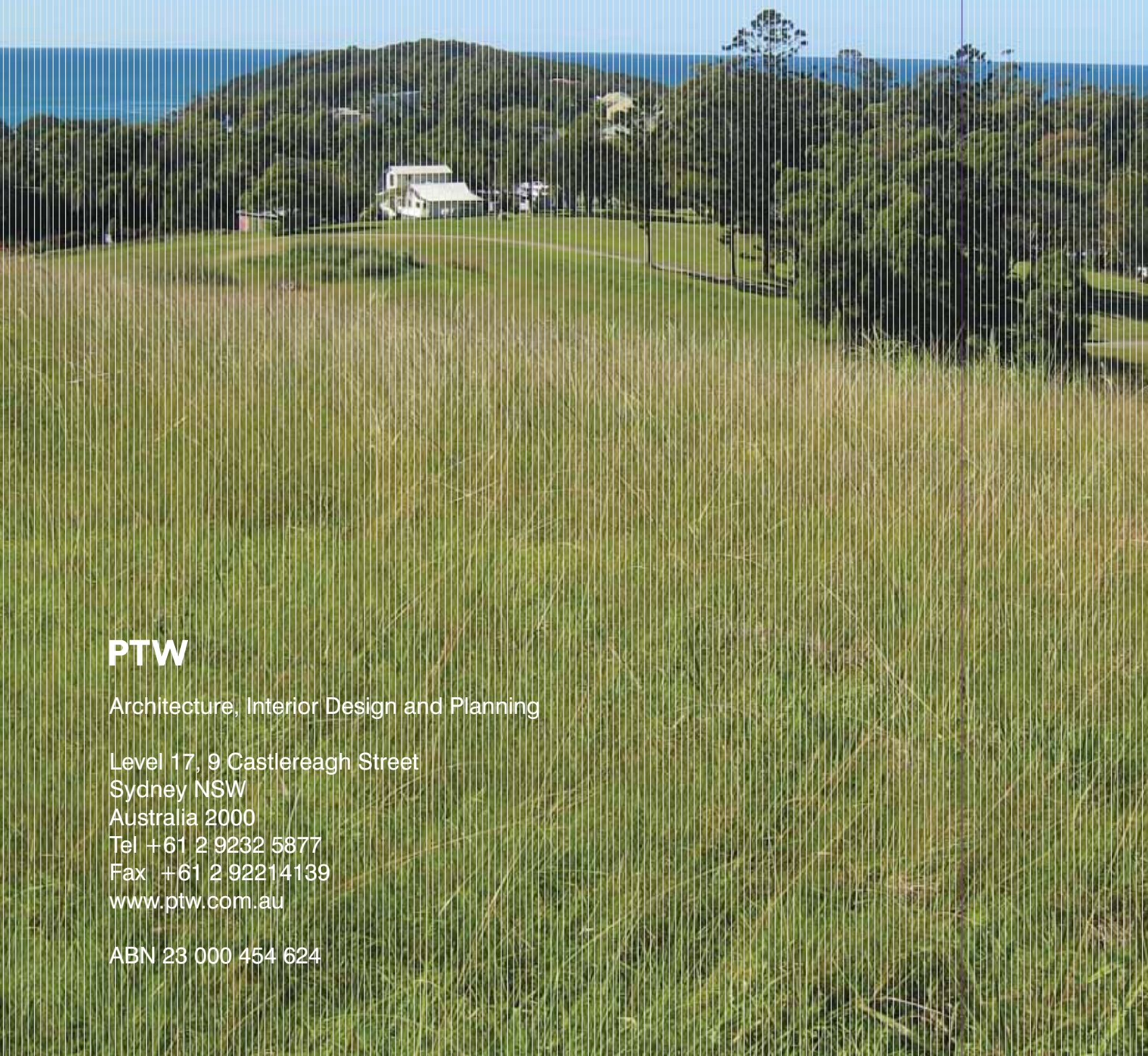
Pacific Bay Western Lands

DESIGN GUIDELINES

Prepared for Pacific Bay Developments Pty Ltd.
March 2010

- Guide to superior sustainable homes,
- adding value to your property and community



PTW

Architecture, Interior Design and Planning

Level 17, 9 Castlereagh Street
Sydney NSW
Australia 2000
Tel +61 2 9232 5877
Fax +61 2 92214139
www.ptw.com.au

ABN 23 000 454 624

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Introduction

Purpose and reason for this document

This document contains urban, landscape and architectural design guidelines for the Pacific Bay Western Lands development in Coffs Harbour. The guidelines address crucial issues relating to the streetscape, individual lots and their accompanying houses. Thakral acknowledges the importance of well designed buildings and sustainable homes in their developments and actively encourages superior design of homes in this new community. These guidelines have been produced to assist development teams working with builders and councils in achieving well planned houses and gardens which respond to their site, orientation and climate. In addition to the design guidelines described in this document, all developments must follow state or council controls, including BASIX certification, to produce quality housing.

Please Note: These guidelines equally apply to the detached houses (DH) and to the town houses (TH) around the former Wallabies Training Field. Guidelines that do not apply to all dwellings will be noted.

Document Structure

The guidelines have been developed around key principles. Each principle is explained by first outlining the important concepts and followed by guidelines identifying the required design outcomes.

Who this document is for and how it should be used

This document has been written for the new proprietors of the Pacific Bay Western Lands community, development staff, consultants and related groups of people within both the public and private sectors, including council planners and builders. It provides principles and guidelines for good practice housing design but is not a code. Development staff and their consultants will have to take into account Coffs Harbour local council requirements. These guidelines may assist development staff and designers in justifying departures from standards where appropriate.

Overall Architectural Character

Pacific Bay is located on the outskirts of Coffs Harbour, a beautiful naturally sloping site with an extensive remnant rainforest, set amongst picturesque hills containing plantations, Crown parkland and residential areas. The master plan links the development to the existing resort and greater surrounds. An organic branching road structure defines distinct neighbourhood zones and ss corresponds to the natural fall of the land.

The residential zoned area has been divided into four precincts, each with a destinctive character of it's own (Fig. 1.1). There is a mix of 1 to 2 storey detached houses in the Hillside and Jordan's Creek Precinct and 1 to 3 storey detached houses (Upper Hillside) and townhouses (The Oval). The three types of townhouses are north to the playing field with underground car parking (Type A) and to the east and the west of the playing field with gargage courts (Type B) or integrated garages (Type C) (See Fig. 1.2 and Section 11). A range of permeable open plan designs with wide corridors and balconies would take advantage of the vistas and lush vegetation. The use of natural materials such as local timbers, stone and rendered masonry will ensure the dwellings are ecologically sustainable. Skillion roofs with wide overhangs will be encouraged to take advantage of solar access and cross ventilation opportunities. It is intended to create value through the design of superior sustainable homes with a modern character. Therefore such styles know as 'Mediterranean', 'Tuscan', 'Federation' and 'Spanish Mission' for example, are to be discouraged.

Investment Protection

Residents of Pacific Bay Western Lands (PBWL) will appreciate the protection given by the Architectural Guidelines that form part of their contract. Pacific Bay Developments Pty Ltd. will administer these guidelines through an Architectural Review Committee (ARC) and answer any queries residents may have. The guidelines govern the overall design of residences and their relationship to the surrounding environment, the impact on neighbours and how neighbours relate to each other. The guidelines consider your home as part of the streetscape. They take into account the design, its style, compatibility, textural harmony and privacy. Most importantly, they work to maintain and protect the integrity of your investment in PBWL, as well as maintaining environmental responsibility and supportive energy awareness.

They encourage and delineate:

- Variety in designs, colours, styles and materials;
- Innovation housing design;
- Early establishment of landscaping and buildings.

