
10. Home-based businesses
11. Rear parking
12. Streets from Northern have clear v
13. Public access around perimeter of
14. Indicative bus stop locations

FIGURE 5: INDICATIVE NEIGHBOURHOOD PLAN

1	2
3	5
4	
6	

1. Large Pond at focus of Neighbourhood, Perth
2. Main Street style retail centre with upper level commercial, Botany Auckland
3. Terracotta amphitheatre, Varsity Lakes Gold Coast
4. Water feature at focal point to residential dwellings, Subiaco Perth
5. Main Street style retail centre with upper level commercial, Botany Auckland
6. 3 Storey apartment overlooking Parklands, Subiaco Perth

4.2 NEIGHBOURHOOOD CENTRE – APPARTMENT BUILDINGS

Apartment buildings occur within easy walking distance of the Main Street and Public Open Space areas and contribute to the vitality of spaces around the Main Streets. They contain a mixture of dwelling sizes and types to encourage a range of users to utilise the Neighbourhood Centre.

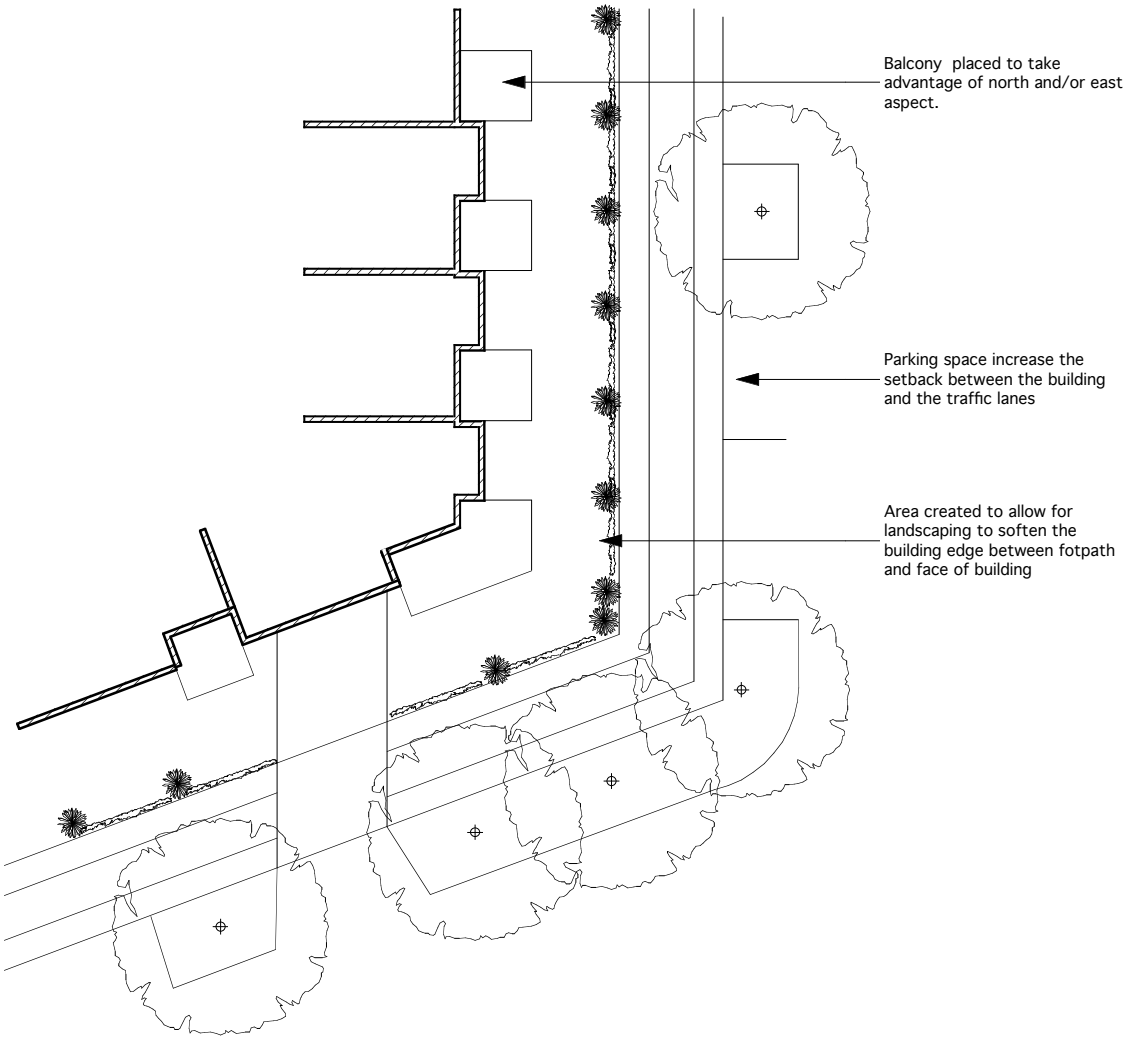
ISSUES

Apartment buildings in Pacific Pines are located within the Neighbourhood Centre and in some instances sleeve the at grade car parking areas for the retail uses. They have setbacks that offer a transition between mixed used building and lower density residential areas while offering clear surveilancce of street frontages (refer Figure 6).

These buildings need to be three stories in height to provide development intensity sufficient to sustain a vibrant centre with a range of housing choices. The building height limits in this area need to allow for sufficient height for terraces to be elevated up to 1m above the footpath to provide privacy between public footpaths and private terraces. The building heights also need to allow sufficient height for articulated roof forms to ensure there are attractive views of the development from above and to discourage large flat rooved buildings. These heights are illustrated in Diagram 4.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
Buildings are located and sited to: - Reduce the impact on neighbours and the public street; - Facilitate adequate setback from the street to provide visual and acoustic amenity; and - Provide adequate circulation of air between buildings.	Refer to Diagram 3 for further details.
Private open space is of a dimension and location to: - Serve as an extension to the dwelling unit for private recreation purposes; - Be directly accessible from the main living area of the dwelling unit; - Maximise solar access, where practical; and - Be comensorate with the size of the dwelling and enable a diversity of dwelling types including retirement, affordable housing and key worker housing.	A minimum private open space area to will apply as follows: - The area is to be provided by way of ground floor private open space / balcony or above ground balcony adjoining the living area of the unit and at the same level and - Ground level units and associated private open space are ideally between 400 and 900mm above adjacent street level. - For units at ground level with GFAs of 55m^2 or less, 20m^2 of private open space with a minimum dimension of 4m is adequate; - For units at ground level with GFAs between 55m^2 and 70m^2, 30m^2 of private open space with a minimum dimension of 4m is adequate; and - For units at ground level with GFAs greater than 70m^2, 50m^2 of private open space with a minimum dimension of 4m is required. - For units above ground level with GFAs of 35m^2 or less, 6m^2 minimum balcony area is adequate; - For units above ground level with GFAs between 35m^2 and 55m^2, 10m^2 of balcony area is adequate; and - For units above ground level with GFAs greater than 55m^2, 15m^2 of balcony area is required.

Communal open space is clearly defined, useable and helps create a pleasant, safe and attractive living environment	As part of any future application, a Landscape Concept Plan is to be prepared that demonstrates compliance with the design outcomes, addressing adjacent public areas, existing and proposed vegetation, earthworks, communal facilities, surveillance, irrigation, lighting, fencing etc.
Provision is made for: - Individual mail boxes; - Adequate garbage bin areas not visible from the street; and - Adequate storage areas.	No guideline.
Dwellings provide an attractive street appearance through the following: - Building frontage and entry points are readily apparent from the street; - Lightweight and translucent elements are utilised as required, to soften building presence; - Building design detail and finish provide an appropriate scale, add visual interest, and enable differentiation between dwellings; - Buildings are sited to enhance landscape character within the streetscape; and - Garages and parking structures are sited and designed so as to not dominate the street frontage.	Refer to Diagram 3 for further details. AND As part of any future application, a Streetscape Concept Plan is prepared that demonstrates how the design outcomes are met.
Front fences and walls (forward of the building line) are no greater than 1.2m high if solid. This height may be increase to 1.8m if the fence has openings which make it not less than 50% transparent).	As part of any future application, a Streetscape Concept Plan is prepared that demonstrates how the design outcomes are met.



MEDIUM DENSITY USE SECTION

All three levels are residential and can be built with a terrace style roof or as an open apartment balcony.
Open balconies with glass frontage to allow maximum solar access to building
Screens and awnings to provide protection and privacy for each apartment.

Setbacks are 4.5m min. to ground floor external walls and 3m min to balconies

On street parking complimented by landscaped footpaths.
on street parking surrounded by landscaped gardens and pedestrian footpaths creating a pleasant street vista.
Landscaped areas creating a pedestrian boulevard to encourage social interaction.