Fig. 1.1 - 4 Precincts

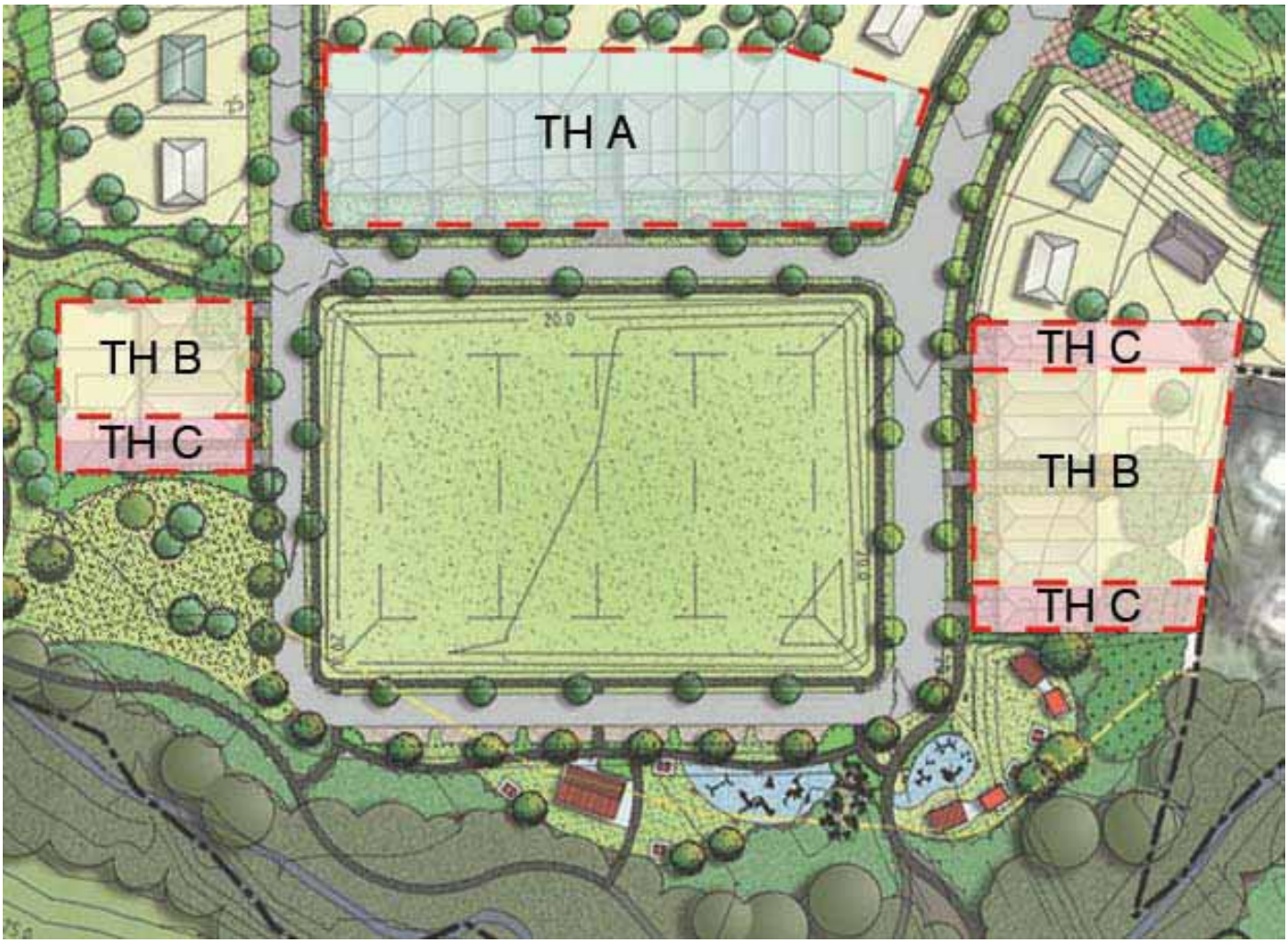

Fig. 1.2 - Townhouse Types A, B and C (compare section 11)
Type A: with underground parking
Type B: with garage court
Type C: with integrated garage

Building for the future

I. Ecologically Sustainable Development (ESD)

'Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs '

(source: Brundtland Report: Our Common Future)

Thakral strongly supports the holistic approach when it comes to creating new and better homes and communities and securing the future for the following generations. Therefore Thakral has adopted the principles of ESD throughout their projects.

For further information please refer also to the following website: http://www.environment.gov.au/esd/.

II. BASIX

BASIX, the Building Sustainability Index, ensures homes are designed to use less potable water and be responsible for fewer greenhouse gas emissions by setting energy and water reduction targets for houses and units.

BASIX is an online tool to assess how your home scores against energy and water targets.

It encourages the use of rainwater tanks, water-saving fixtures, improved insulation, passive solar orientation, natural lighting and native plants for gardens to name a few.

BASIX provides you as a new home owner with a better quality home. Passing the BASIX certificate is mandatory for all homes in the Pacific Bay Western Lands development.

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Key principles

1. STREETSCAPE, LANDSCAPE AND FENCING

- The streetscape is a major contributor to the quality and success of the neighbourhood. The landscape character of the street will be created by well established front gardens, street trees and the visibility of backyard trees beyond the house. Corner lot homes will be specifically designed to provide landmarks and means of navigating the neighbourhood. The relationship between individual lots and the street will be defined through the blending of public and private landscaping. This means eliminating front fences and replacing them with extensive low and mid high planting. Generous front verandas and entry porches are also encouraged to provide residents with additional outdoor living areas whilst enabling passive surveillance and interaction with passers-by. Fences to public parks and open spaces must allow for visual connectivity with open spaces to and from the dwelling, preventing a wall-enclosed parkland.

1.1 Important Concepts

- Create attractive landscaped front gardens that include a number of small trees and low planting.
- Front fencing is not permitted but landscaped planting is encouraged and low retaining walls are acceptable where necessary.
- Well-landscaped front gardens will blend the street verges with the private space. This will encourage use of the front garden as well as increasing surveillance and activation of the street.
- Larger trees in the backyard that can be seen from the street add a significant presence to the street as well as to the garden, providing shade and amenity.
- Letter boxes should be incorporated into the landscape design rather than sit in isolation.
- The site plan should indicate the percentage of hard and soft and permeable landscaping, tree sizes, species and locations.

1.2 Guidelines

1.2.1 No fencing to the front of properties (retaining walls are permitted where necessary). See Fig. 2.1 - 2.3.

1.2.2 No side fencing to neighbouring lots in the setback zone and within 2 m behind the front façade.

1.2.3 Side fences (beginning 2 m behind the front facade – see Fig 2.1 page) are to be:

(a) 700 - 1200 mm high and of 50% open appearance;

(b) designed for flora and fauna to spread and grow around;

(c) designed to allow storm water run off;

(d) metal sheet fencing is not permitted except where required to address bush fire issues specifically.

1.2.3 Front planting creates soft transition between road reserve and individual lots. The planting is to be:

(a) of various indigenous species;

(b) drought resisting;

(c) various heights, minimum of 1200 mm (mature size);

(d) formal hedges are not permitted.

1.2.4 Where retaining walls are permitted they have to be:

(a) of a max. height of 1000 mm;

(b) broken up with set backs and change in height at least every 5 metres;

(c) of natural broken stone.

1.2.4 In addition:

(a) inclusion of 'small' trees (5 m to 8 m high at maturity) to front gardens:

- DH: min. of 3
- TH: min. of 1

(b) inclusion of 'tall' trees (more than 12 m high at maturity) to rear gardens:

- DH: min. of 2
- TH: min. of 1

2. GARAGES AND DRIVEWAYS

- In order to provide a diverse and attractive streetscape, the house façade should be dominant, with the garage being a recessive element on the street elevation.

2.1 Important Concepts

- Where site conditions allow, garages should be located to allow solar access to the private open space and internal living areas of the home. They should be located on the southern side of East-West facing lots, and the western side of North-South facing lots.
- With the exception of town houses with garage courts, garages need to be integrated into the house design. The entry and the house facade are to be the predominant features. A simple design for the garage door itself will reduce its visual impact greatly.
- Reducing the width of the driveway at the street and incorporating landscape elements around parts of the driveway provides a more attractive and walkable street.
- Locating the garage under the ground floor slab or within the natural slope of the sites reduces the visual impact of the garage and driveway.

2.2 Guidelines

2.2.1 Garage doors: See Fig. 2.2

(a) overall garage entry no wider than 6.0 m;

(b) max. garage door height of 2.4 m;

(c) single and double garages are preferred

(d) corner lots should be accessed from the secondary street and away from the corner.

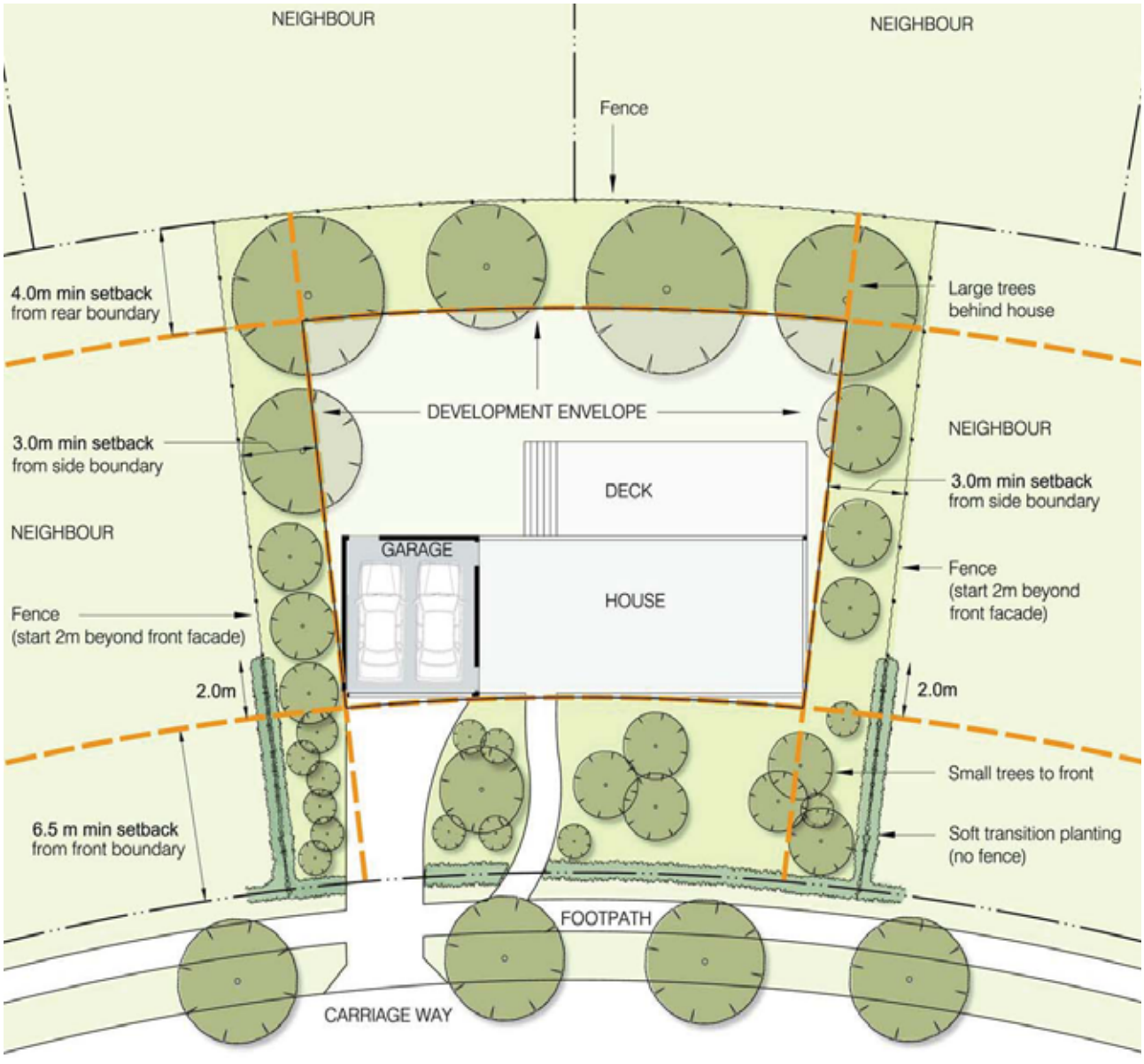

Fig. 2.1 - Development Envelope and Landscape (Detached Houses)

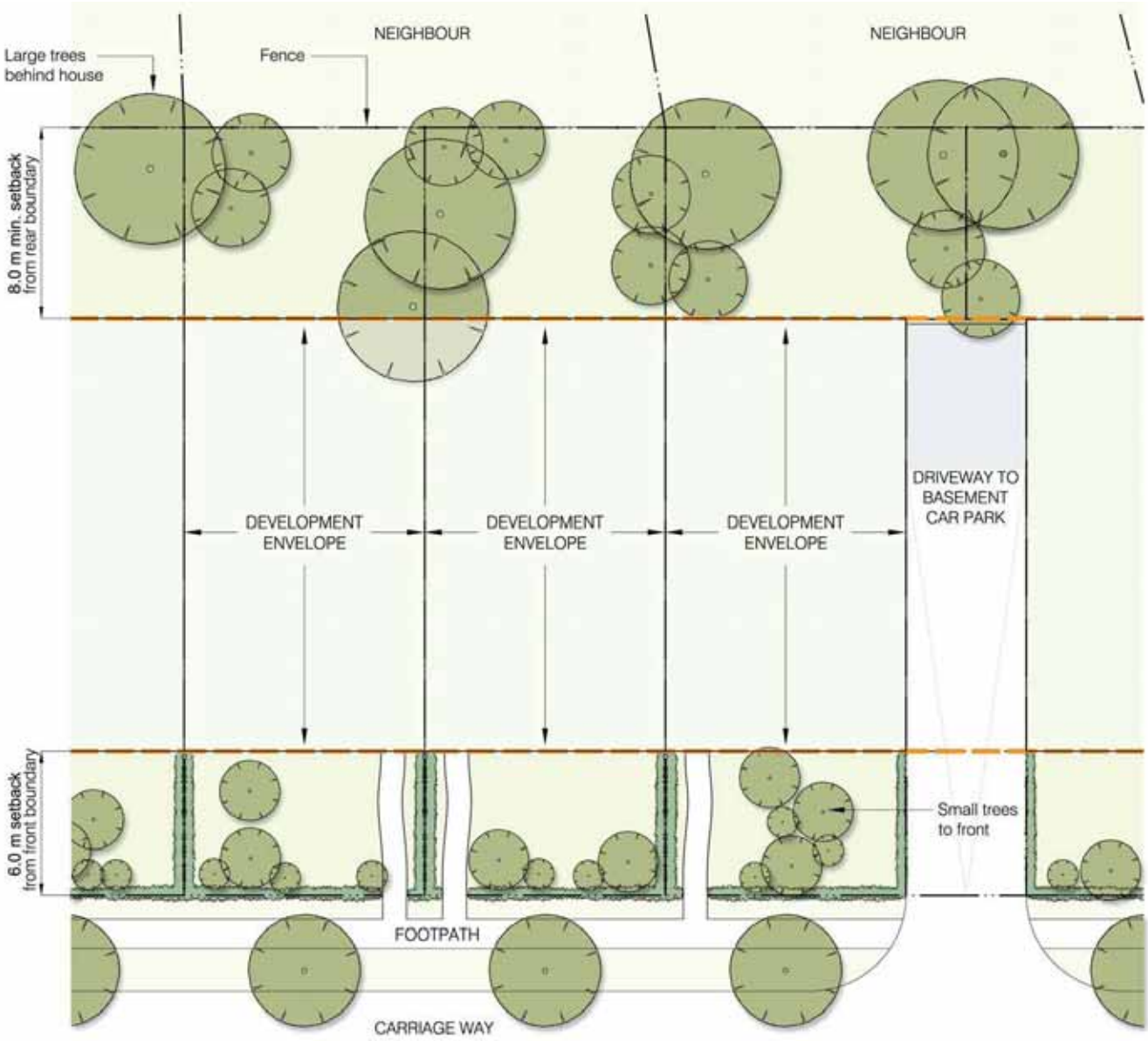

Fig. 2.2 - Development Envelope and Landscape (Townhouses Type A)