Ground level terraces to be between 450 and 1000mm nominally above footpath level to achieve some level of privacy while maintaining passive surveilance of street.

Basement parking on lower level

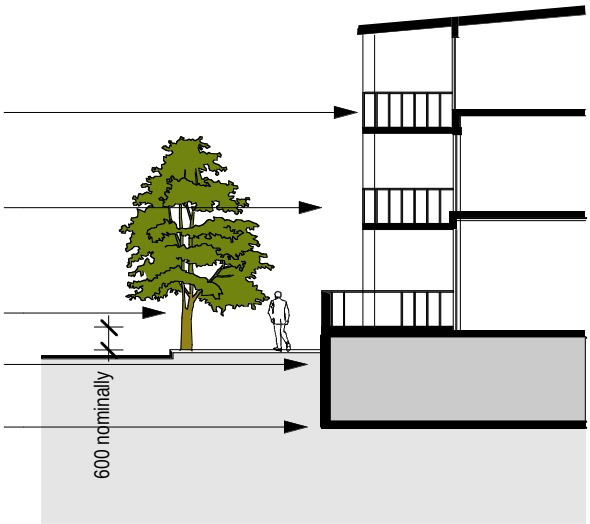


DIAGRAM 3.

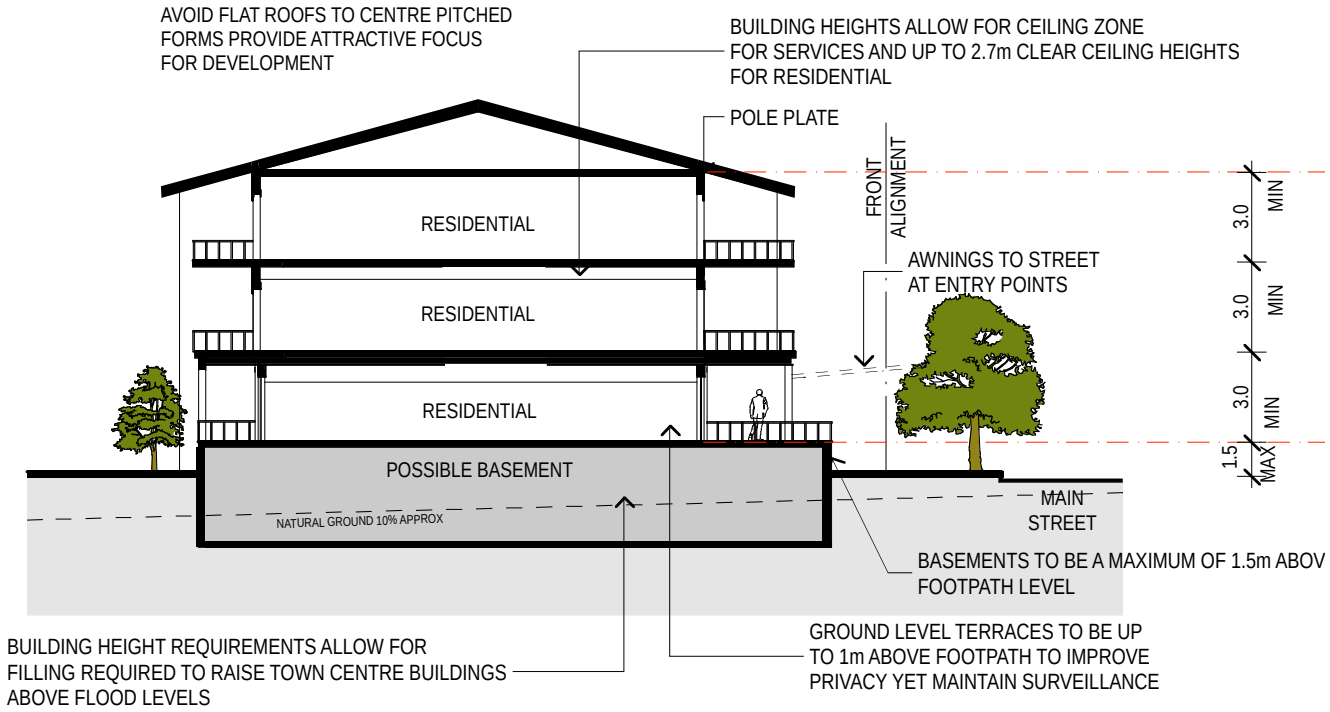

AVOID FLAT ROOFS TO CENTRE PITCHED FORMS PROVIDE ATTRACTIVE FOCUS FOR DEVELOPMENT
BUILDING HEIGHTS ALLOW FOR CEILING ZONE FOR SERVICES AND UP TO 2.7m CLEAR CEILING HEIGHTS FOR RESIDENTIAL
POLE PLATE
FRONT ALIGNMENT
RESIDENTIAL
RESIDENTIAL
RESIDENTIAL
AWNINGS TO STREET AT ENTRY POINTS
3.0 MIN
3.0 MIN
3.0 MIN
1.5 MAX
POSSIBLE BASEMENT
NATURAL GROUND 10% APPROX
MAIN STREET
BASEMENTS TO BE A MAXIMUM OF 1.5m ABOV FOOTPATH LEVEL
BUILDING HEIGHT REQUIREMENTS ALLOW FOR FILLING REQUIRED TO RAISE TOWN CENTRE BUILDINGS ABOVE FLOOD LEVELS
GROUND LEVEL TERRACES TO BE UP TO 1m ABOVE FOOTPATH TO IMPROVE PRIVACY YET MAINTAIN SURVEILLANCE

DIAGRAM 4

1	2
	4
3	
5	6

1.
2. Rear lane to 3 storey terrace housing
3. 3 storey Main Street mixed use building, Varsity Lakes Gold Coast
4. 3 Storey mixed use building on Main Street, Subiaco Perth
5. 3 storey affordable apartments, Bowen Hills Brisbane
6. 3 Storey apartment building

FIGURE 6: INDICATIVE SETBACKS PLAN

5.0 RETIREMENT BUILT FORM

Retirement housing and facilities extend the range housing types within a community to suit the aging population. They allow residents to age in place while maintaining contact with their associated community. They contribute more effectively when they within easy walking distance or are directly integrated with Neighbourhood Centres.

The built form and landscape is highly legible and contributes to the existing streetscape and the local character with active frontages and overlooking.

The design of the development does not obstruct/encroach significant view corridors, and it enhances existing vistas and views whenever possible.

A range of recreational and environmental settings, corridors and focal points are provided. Issues of security and surveillance are addressed.

Built for offers accessible permeability in addition to the surrounding streets for finer grain pedestrian movements.

As many residents as possible are within a 5min walk (or 400m) of the Neighbourhood Centre to encourage walking and reduce motor vehicle dependence.

The Neighbourhood Centre delivers a range of denser housing types.

ISSUES

The Pacific Pines Retirement Community is located adjacent to the Neighbourhood Centre and existing Pond. Denser three storey dwelling types are located closer to the Neighbourhood Centre on even graded parts of the site to encourage accessible connectivity to the Neighbourhood Centre, Community Facilities and focal areas of public open space (as shown in Figure 7).

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
Lot orientation maximises outdoor living areas, privacy and solar access to promote energy efficiency and reduce the use of nonrenewable resources and greenhouse gas-emissions	Refer Diagrams 6-9.
Lot layout enhances personal safety.	Lots front onto all streets and open space is bounded by streets on at least two sides in all cases.
A variety of lot sizes and types are provided.	
A minimum of one off-street car parking space is provided per dwelling. Visitor parking is provided in the street. Basement car parking can project up to 1 metre above the natural ground level for ventilation purposes	Refer Diagrams 6-9.

Sketch 8: Boardwalk view looking southwards along edge of pond towards Retirement Central Facilities building and Assisted Living facility

Sketch 9: View of Assisted Living facility from childcare centre

FIGURE 7: INDICATIVE RETIREMENT COMMUNITY

5.1 RETIREMENT CENTRAL FACILITES

At the core of retirement communities are central facilities and higher levels of care. They are located within walking distance of other housing in the community and in areas where they have an clear address within the broader community. They are also located close to community facilities and childcare where possible to enable them to contribute to the interaction, operation and utilisation of these facilities. The central facilities to the retirement include administrative areas, dining facilities health facilities and higher levels of care.

ISSUES

The Pacific Pines Retirement Central Facilities are 3 storey buildings located adjacent to the Neighbourhood Centre and overlooking the Pond. They include a landmark elements that terminates the end of the Main Street thus directly addressing this important space within the community. They are also located close to community facilities such as the proposed community hall and childcare centre. In this way they contribute to the use and vitality of these facilities. The central facilities to the retirement include

- Administration;
- Club and dining facilities;
- Health facilities;
- Independent Living Apartments; and
- Assisted Living Units.