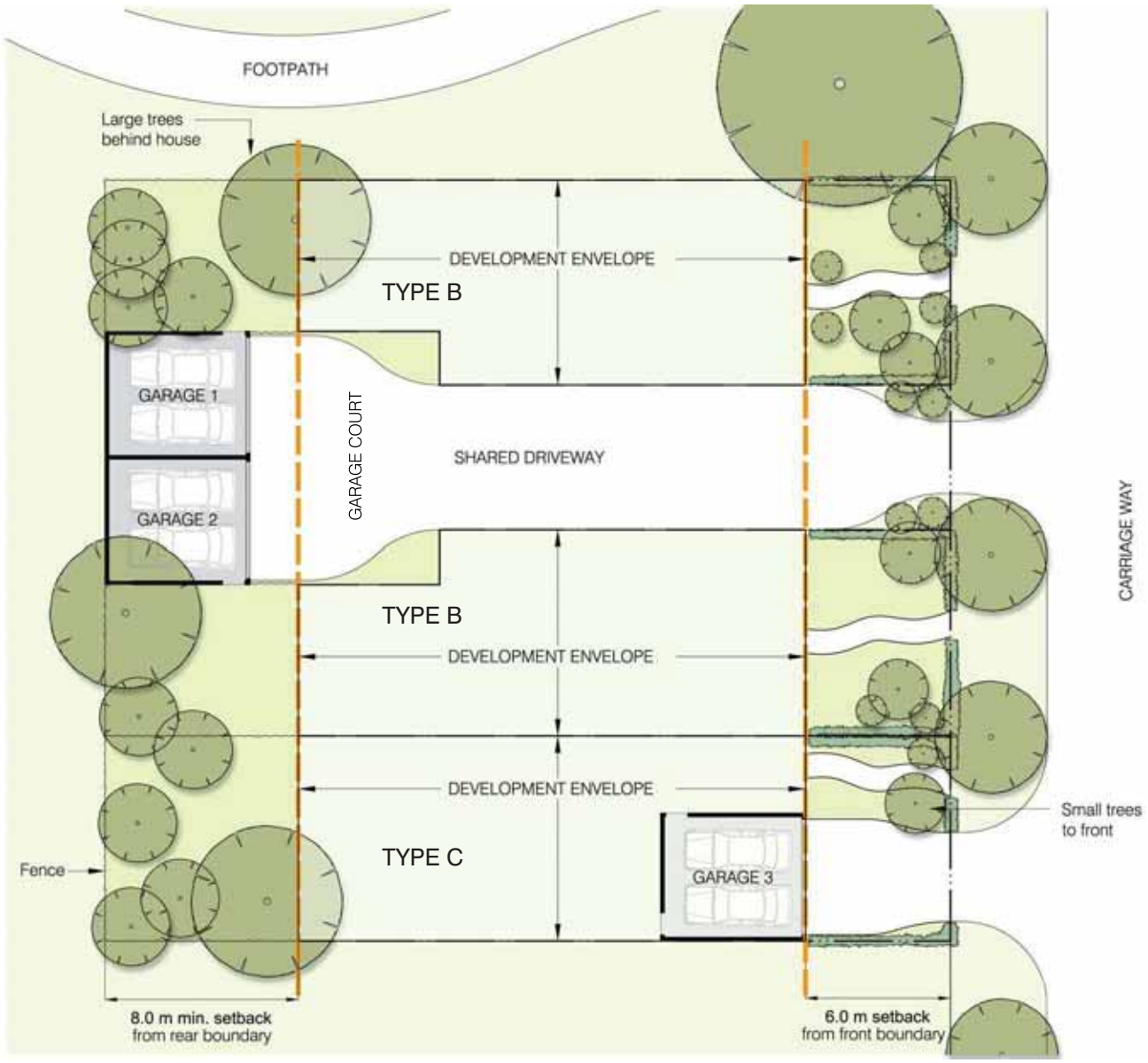

Fig. 2.3 - Development Envelope and Landscape (Townhouses Types B & C)

2.2.2 Driveways and Access Path

(a) driveway to be not wider than 3.2 m at site boundary and from there to kerb;

(b) driveway to be a min of 1.0 m from street trees and street furniture (e.g. lamp posts, electrical housings, etc).

(c) the materials of the driveway and access path should be continous until they intersect with the public footpath or the carriageway (whatever occurs first). Cost and maintanance will be the responsibility of the resident.

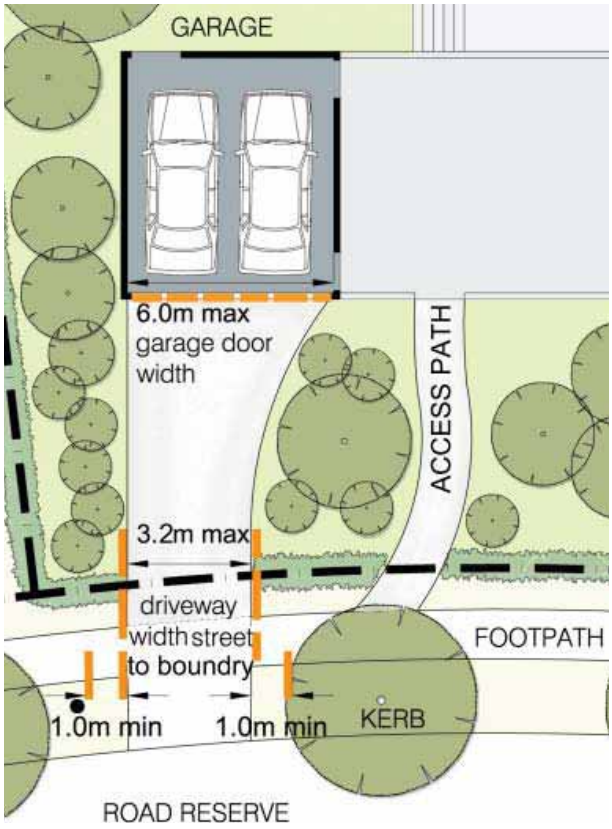

Fig. 2.2 - Driveway/Garage/Access Path

3. BUILDING SETBACKS

- The setback from the street is an important factor in maintaining the open rural parkland character of the development. Detached houses need enough space between them to avoid the streetscape appearing overcrowded. Providing adequate setbacks between detached houses also improves the aesthetic of the street and enhances diversity along the street elevation. These spaces are especially important at the upper level to maintain privacy and solar access. The townhouses around the playing field are an exception. The objective here is to create a suburban character with reduced setbacks.

3.1 Important Concepts

- Ensure houses are stepped back sufficiently from the side boundaries to reduce over shadowing.
- The upper levels of houses should be adequately set back to increase privacy, accommodate large trees and improve solar access to the rear yard if applicable.
- Corner lot houses should address both street frontages, rather than simply the main street alone.

3.2 Guidelines

3.2.1 Front façade setbacks from street boundary:

(a) 6.5 m for single dwelling lots;

(b) 6.0 m for townhouses (façade alignment)

(c) on corner lots the minimum set back to the secondary street is 3m.

3.2.2 Side and rear setbacks to site boundaries:

(a) DH: min. side set back to site boundaries other than streets is 3 m.
TH: side set back not applicable

(b) DH: min. rear set back is 4 m on ground floor and 8 m on the upper level(s).
TH: min. rear set back is 8 m.

4. SITE COVERAGE AND LANDSCAPED AREA

Buildings should be sized and configured such that there is sufficient area on the site to allow for a generous rear garden, a landscaped front garden and adequate distance between neighbours. Bins and clothes drying areas should be located in a visually screened or obscured position. The site coverage includes all ancillary development (e.g. garages, car ports, hard paved surfaces, swimming pools, bin enclosures).

4.1 Important Concepts

- A house plan should sit comfortably on the chosen site by:
- orientating the home for optimum solar access and control, ideally with living areas to the north;
- addressing the street, with the house entry visible and clearly defined in built form;
- providing suitable and usable open spaces;

- retaining important natural features of the site and significant existing trees; providing sufficient vehicle access and parking;
- protecting visual and acoustic privacy as well as solar access to the adjoining dwellings;
- locate A/C units and other technical equipment (e.g. pool pump/filter, rain water tank, solar equipment)
- landscaping areas to reduce storm water run off and having sufficient planting to prevent soil erosion;
- garbage storage areas are not be located near the front of the site and are to be concealed from the street. This is especially important where lots have two street frontages. Where unavoidable (e.g. townhouse lot), a timber battened screen with vine cover (or similar solution) may be used to reduce its visibility from the street;
- entry to the the corner lots should be addressed with either a built form or landscaping to act as a means of way-finding and to add definition to the street character.

4.2 Guidelines

4.2.1 Floor Space Ratios (N/A to town houses):

(a) lots up to 900 m^2: 50% of the site area (FSR: 0.5:1);

(b) lots over to 900 m^2: 40% of the site area (FSR: 0.4:1);

(f) the min. soft or permeable landscaped area is to be 40% of the overall lot size.

4.2.2 Site coverage and the footprint of the house should allow for:

(a) landscaped area which gives permeability of soil to limit stormwater run-off;

(b) diversity of built form;

(c) privacy for both residents and their neighbours.

4.2.3 Bin storage, water tanks, A/C units, external housing and drying areas to be:

(a) concealed from street view;

(b) considered carefully within the overall house and garden design;

(c) indicated on the site plan.

5. SOLAR ACCESS AND HOUSE DESIGN

- Well planned homes bring a feeling of spaciousness, sunlight and privacy to living. Design should take advantage of outlooks toward landscaped areas, provide opportunities for natural breezes to circulate throughout (cross ventilation) and avoid 'wasted spaces'. A house should be organised into zones, separating public living areas and more private bedroom and study areas.

5.1 Important Concepts

- Orientate living areas to the north, facing landscaped areas, where possible.
- Provide quality solar access to internal and external living areas.
- Provide generous ceiling heights to allow for sufficient daylight, ventilation, increased spaciousness and to accommodate ceiling fans.
- Provide storage areas within houses and garages.

5.2 Guidelines

5.2.1 Solar Access:

(a) winter sun inclusion (Fig. 2.5.2);

(b) summer sun exclusion (Fig. 2.5.2);

(c) optimise roof orientation for use of solar panels (within 15˚ of true north).

5.2.2 Contour orientation (N/A to town houses):

(a) longer side of building to be parallel to contour lines to minimise excavation and maximise desired downhill views.

Natural Cross-Ventilation

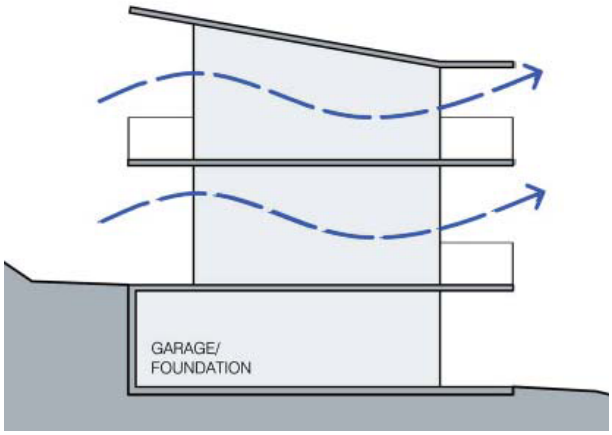

Fig. 2.5.1

Solar Access

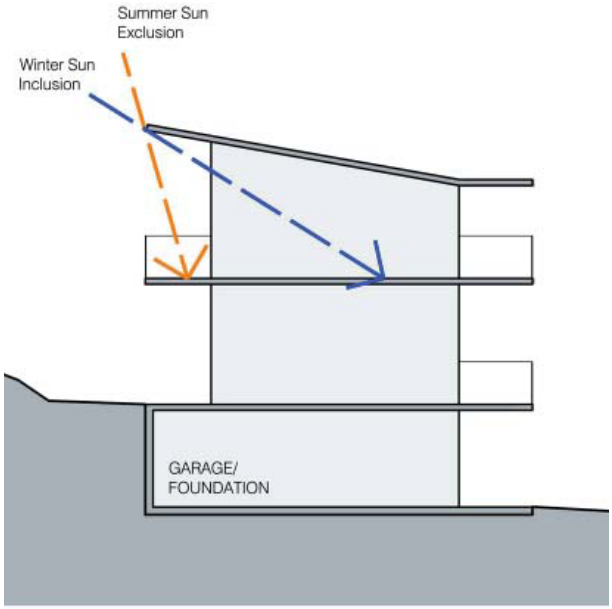

Fig. 2.5.2

6. PRIVATE OPEN SPACE

A well-designed rear garden should be sized and shaped to create maximum usable private open space, and provide the opportunity for outdoor entertaining and recreation. The private open space should relate directly to the internal living area of the home. The rear garden can also contribute to attractive streets by including large trees. In traditional streets, backyard trees add to the 'green and leafy' feel of the neighbourhood.

6.1 Important Concepts

- Outdoor spaces should be purposely planned, generous spaces rather than afterthought residual spaces.
- Rear yards should accommodate at least three/ one (DH/TH) large trees, 12 m high at maturity, to establish a natural canopy above the site. Deciduous trees that create shade in summer and let in the winter sun should be selected.
- Rear yards should accommodate grassed areas, or open space with other soft, permeable ground cover, with good solar access.
- Shade tolerant species should be used in areas with reduced direct sunlight.
- Courtyards can be used to maximise the useability of available outdoor space. They also allow additional natural light and breezes into the house.
- Ideally, courtyards should be orientated to the north to maximise solar access and should incorporate appropriate shade devices.

6.2 Guidelines

6.2.1 Principle private open space to be:

(a) at least 4 m x 6 m;

(b) easily accessible from the main internal living area;

(c) at least half of the principle private open space should receive 3 hours or more of sunlight between 9 am – 3 pm on June 21.

7. HOUSE FORM, ROOFS & FEATURE ELEMENTS

- The quintessence of a residential community is delineated through its built forms, which should be of a coherent and appropriate character, with opportunities for diversity. Such diversity is achieved through varying combinations of single and double storey elements and features such as entry porticos, balconies, terraces, pergolas and sun-shading devices. The objective is to have a holistic design that achieves to integrate all parts of the development including add ons such as garden sheds, clothes lines, shade devices, play equipment, swimming pools, plant equipment etc.

7.1 Important Concepts

Porches and entries should:

- create a clear and visible entry area which provides shelter for people entering the house. Ideally, the main entry for corner houses should be on the long side of the lot to avoid a 'blank' face to that street;
- form an integral part of the dwelling

Verandas and pergolas should:

- create a seamless link between internal and external living areas;
- be provided to all elevations that are exposed to western and northern sun;
- improve energy efficiency by shading windows.

Roof eaves must:

- provide shading and weather protection to windows and doors.

Balconies and terraces must:

- provide usable external living areas for upper levels of the home;
- provide additional opportunities for outlook to the street and garden, improving safety by encouraging passive surveillance.

Sun shading:

- sunscreens and awnings comprised of timber battens or metal frames are encouraged. They shade and protect openings, particularly on the northern and western elevations.

Materials and proportions:

- durability, detailing, appearance and diversity should be considered when selecting materials to ensure a high quality appearance over time;
- variety and individuality are important, and considered material selection creates a harmoniously balanced street image;
- well-balanced proportions are also important in improving the appearance of the dwelling, helping to relate various elements such as doors, windows and entries. Well proportioned elements on the facade of the building significantly improve its aesthetic value.

Facades and roofs:

- while street trees and landscaped gardens create a consistent street character, built form adds diversity and interest;
- flat parapet roofs need to be considered within the overall streetscape and need to relate harmoniously with neighbouring buildings;
- low-pitched roofs behind a parapet need to successfully integrate with the side and rear elevations.

Aerials and other clutter:

- elements of modern living including aerials, satellite dishes, water tanks, air conditioning units and solar hot water units should not be visible from the street or other public spaces;
- careful attention is required to ensure optimum orientation for solar collectors, while avoiding the potential of such items being viewed as roof clutter or sources of glare.

7.2 Guidelines

7.2.1 Eaves to pitched roofs

(a) min. of 450 mm (to the fascia) (not applicable to town houses).

(b) 600 mm eaves should be considered to achieve an increased degree of shading, weather protection to windows and doors

7.2.2 Eaves to flat roofs

(a) alternative external shading devices are required to the min. extend as described under 7.2.1.

7.2.3 Feature elements

(a) max. 1.5 m beyond the front facade (e.g. entries, verandas, pergolas

(b) should differ in material and colour from the rest of the facade

(c) Feature front façade elements may not exceed 25% of the overall length of the front façade and may not extend more than 1.5 m into the set back zone.

(d) Water tanks are not permitted on roofs and are to be integrated into the design.

8. PRIVACY AND SURVEILLANCE

Residential amenity is achieved in part by ensuring adequate privacy within the home while also providing opportunities for passive surveillance from those homes over the adjacent streets and public spaces.

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8.1 Important Concepts

- Set back the upper level, most critically from the rear boundary, to minimise overlooking adjoining private open space.
- Locate windows, doors and decked areas to minimise overlooking neighbouring private open space, particularly at the upper level.
- Consider screening to allow for both privacy and natural ventilation.
- Landscaping near lot boundaries can achieve additional privacy and shading.
- Provide a habitable room overlooking the street to provide passive surveillance. Where possible this should be a living room.

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8.2 Guidelines

8.2.1 Habitable rooms:

(a) must overlook the street to provide passive surveillance;

(b) overlooking the private open space of a neighbouring house are to have min. sill heights of 1.7 m above floor level or are to be screened appropriately.

9. COLOUR SCHEMES

For the development to achieve a successful homogenous identity, it is important for the exterior of all houses to adhere to a complementary colour scheme. This in conjunction with other guidelines ensures a consistent standard of appearance for the entire development whilst allowing for individual expression within well considered constraints. The chosen colour schemes acknowledge the intrinsic nature of the landscape and the need for dwellings to harmonize with the environment and with each other.