They have setbacks that offer a transition bettween Neighbourhood Centre mixed used buildings and lower density residentiial areas while offering clear surveilancce of street frontages. These buildings need to be 3 stories in height to provide development intensity sufficient to sustain a vibrant and compact community with a range of dwelling choices. The building height limits in this area need to allow for sufficient height for terraces to be elevated up to 1m above the footpath to provide privacy between public footpaths and private terraces. The building heights also need to allow sufficient height for ground level central facilities, ceiling servicing zones and articulated roof forms to ensure there are attractive views of the development from above and to discourage large flat rooved buildings. These heights are illustrated in Diagram 5.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
Common areas are located and sited to: - Maximise active frontages to streets, especially the Main Street and the Pond; and - Provide adequate circulation of air between buildings. - Residential uses within central facilities are located to: - Have main entry points accessible from the street; - Overlook the pond, street and footpath with living room windows and balconies; and - Provide a range of dwelling sizes.	Refer to Diagrams 6-9 for further details.
Private open space is of a dimension and location to: - Serve as an extension to the dwelling unit for private recreation purposes; - Be directly accessible from the main living area of the dwelling unit; - Maximise solar access, where practical; and - Be comensorate with the size of the dwelling and enable a diversity of dwelling types including retirement, affordable housing and key worker housing.	A minimum private open space area to will apply as follows: - The area is to be provided by way of ground floor private open space / balcony or above ground balcony adjoining the living area of the unit and at the same level and - Ground level units and associated private open space are ideally between 400 and 900mm above adjacent street level. - For units at ground level with GFAs of 55m^2 or less, 20m^2 of private open space with a minimum dimension of 4m is adequate; - For units at ground level with GFAs between 55m^2 and 70m^2, 30m^2 of private open space with a minimum dimension of 4m is adequate; and - For units at ground level with GFAs greater than 70m^2, 50m^2 of private open space with a minimum dimension of 4m is required. - For units above ground level with GFAs of 35m^2 or less, 6m^2 minimum balcony area is adequate; - For units above ground level with GFAs between 35m^2 and 55m^2, 10m^2 of balcony area is adequate; and - For units above ground level with GFAs greater than 55m^2, 15m^2 of balcony area is required.
Communal open space is clearly defined, useable and helps create a pleasant, safe and attractive living environment	As part of any future application, a Landscape Concept Plan is to be prepared that demonstrates compliance with the design outcomes, addressing adjacent public areas, existing and proposed vegetation, earthworks, communal facilities, surveillance, irrigation, lighting, fencing etc.
Provision is made for: - Individual mail boxes; - Adequate garbage bin areas not visible from the street; and - Adequate storage areas.	No guideline.

Dwellings provide an attractive street appearance through the following: - Building frontage and entry points are readily apparent from the street; - Lightweight and translucent elements are utilised as required, to soften building presence; - Building design detail and finish provide an appropriate scale, add visual interest, and enable differentiation between dwellings; - Buildings are sited to enhance landscape character within the streetscape; and - Garages and parking structures are sited and designed so as to not dominate the street frontage.	Refer to Diagram 3 for further details. AND As part of any future application, a Streetscape Concept Plan is prepared that demonstrates how the design outcomes are met.
Front fences and walls (forward of the building line) are no greater than 1.2m high if solid. This height may be increase to 1.8m if the fence has openings which make it not less than 50% transparent)	As part of any future application, a Streetscape Concept Plan is prepared that demonstrates how the design outcomes are met.

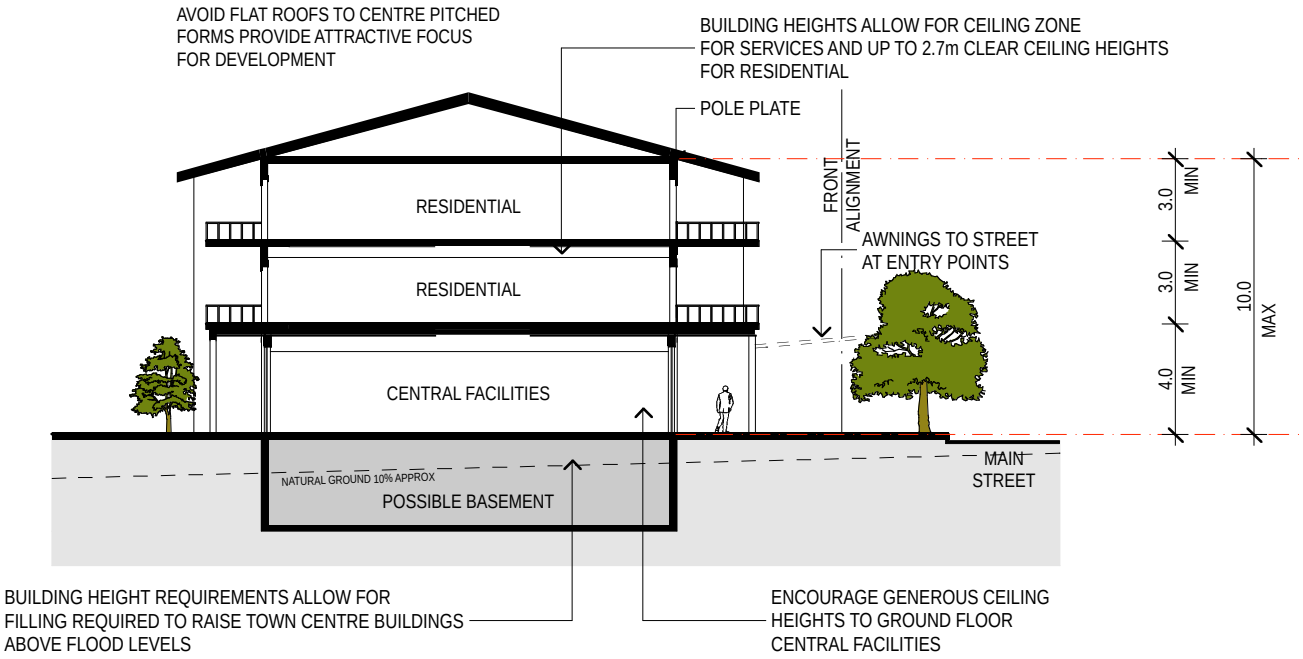


DIAGRAM 5. RETIREMENT CENTRAL FACILITIES

1

2 3

1. Independent living units
2. Independent living units
3. Independent living units

5.2 RETIREMENT RESIDENTIAL LOTS

Retirement residential lots provide detached and attached housing typologies that suit the needs of an aging population. They are compact communities located within easy walking distance of communal facilities and Neighbourhood Centres where possible. A range of housing typologies is provided to suit different user requirements and household sizes. They address external streets of a development and encourage interaction with the broader community.

ISSUES

In Pacific Pines the Retirement lots are single and double story dwellings located on level parts of the site in close proximity to the Neighbourhood Centre. Communal open space areas within these areas accessible to the broader community to encourage interaction and provide finer grain pedestrian connectivity to the Neighbourhood Centre. Retirement residential lots include:

Detatched Lots;
CarCourt Lots; and
Duplex Lots.

They are at a transitional density with transitional street setbacks between the Neighbourhood Centre and adjoining private residential areas.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
Lot orientation maximises outdoor living areas, privacy and solar access to promote energy efficiency and reduce the use of non-renewable resources and greenhouse gas-emissions	Refer to Diagrams 6-8
Lot layout enhances personal safety, security and interaction between residents.	Lots have entries and frontages to streets and/or open space. Refer Diagrams 6-8
Visual Impacts of motor vehicles are reduced on streetscape.	Single car garages are encouraged where possible A variety of alternative access arrangements are provided to garages including rear lanes and car courts that are not directly visible from streets.
Development provides unbuilt courtyard, garden and vegetated areas suitable for providing adequate solar access, retaining existing vegetation, providing useable and well-located outdoor living environments.	Development follows the Lot diagrams provided that they demonstrate preferred site planning outcomes for each site type.
Built form is complementary to the landscape context and the site's scenic values.	Average side setbacks are in accordance with Diagrams 6-8.
Side and rear boundary setbacks have average and a minimum dimension to encourage: - The introduction of small courtyards along boundaries for private outlook from internal spaces, (instead facing directly towards neighbours) - Screened service areas - Additional vegetation between buildings retaining the vegetated setting of the site and - To provide articulation and visual relief to built form.	Courtyard spaces are provided in accordance with Diagrams 6-9 allowing a north facing wall of a living area to face onto the courtyard. The use of pergolas shaded terraces and verandas as a transition between indoor and outdoor areas is encouraged.
Duplex Lots provide higher density attached housing at a transitional scale to larger central facilities buildings and adjoining detached residential uses.	Refer to Diagrams 6-8.
Car Court Lots provide detached housing that can deliver frontage to streets and open space areas where direct vehicle access is not available.	Refer to Diagrams 6-8.
Detached Lots provide detached retirement housing to streets with one or more frontages.	Refer to Diagrams 6-8.

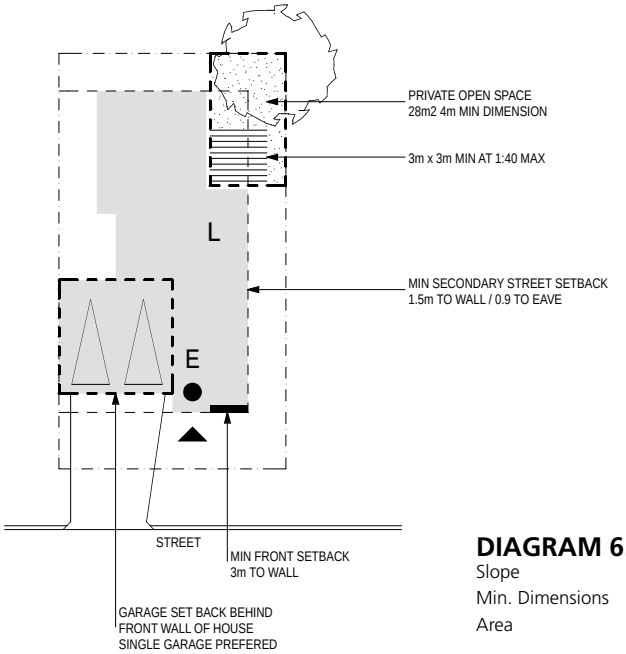


DIAGRAM 6. RETIREMENT DETACHED

Slope	1:10 Max
Min. Dimensions	12m x 22m
Area	264m^2

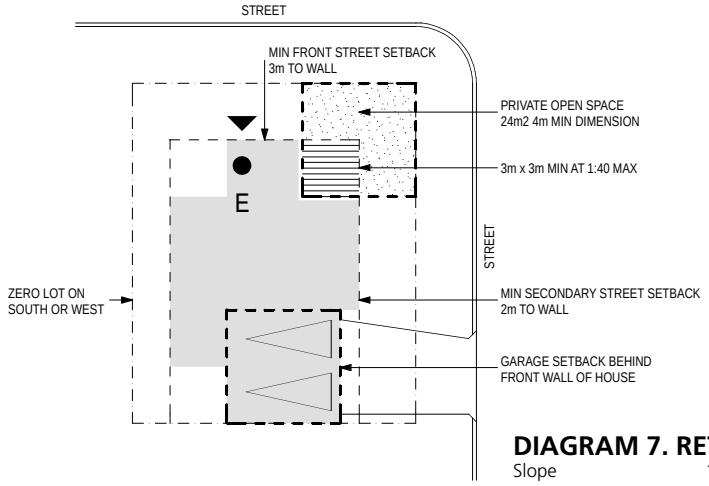


DIAGRAM 7. RETIREMENT DETACHED (CORNER)

Slope	1:10 Max
Min. Dimensions	15m x 18m
Area	270m^2

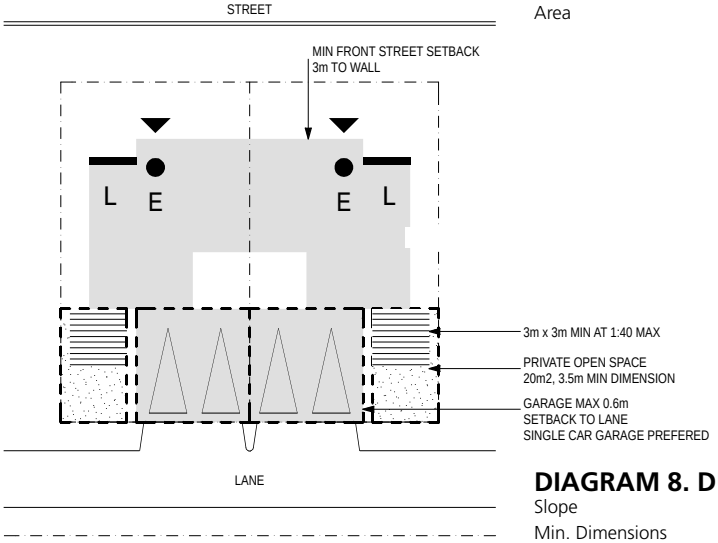


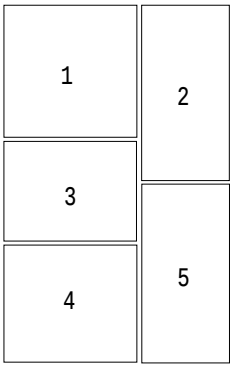
DIAGRAM 8. DUPLEX RETIREMENT

Slope	
Min. Dimensions	10m x 18m
Area	180m^2

NOTE: DIAGRAM 9 NOT REFERENCED

1	2	
3	4	5

1. Detached independent living houses, Redland Bay
2. Detached independent living houses, Redland Bay
3. Small independent living units, Redland Bay
4. Small independent living units, Redland Bay
5. Small independent living units,
6. Redland Bay



1. Battered privacy screening to balcony, Lennox Head
2. Propped eaves to front terrace balconies, Bowen Hills Brisbane
3. Vertical and Horizontal articulation of materials, Sunshine Coast
4. Window Screening, Red Hill Brisbane
5. Battered privacy screening to balcony, Brisbane

6.0 RESIDENTIAL BUILT FORM

Residential housing makes up the largest land component of low-density residential communities. A number of different housing types are provided to suit different household types and sizes and support live/work opportunities closer to Neighbourhood Centres.

Housing types respond to the context and character of the local area.

Appropriate levels of solar access for new housing and safeguarding solar access to adjoining housing contributes to quality living environments. Climatic issues such as prevailing winds and summer breezes and minimising diurnal and seasonal temperature variations are adressed.

Site coverage of buildings and hard surfaces is restricted and permeable surfaces are maximised; maintaining a balance between the built/unbuilt areas.

ISSUES

A number of residential typologies are proposed within the Pacific Pines community. The denser three story types are located adjacent to the Neighbourhood Centre and provide opportunities for Live/Work arrangements. Away from the Neighbourhood Centre dwellings are single or double story at a range of densities. Rear Lane and affordable types are located around the Neighbourhood Centre and on more shallow gradients to ensure building costs can deliver affordable outcomes. The largest detached housing allotments occur on steep land areas to allow sufficient space for significant landscaping between dwellings. Dwellings on steep land may require height relaxations to encourage light weight construction and avoid slab on groun solutions (see Figure 6). Residential Lot types proposed in Pacific Pines are as follows:

- Large lots;
- Traditional Lots;
- Duplex Lots;
- Small Affordable Housing;
- Rear Lane Lots & Live Work Lots; and
- Park Court Lots.

Street setbacks need to respond to street width, proximity to Neighbourhood Centre and lot size. Building are encouraged to be setback from rear boundaries on steeper land to encourage significant planting at the rear of lots.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
Lot orientation maximises outdoor living areas, privacy and solar access to promote energy efficiency and reduce the use of non-renewable resources and greenhouse gas-emissions	Refer Diagrams 10-18.
A variety of lot sizes and types are provided.	A variety of residential lot sizes are provided within the subdivision layout suppling low-to-medium development densities. 10% of lots are 450m^2.
Houses are designed to respond to the climate and to minimise energy use	Houses maximise cross ventilation particularly from the northern summer breezes Houses are sheltered from cold and dry westerlies by garden plantings. Living areas are orientated towards the north where possible. Natural light is maximised
Houses are designed to take advantage of location	Windows take advantage of views and best outlook.