9.1 Important Concepts

Colour palette

- The vision for the Coffs Harbour Western Lands Development with respect to providing a harmonious colour palette is based on a response to the natural colours of the immediate environment. The natural colours vary from the earth to the trees and sky with an understated neutral quality. The buildings should reflect these, with some variations or highlights on feature elements such as entries. Use of bright colours such as reds and bright terracotta is not considered appropriate and will not be approved. Exterior wall and roof colours determine the amount of the sun's heat absorbed by the building materials. Light coloured exterior surfaces reflect heat and aid in keeping houses cool.

Roofs, soffits and pergolas

- The colours should be chosen wisely to blend with the surrounding. Lighter, natural colours reduce the heat intake and are therefore preferred. Primary colours are discouraged. Reflective silver and white shades will not be accepted as they are too visually prominent and can cause glare to neighbours and traffic. Harmony of colour, with the various architectural elements and the natural is important.

Walls and columns

- As with the roofs, colours should reflect the environment to produce visual harmony. Rendered masonry walls to ground floors could be slightly lighter than upper floors to exaggerate the roof overhang although all should be within the neutral range of hues. Timber and other natural materials should be treated with matching stains or colours to preserve their authenticity.

9.2 Guidelines

9.2.1 Colours:

(b) bright or primary colours such as reds and bright terracottas are inappropriate;

(c) reflective silver and white shades will not be accepted as roof material colours.

9.2.4 Finishes:

(a) timber (other than fences) to be either stained or painted;

(b) masonry to be rendered and painted or bagged and painted;

(c) plain or painted brickwork for a max of 10% of the total wall surface, else rendered.

10. TRAFFIC NOISE

Appropriate site planning, building design, and the use of insulation and sound absorbing materials in building construction could be utilised as outlined below for any proposed residences fronting any of the surrounding roadways. GHD acoustic consultants recommend the following building processes and ways to design a house to mitigate possible road traffic related noise intrusion at the time of subdivision.

Table 10.1

Construction categories required to achieve indoor sound levels recommended as satisfactory in AS2107. [Refer also to Appendix 20.2 for the location category of your lot]

Category	Traffic Noise Level	Definition of Construction Category
2	$45 < L_{Aeq,T} \leq 60$	Standard construction, except for lightweight elements such as plasterboard or metal cladding or all-glass facades. Windows, doors & other openings must be closed.
3	$60 < L_{Aeq,T} \leq 75$	Special construction, chosen in accordance with AS3671 component selection derivations. Windows, doors and other openings must be closed.

Category 2

External Walls:

- double-skin (cavity) clay brick wall, 270mm thick in which the wall space is ventilated by connection with sub-floor vents; Upper part of internal wall sheeting is exposed to, and penetrated by upper wall vents leading to, the eaves space, or similar.

Ceiling/Roof Systems:

- pitched roof clad with tiles, or 0.5 mm corrugated galvanised iron or 6 mm corrugated cellulose cement over 2 layers 100 gypsum plasterboard plus 2-sided aluminium foil over rafters; or
- flat 0.6 mm galvanized steel tough roofing, attached to the same timber framework and about 150 mm above, the same ceiling as above.
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External Windows:

- appropriate double glazing system or 10-14mm thick single glazing.

External Doors:

- solid-core approximately 35mm thick plywood door with appropriate acoustic seals around sides, top and base, or similar.

Category 3

External Walls:

- 220mm cavity brick wall of two leaves of 90 mm extruded perforated modular bricks with a 40mm cavity, overall thickness 220mm, surface density 310 kg/, or similar; or
- single-leaf wall of 230mm x 110mm x 76mm rendered 13mm both sides, overall thickness 140mm, surface density 230kg/m2 or similar, or
- poured dense concrete, 100mm thick, or similar.

Ceiling/Roof Systems:

- as for Category 2 above, plus 50mm, 12kg/m2 glass fibre blanket between ceiling joists, or similar;
- as for option 2 of Category 2, plus 75mm thick 85 kg/m3 mineral wool batts, or 100mm thick 45 kg/m3 cellulose fibre fluff between ceiling joists, or similar.

External Windows:

- appropriate double glazing system.

External Doors:

- solid-core approximately 42mm thick plywood door with appropriate acoustic seals around sides, top and base, or similar.

Appropriate Alternatives

All construction examples listed in Categories 2 and 3 above can be replaced with appropriate alternatives that achieve satisfactory indoor sound levels as recommended in AS2107.

11. TOWNHOUSES

This section is to delineate the special character of The Oval precinct and the town houses around the former Wallabies training field.

11.1 Zoning and Types

Generally the townhouses follow the Design Guidelines outlined in the chapters above. However, in detail, there are three deferent kinds of townhouses. One of the objectives is to limit the number of driveways and garage doors to the street front by implementing garage courts and underground car parking. Fig. 11.1 shows which lots are part of the categories described as follows:

Fig. 11.1 - Townhouse Type Allocation

Townhouses Type A (TH A):
Townhouses to the North of the playing field. Underground car parking with one central access/exit ramp. (Fig. 11.2)

Townhouses Type B (TH B): Townhouses with a garage court. The garage court can be reached through a shared driveway and will be located at the far end of the properties away from the street.

Townhouses Type C (TH C):
Townhouses with a garage integrated into the house design and accessible from the street

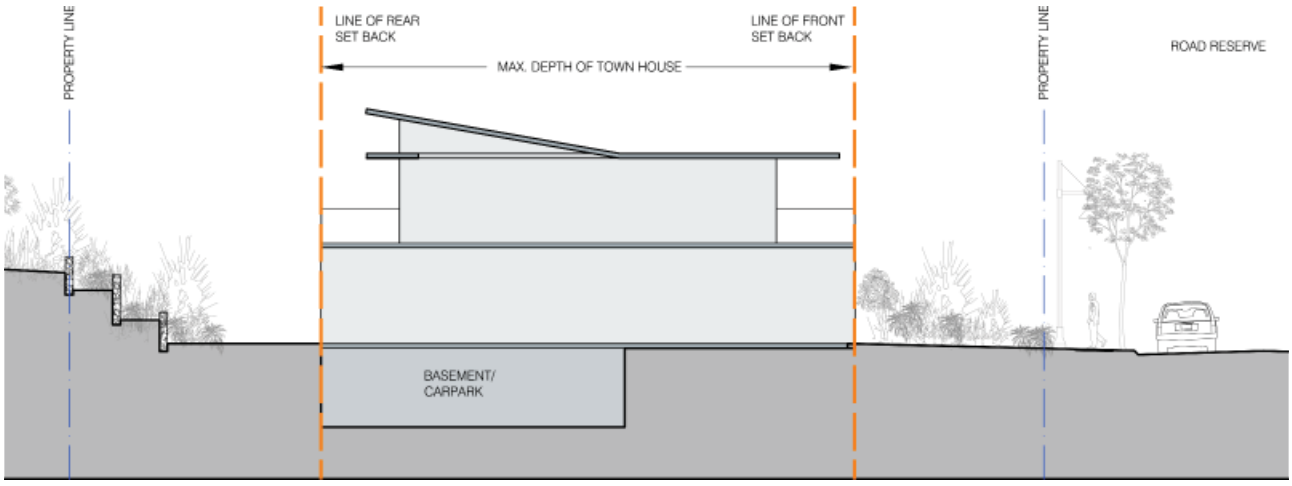

Fig. 11.2 - Indicative Section Townhouse Type A

Assessment Process

12. SEEKING APPROVAL

1. The Architectural Review Committee (ARC)

The ARC is there to assist you in realizing your most important investment, so you are encouraged to contact them in the early stages of your design before final plans are completed for formal lodgement. This way you can quickly understand the parameters within which you can create your design. The ARC is also designed to interpret the guidelines, provide informed advice and help you to find acceptable solutions to any architectural or landscape challenges. Despite its ability to review any aspect of your design with its discretionary powers, the ARC will address any such issues in a positive and constructive way.

Before commencing any building work on your property and prior to lodgement of plans to Council, the Architectural Guidelines require that you obtain prior approval through the ARC for these works.

To approve your plans, we need two (2) sets of drawings on A3 size paper consisting of the following:

2. Sketch review

Schematic Design Drawings as outlined below:

- Site Plan (1:200) showing:
  - north;
  - property lines with metres and bounds;
  - building setbacks dimensioned;
  - building footprint;
  - location of parking and garages;
  - driveways, paths, landscaping and retaining walls;
  - floor plans and roof plans (1:100);
  - elevations (1:100), height to eaves and overall height above finished ground level;
  - materials;
  - floor to floor heights;
  - ground level;
  - roof pitches;
  - signage;
  - colour palette of external colours.