Environmental values of the site are preserved by the lot layout.	Lot boundaries are located near existing vegetation where possible to retain the vegetation. Smaller lots are incorporated away from existing vegetation. Areas of natural vegetation are preserved and adjacent development will have minimum impact on adjacent vegetation.
Covering of building and hard surfaces is minimised.	Site coverage by buildings is no more than 50% to discourage the construction of large footprint single storey buildings. Site coverage by buildings and non-permeable surfaces such as other structures, swimming pools, non-permeable drives and paving is no more than 65%.
Development provides unbuilt courtyard, garden and vegetated areas suitable for providing adequate solar access, retaining existing vegetation, providing useable and well-located outdoor living environments.	Development follows the Lot diagrams provided that they demonstrate preferred site planning outcomes for each site type.
Built form is complementary to the landscape context and the site's scenic values.	Average side setbacks are in accordance with on the Lot Type diagrams 10-18.
Side and rear boundary setbacks have average and a minimum dimension to encourage: - The introduction of small courtyards along boundaries for private outlook from internal spaces, (instead facing directly towards neighbours); - Screened service areas; - Additional vegetation between buildings retaining the vegetated setting of the site ; and - To articulation and visual relief to built form.	Roofs (not walls or gables) can protrude through the 8m height restriction on sites with slopes greater than 1:6 to encourage articulation of the roof top elements. Courtyard spaces are provided in accordance with the Lot Type diagrams allowing a north-facing wall of a living area to face onto the courtyard. The use of pergolas shaded terraces and verandas as a transition between indoor and outdoor areas is encouraged.
Dwelling design creates attractive streetscapes, ensuring casual surveillance is maximised to encourage actual and perceived safety within community.	Refer Lot Type diagrams 10-18. Street facing facades have active frontages with dwelling entrances directly accessible and visible as 'landmark' design elements on front facades. Blank walls along street frontages are discouraged.
Car accommodation is sited and designed to not dominate the streetscape / frontage and is located to minimise impacts on neighbouring housing.	Refer Lot Type diagrams 10-18.
Lot layout enhances personal safety and security.	Lots are open to the street with living areas facing front gardens. To ensure passive surveillance of street and discourage intruders to private property.

6.1 REAR LANE LOTS

Rear lane lots are located immediately adjacent to the Neighbourhood Centre. They ensure the servicing requirements of denser residential densities do not dominate the streetscape by concentrating them at the rear of the allotments accessed from lanes. This frees up the street frontages for dwelling entry points, overlooking from living areas and visitor parking. These types are also well suited to Live/Work residences especially where they are located adjacent to Neighbourhood Centre buildings. They have setbacks that offer a transition bettween Neighbourhood Centre mixed used buildings and lower density residentiial areas. Reduced setbacks also provide clearly visible entry points to work/live uses and clear surveilance of street frontages.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
Houses face onto the street and contribute to the vitality of the street.	Living areas and gardens are located to address the street. Visitor parking is provided in the street. Mail collection occurs in the street Work/Live uses have entry points and visitor parking on the street.
Servicing requirements do not dominate streetscape.	Service requirements are provided in shared or public access lanes at the rear of dwellings. Private car accommodation is accessed from the rear lane. Refuse collection is provided in the rear lane.
Rear lanes have a high amenity environment	Trees are located along the lane to provide shade and minimise heat absorption and radiation.
Rear Lanes are safe and have good passive surveillance.	Bends in lanes and dead end lanes are discouraged to ensure clear sightlines from one end of the lane to the other. Significant stepping in back fences and garages is discouraged in rear lanes to prevent the creation of areas of entrapment. Two storey elements, such as studios above garages are encouraged at the end of lanes to provide overlooking of the lane.

Sketch 10: Typical streetscape on sloping land, with houses steeping lightly down slope

6.2 DUPLEX HOUSING LOTS

Duplex housing lots are provided predominantly near the Neighbourhood Centres where they overlook parks and sportsfields. They provide denser housing types that are at the scale of larger detached houses. They are often located on sites with more than one street frontage to ensure that garages do not dominate the streetscape.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
Duplex dwellings are at a scale that is compatible with adjoining detached residential development.	Living areas and windows of the houses are positioned to overlook the parklands
Car accommodation requirements for duplexes to not dominate the street.	Duplex allotments are encouraged to have more than one street frontage.

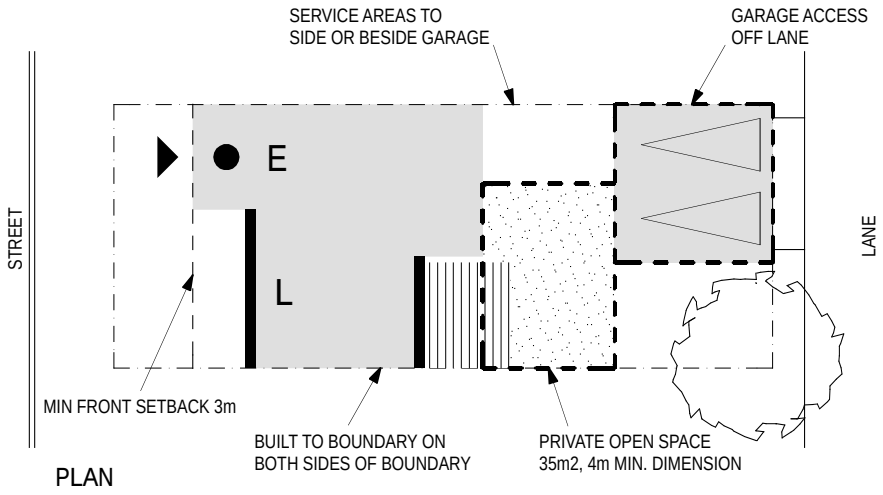
6.3 DETATCHED HOUSING LOTS

Detached housing is the predominate land use in the Pacifica Pines community. It includes a variety of typologies that respond to issues of affordability, slope and parkland interface. Detached housing lot types include the following.

- Park court lots are 400 to 600m^2 located adjacent to park land areas.
- Small affordable housing lots are 450 to 600m^2 in size. They are located immediately adjacent to the Neighbourhood Centre
- Traditional lots vary in size from 600m^2 to 1200m^2. These lots are located on the southern, eastern and northern slopes of the site.
- Large lot housing includes lots of over 1200m^2 in area. These lots are located on the upper slopes of the eastern section of the development and form a backdrop to areas below.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
Impact of driveways and garages are minimised	Avoid long driveways and associated cut and fill on steep lots.
Lots are within prominent slopes enhance existing scenic values by maintaining the visual character of a site. A treed backdrop to community is provided	Larger lots incorporate 5m deep vegetation zones with minimum frontage of 22m and depth of 35m to allow significant vegetation between dwellings. Trees are planted to the rear of the blocks on perimeter of site to provide treed backdrop to the development
On steep land consideration is given to the visual appearance of exposed undersides of buildings.	

Sketch 11: View looking towards rear lane and studio apartments over garages



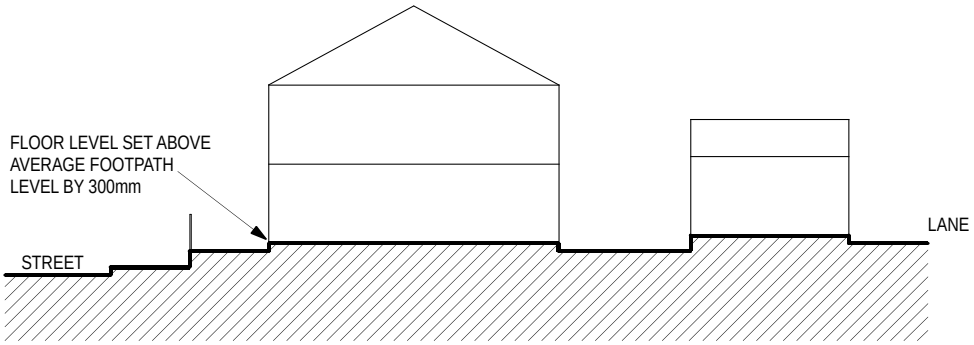


DIAGRAM 10. REAR LANE LOTS (TERRACE HOUSE)

Slope	1:100-1:10
Min. Dimensions	7m x 25m & 10m x 25m
Area	175m² x 250m²

1

1. Town houses at Angles Beach

1	2
3	
4	5
6	7

1. Rear lane, Subiaco Perth
2. Terrace house, Subiaco Perth
3. Traditional Terrace housing, Subiaco Perth
4. Large terrace houses, Subiaco Perth
5. Terrace houses, Sydney
6. Rear lane, Emerald lakes Gold Coast
7. Subiaco Perth

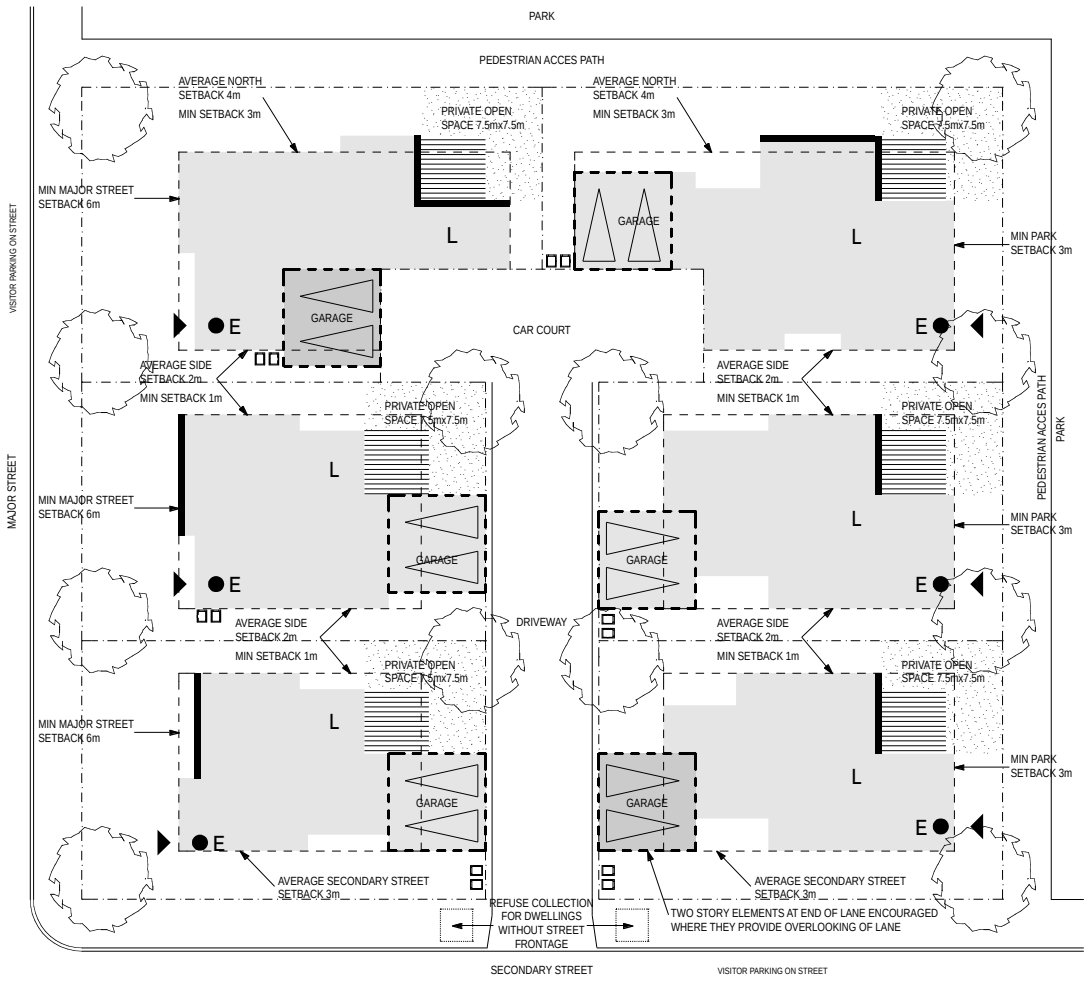
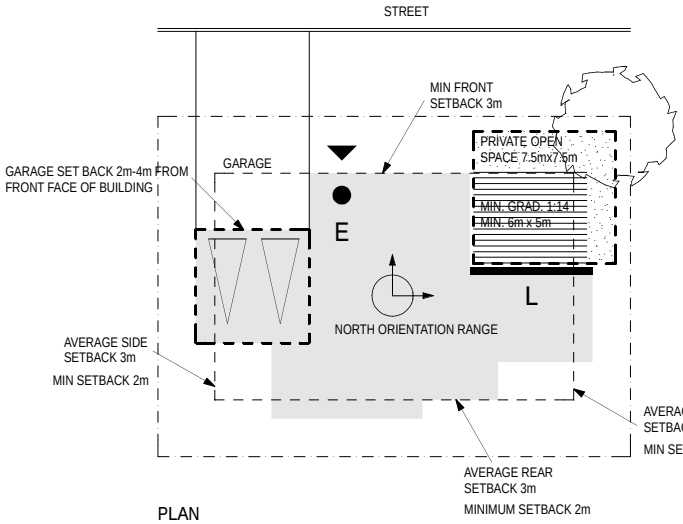


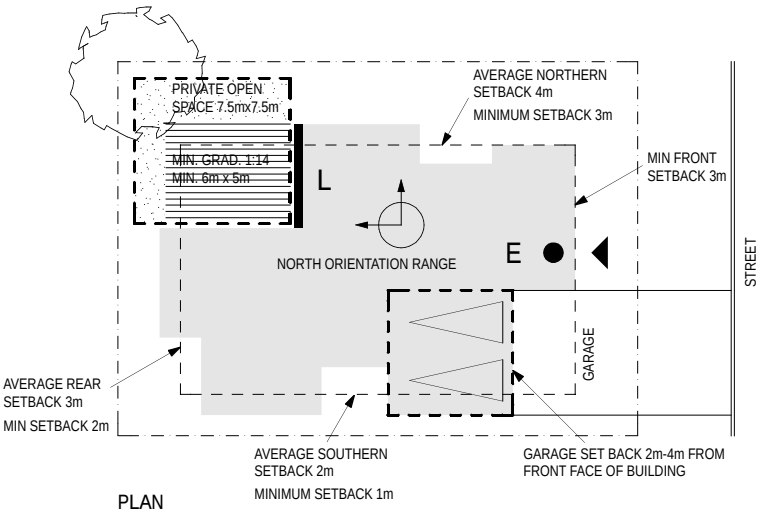
DIAGRAM 11.
Slope
Min. Dimensions
Area



PLAN

DIAGRAM 12. SMALL AFFORDABLE

Slope	1:6-1:10
Min. Dimensions	18m x 25m
Area	420m² x 600m²



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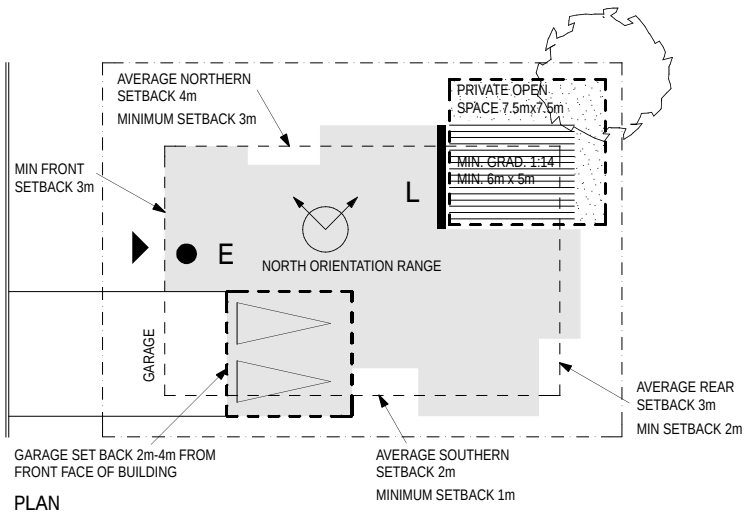

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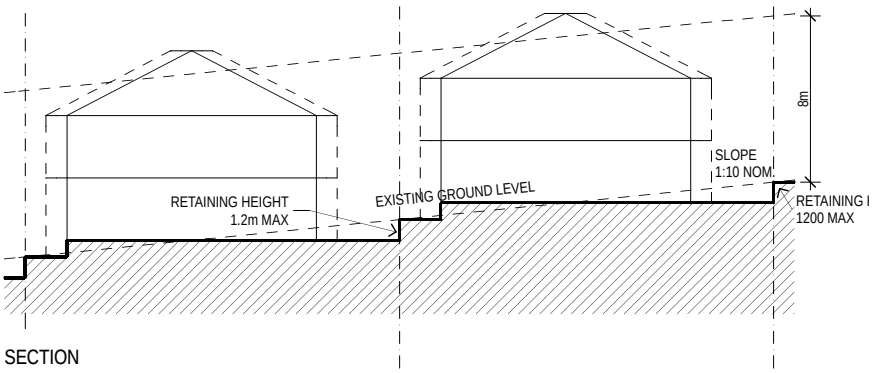