Note: If there are any variances to the guidelines, submit their description and the justification based on merit or hardship.

3. Construction document review

This review checks the construction documents for compliance with the Guidelines and verifies that recommendations made at the sketch review have been incorporated. Conformity with Local Authority regulations is the responsibility of your Architect, Designer or Builder. The ARC will stamp the drawings upon approval for submission to the relevant authorities.

The construction document will need to include:

- Site Plan (1:200) showing:
  - north;
  - property lines with metres and bounds;
  - building setbacks dimensioned;
  - building footprint with entries, porches, balconies,terraces, pools, pergolas and overhangs shown;
  - location of parking and garages;
  - driveways and paths.
- Landscape Plan (1:100) including:
  - north;
  - property lines;
  - layout of paved garden bed and turf areas including finished levels and surfaces;
  - location of driveways, parking, pools, paths, garden, lawn, retaining walls, fences, rubbish bins storage;
  - location, A.C. units, clothes lines, outdoor structures, external housings and letterboxes;
  - retaining structures (if any);
  - fencing types;
  - proposed plant schedule including species, containerizes, height at planting and anticipated mature height.

Note: All drawings where appropriate are to:
- have a visual scale bar;
- be to scale;
- have a proper title relating to the content;
- have a proper legend;
- state the name of the architect/landscape architect.

Checklist

The following checklist gives an overview of the guidelines outlined in the previous chapters.
If you have ticked off all the boxes to the right your development proposal is ready for assessment.

1.	**STREETSCAPE, LANDSCAPE , FENCES**	YES?
FENCES	no fences to front?	◯
	no fences along setback zone?	◯
	fences 700 - 1200 mm in height?	◯
	fences of 50% open appearance?	◯
	flora and fauna spreading considered?	◯
	storm water run off considered?	◯
	material other than metal sheets?	◯
PLANTING	various indigenous and drought resistant species?	◯
	various heights and a min. of 1.2 m in transition zone to primary street?	◯
	3/1 (DH/TH) small trees in front yard?	◯
	2/1 (DH/TH) tall trees in back yard?	◯
	no hedges?	◯
RETAINING WALLS	not higher than 1.0m?	◯
	variation at least every 5 m of length?	◯
	natural broken stone appearance?	◯
2.	**GARAGES AND DRIVEWAYS**	
GARAG.	garage door within limits of 6m wide and 2.4m high?	◯
	garage for max. 2 cars?	◯
DRIVEWAY	max. 3 m wide at site boundary?	◯
	min. 1.5 m distance to street trees and furniture?	◯
	corner lot only: driveway connected to secondary street?	◯
3.	**BUILDING SETBACKS**	
SETBACKS	front: 6.5/6.0 m (DH/TH) (main façade) and 4.5/4.0 (DH/TH) m for featured elements	◯
	side: 3 m minimum setback? (N/A to town houses)	◯
	back: 4/8 m (DH/TH) minimum setback?	◯

4.	**SITE COVERAGE AND LANDSCAPED AREA**	YES?
FSR	50% max. (FSR 1:0.5)) for lot up to 900m² met?	◯
	40% max. (FSR 1:0.4) for lot over 900m² met?	◯
BUILT FORM	privacy guaranteed?	◯
	articulated facade?	◯
	bins integrated and concealed?	◯
	water tank integrated and concealed?	◯
	drying area integrated in design?	◯
5.	**SOLAR ACCESS & HOUSE DESIGN**	
SUN & ORIENTATION	winter sun included?	◯
	summer sun excluded?	◯
	contour orientation optimized?	◯
	roof orientation optimized?	◯
6.	**PRIVATE OPEN SPACE**	
POS	min. size of of private open space 4 x 6 m?	◯
	connected to main internal living area?	◯
	required sunlight access guaranteed?	◯
7.	**HOUSE FORM, ROOFS & FEATURE ELEMENTS**	
BUILT - FORM	high walls avoided?	◯
	eaves of min. 450 mm to pitched roofs?	◯
	shading devices to all windows receiving direct sun?	◯
	feature elements don't extend more than 1.5 m from main façade?	◯
	feature elements to front façade don't exceed 25% of length?	◯
	variation in materials, form and colour?	◯
8.	**PRIVACY & SURVEILLANCE**	
P&S	at least one habitable room opens to street?	◯
	neighbour's privacy is respected?	◯
9.	**COLOURS**	YES
COLOURS	no use of bright or primary colours?	◯
	roof colours are not reflective silver or glare causing?	◯
	timber is stained or painted (other than fences)?	◯
	masonry is rendered?	◯
	plain or painted brickwork area does not exceed 10% of the total wall surface?	◯

Glossary	
A	
ARC	Architectural Review Committee (a) panel of architectural educated members empowered to review sketch designs and development applications for proposed developments on the lots within the Pacific Bay Western Lands Development (b) primary objective is to create, maintain and ensure the architecural character and asset value of the PBWL sites
B	
BASIX	Building Sustainability Index (a) Introduced by the NSW Government (b) Ensures homes are designed to use less potable water and be responsible for fewer greenhouse gas emissions by setting energy and water reduction targets for house and units.
bush fire prone land	An area of land that can support a bush fire or is likely to be subject to bush fire attack.
F	
floor area	The floor area includes any carport, garage, balcony, patio, pergola, terrace or verandah attached to the house and with an enclosing wall of at least 1.4 m above floor level. Awnings, eaves, voids, stairways or lift shafts are not included.
floor space ratio	Ratio between the sum of the floor area of all levels divided by the size of the lot given in percent.
H	
habitable room	A room used for normal domestic activities, and: (a) includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room and sun room; but (b) excludes a bathroom, laundry, water closet, pantry, walk-in robe, corridor, hallway, lobby, photographic darkroom, clothes-drying room, and other spaces of a specialised nature occupied neither frequently nor for extended.
P	
passive surveillance	Surveillance achieved throughout the sole presence of people for a reason other than surveillance.
primary street	Applies to corner lots only: The street that is wider and expected to carry more traffic of the two streets the lot is connected to. See secondary street also.
S	Applies to corner lots only: The street that is smaller and expected to carry less traffic of the two streets the lot is connected to. See primary street also.
secondary street	Applies to corner lots only: The street that is smaller and expected to carry less traffic of the two streets the lot is connected to. See primary street also.
set back	The distance a structure must be from the surveyed boundary of a lot.
skillion roof	A single-pitch roof made of continuous lengths of material. Unlike a pitched roof, there's no apex or ridge where two sections meet.

Appendices

Appendix 20.1

Development Envelope Drawing
PTW Architects

Appendix 20.2

Construction Categories
PTW Architects

Appendix 20.3

Examples of good hillside practice
Coffey

DEVELOPMENT ENVELOPE

Setbacks as defined by Development Guidelines.

LOTS WITH EXISTING TREES

LOTS 54,60,61,66,95,96 97

Development envelope to retain existing trees.

EXEMPTIONS

LOTS 36,58,64 & 75

All lots to address primary street setback of 6.5m and orientated to create gateway into secondary street.

Lot 58 rear and side setback reduced to 2m to allow for adequate development area.

Note: Buildable area to be max of 50% of total lot size

0 20m 50m 100m

PTW

Project. Pacific Bay Western Lands	Client. Pacific Bay Developments Pty Ltd.	Issued. March 2010	PTW Architects	Ref. 203.113.70	Development Envelopes	DESIGN GUIDELINES APPENDIX 20.1	1:3000@A3

BRUXNER PARK ROAD

PROPOSED FUTURE ROAD

PACIFIC HIGHWAY

JORDANS CREEK

WEST KORORA ROAD

LEGEND - Indoor Noise

- Category 1 (N/A)
- Category 2
- Category 3

Note:
This plan is to be read in conjunction with part 10 of the Design Guidelines.

N

0 20m 50m 100m

PTW

Project. Pacific Bay Western Lands	Client. Pacific Bay Developments Pty Ltd.	Issued. March 2010	PTW Architects	Ref. 203.113.70	Construction Categories	DESIGN GUIDELINES APPENDIX 20.2	1:3000 @ A3

Appendix 20.3 Examples of Good Hillside Practice

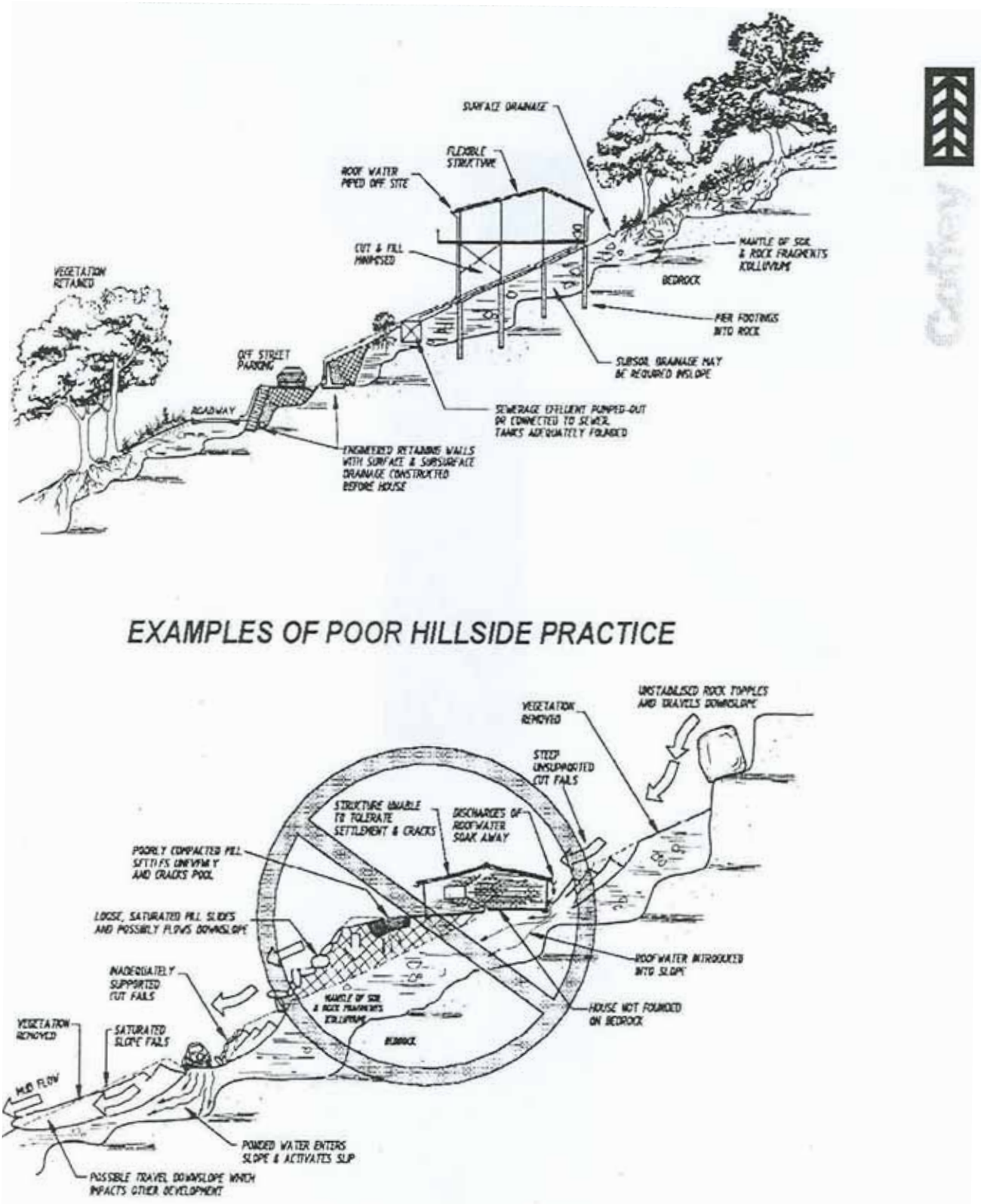

FIGURE 2: ILLUSTRATIONS OF GOOD AND POOR HILLSIDE PRACTICE

This figure is an extract from LANDSLIDE RISK MANAGEMENT CONCEPTS AND GUIDELINES as presented in Australian Geomechanics, Vol 35, No. 1, 2000 which discusses the matter more fully.

SOME GUIDELINES FOR HILLSIDE CONSTRUCTION

	GOOD ENGINEERING PRACTICE	*POOR ENGINEERING PRACTICE*
ADVICE		
GEOTECHNICAL ASSESSMENT	Obtain advice from a qualified, experienced geotechnical consultant at early stage of planning and before site works.	Prepare detailed plan and start site works before geotechnical advice.
PLANNING		
SITE PLANNING	Having obtained geotechnical advice, plan the development with the risk arising from the identified hazards and consequences in mind.	Plan development without regard for the Risk.
DESIGN AND CONSTRUCTION		
HOUSE DESIGN	Use flexible structures which incorporate properly designed brickwork, timber or steel frames, timber or panel cladding. Consider use of split levels. Use decks for recreational areas where appropriate.	Floor plans which require extensive cutting and filling. Movement intolerant structures.
SITE CLEARING	Retain natural vegetation wherever practicable.	Indiscriminately clear the site.
ACCESS & DRIVEWAYS	Satisfy requirements below for cuts, fills, retaining walls and drainage. Council specifications for grades may need to be modified. Driveways and parking areas may need to be fully supported on piers.	Excavate and fill for site access before geotechnical advice.
EARTHWORKS	Retain natural contours wherever possible.	Indiscriminant bulk earthworks.
CUTS	Minimise depth. Support with engineered retaining walls or batter to appropriate slope. Provide drainage measures and erosion control.	Large scale cuts and benching. Unsupported cuts. Ignore drainage requirements
FILLS	Minimise height. Strip vegetation and topsoil and key into natural slopes prior to filling. Use clean fill materials and compact to engineering standards. Batter to appropriate slope or support with engineered retaining wall. Provide surface drainage and appropriate subsurface drainage.	Loose or poorly compacted fill, which if it fails, may flow a considerable distance including onto property below. Block natural drainage lines. Fill over existing vegetation and topsoil. Include stumps, trees, vegetation, topsoil, boulders, building rubble etc in fill.
ROCK OUTCROPS & BOULDERS	Remove or stabilise boulders which may have unacceptable risk. Support rock faces where necessary.	Disturb or undercut detached blocks or boulders.
RETAINING WALLS	Engineer design to resist applied soil and water forces. Found on rock where practicable. Provide subsurface drainage within wall backfill and surface drainage on slope above. Construct wall as soon as possible after cut/fill operation.	Construct a structurally inadequate wall such as sandstone flagging, brick or unreinforced blockwork. Lack of subsurface drains and weepholes.
FOOTINGS	Found within rock where practicable. Use rows of piers or strip footings oriented up and down slope. Design for lateral creep pressures if necessary. Backfill footing excavations to exclude ingress of surface water.	Found on topsoil, loose fill, detached boulders or undercut cliffs.
SWIMMING POOLS	Engineer designed. Support on piers to rock where practicable. Provide with under-drainage and gravity drain outlet where practicable. Design for high soil pressures which may develop on uphill side whilst there may be little or no lateral support on downhill side.	
DRAINAGE		
SURFACE	Provide at tops of cut and fill slopes. Discharge to street drainage or natural water courses. Provide general falls to prevent blockage by siltation and incorporate silt traps. Line to minimise infiltration and make flexible where possible. Special structures to dissipate energy at changes of slope and/or direction.	Discharge at top of fills and cuts. Allow water to pond on bench areas.
SUBSURFACE	Provide filter around subsurface drain. Provide drain behind retaining walls. Use flexible pipelines with access for maintenance. Prevent inflow of surface water.	Discharge roof runoff into absorption trenches.
SEPTIC & SULLAGE	Usually requires pump-out or mains sewer systems; absorption trenches may be possible in some areas if risk is acceptable. Storage tanks should be water-tight and adequately founded.	Discharge sullage directly onto and into slopes. Use absorption trenches without consideration of landslide risk.
EROSION CONTROL & LANDSCAPING	Control erosion as this may lead to instability. Revegetate cleared area.	Failure to observe earthworks and drainage recommendations when landscaping.
DRAWINGS AND SITE VISITS DURING CONSTRUCTION		
DRAWINGS	Building Application drawings should be viewed by geotechnical consultant	
SITE VISITS	Site Visits by consultant may be appropriate during construction/	
INSPECTION AND MAINTENANCE BY OWNER		
OWNER'S RESPONSIBILITY	Clean drainage systems; repair broken joints in drains and leaks in supply pipes. Where structural distress is evident see advice. If seepage observed, determine causes or seek advice on consequences.	

FIGURE 3: SOME GUIDELINES FOR HILLSIDE CONSTRUCTION

This figure is an extract from LANDSLIDE RISK MANAGEMENT CONCEPTS AND GUIDELINES as presented in Australian Geomechanics, Vol 35, No. 1, 2000 which discusses the matter more fully.