SECTION

DIAGRAM 13. SMALL AFFORDABLE

Slope	1:6-1:10
Min. Dimensions	18m x 25m
Area	450m² x 600m²

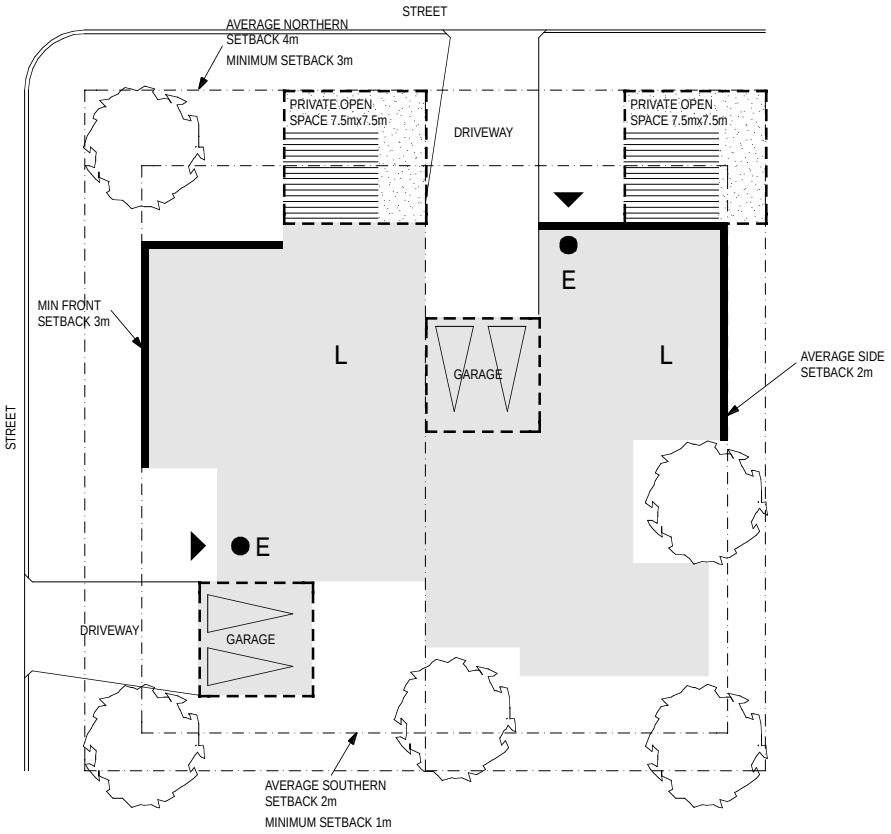


DIAGRAM 14. SMALL AFFORDABLE

Slope	1:6max
Min. Dimensions	18m wide min
Area	800m²

1

2

1. Small affordable dwelling with single car garage
2. Small affordable houses overlooking park

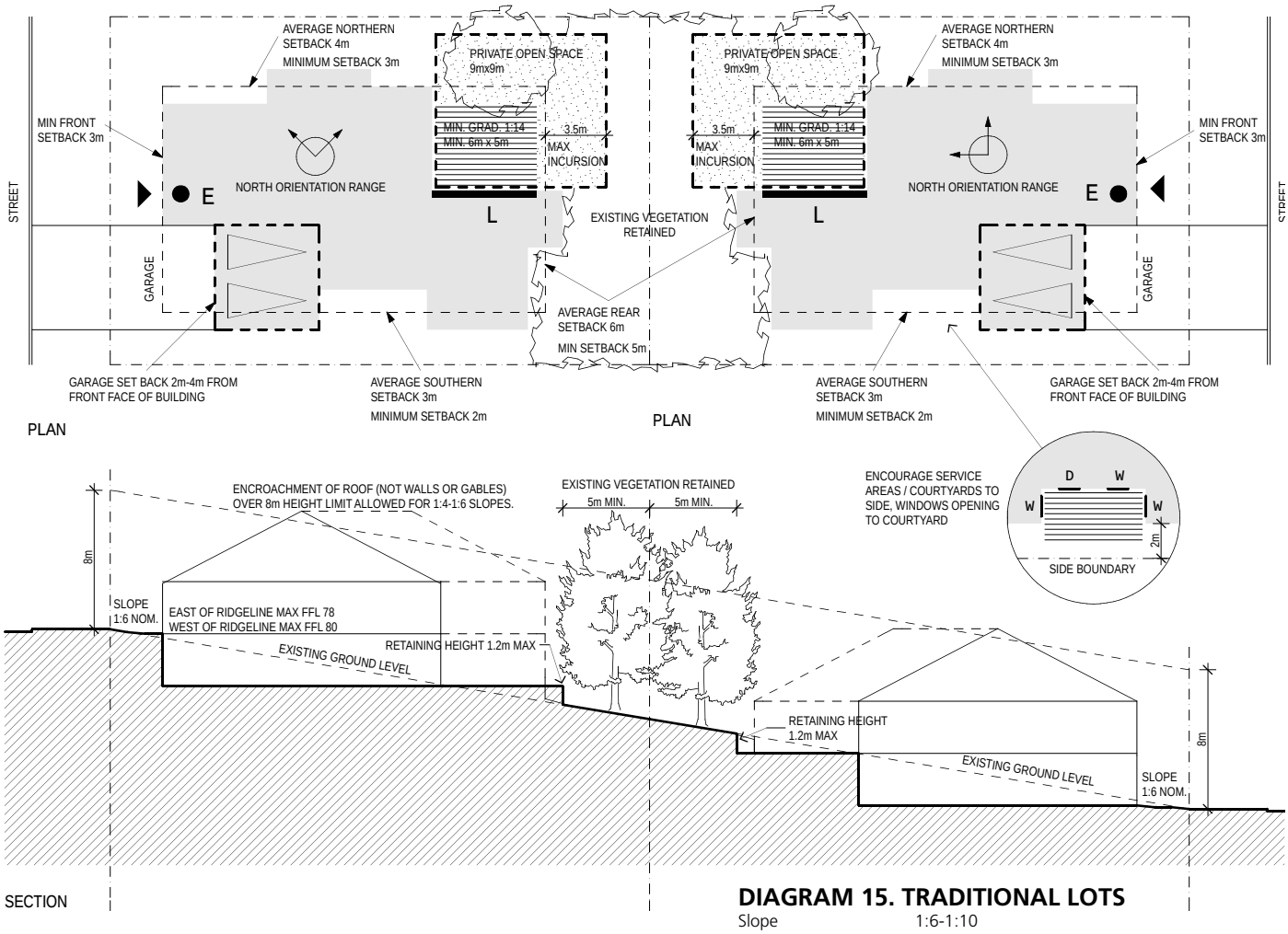
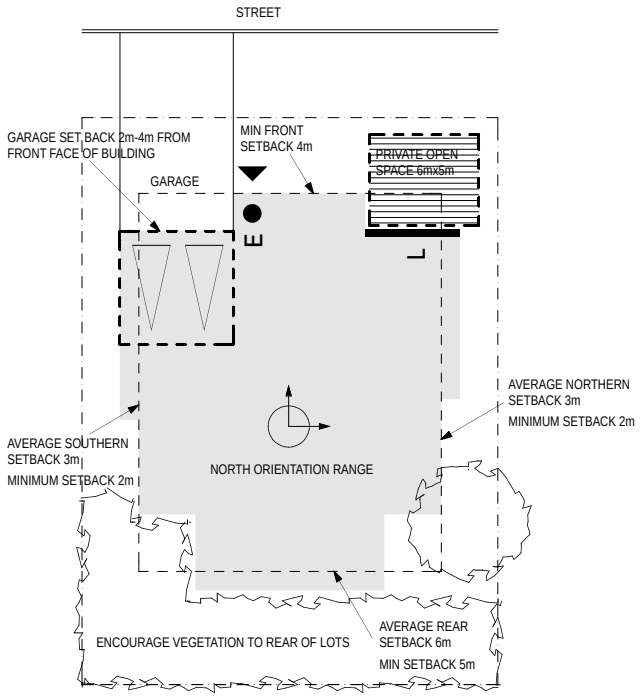


DIAGRAM 15. TRADITIONAL LOTS

Slope	1:6-1:10
Min. Dimensions	20m x 31m
Area	600m2 x 800m2

1

1. Wide lot with value spaces addressing street, Lennox heads



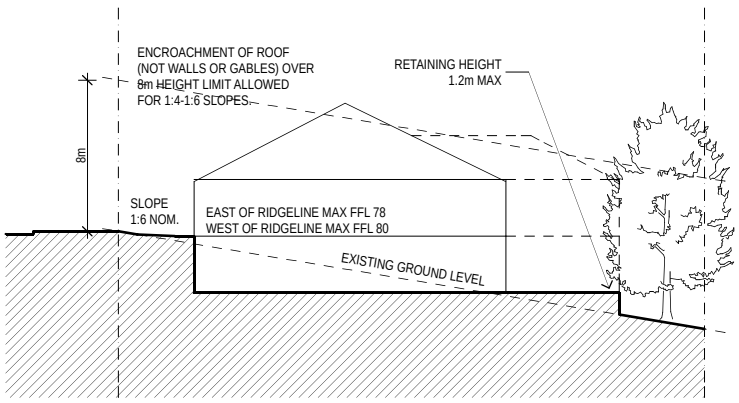
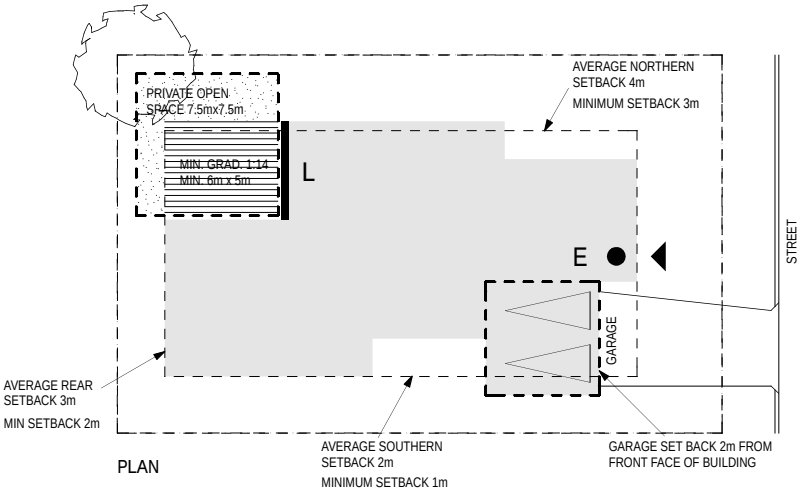


DIAGRAM 16. SMALL AFFORDABLE

Slope	1:6-1:10
Min. Dimensions	22m x 30m
Area	600m² x 800m²

1	2

1. Dwelling with deep rear setbacks to allow for significant vegetation
2. Dwelling with street frontage to parkland provide overlooking to park for generous front balconies



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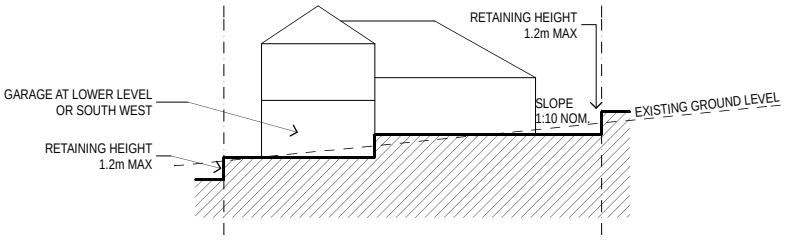
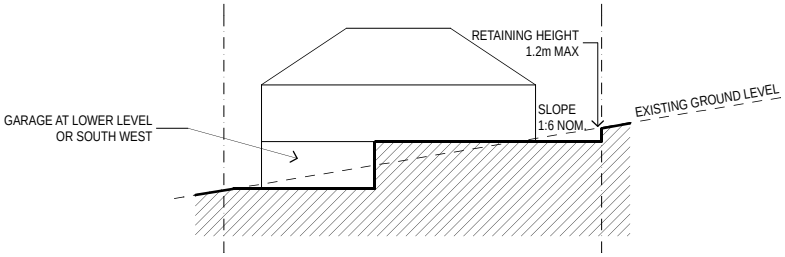


1:10 STREET ELEVATION



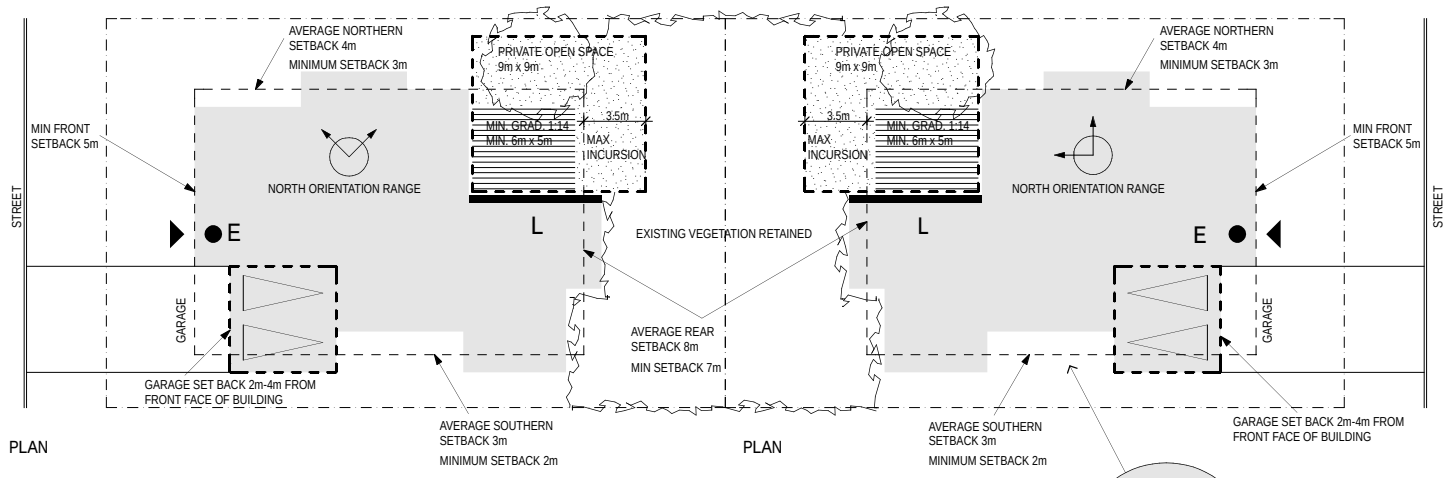
1:6 STREET ELEVATION

DIAGRAM 17. TRADITIONAL LOTS SLOPING STREETS

Slope	1:6-1:10
Min. Dimensions	18m x 25m
Area	600m2 x 800m2

1	2

1. Dwelling on steep sloping streets with partial under roof garage to reduce retaining impacts to street
2. Dwelling on sloping street has split level massing to reduce retaining impacts to street



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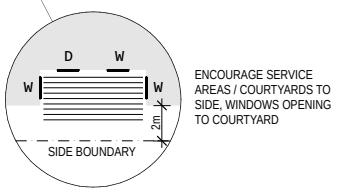
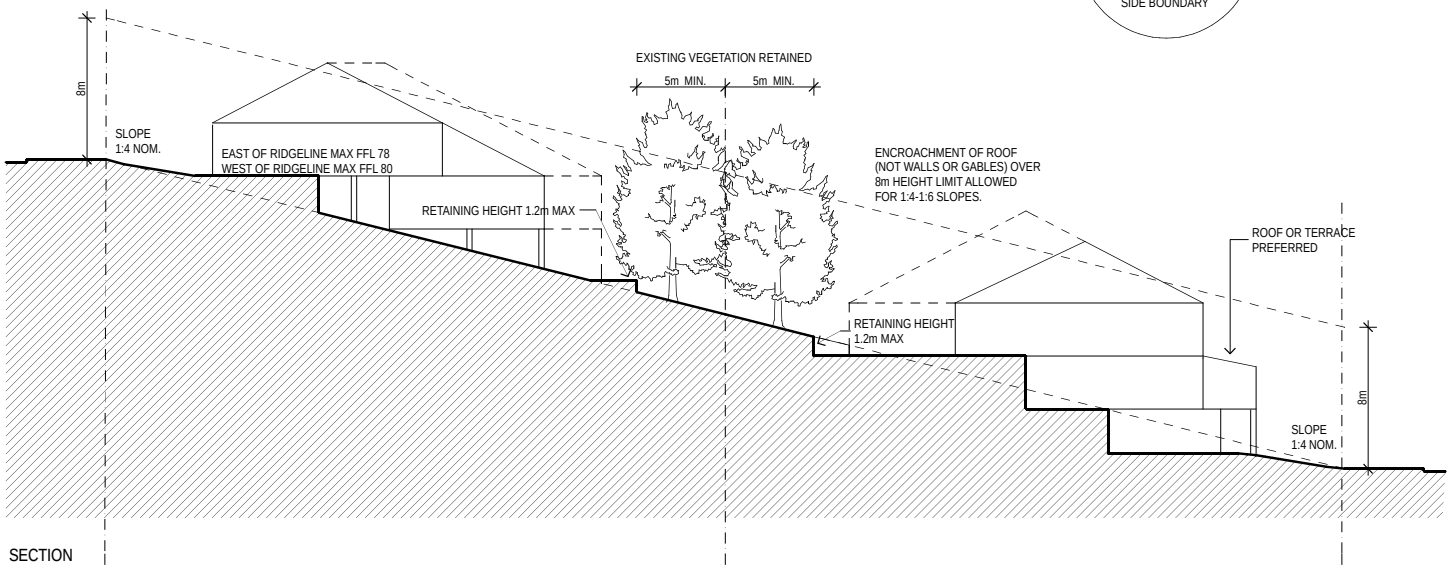
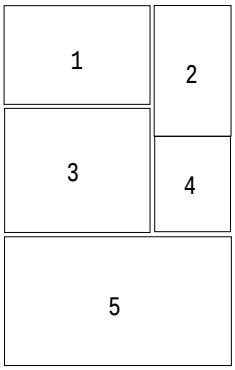




SECTION

DIAGRAM 18. LARGE LOTS

Slope	1:4-1:6
Min. Dimensions	22m x 35m
Area	>1200m^2



1. House set back within vegetation on large lot
2. Small foot print house set within vegetation on a large lot
3. Existing house on steep land, Lennox Heads
4. Character house set within vegetation
5. Large lot with elevated light weight construction