







Shellharbour
CITY COUNCIL

Shellharbour Development Control Plan

DCP commencement and amendment

The Shellharbour DCP came into effect on 26 June 2013. Periodically the DCP is amended.

The following table lists the DCP amendments and the dates they came into effect. Reference can be made to the Council report and resolution for details of each amendment.

Amendment	Effective Date	Council report and resolution date
1 – Various amendments	6 July 2016	28 June 2016
2 – Short term rental accommodation		
3 – Various amendments	20 December 2017	12 December 2017
4 – Appendix 13: Tullimbar	29 May 2025	27 May 2025
5 – Chapter 21: Preservation and removal of trees or vegetation	10 July 2025	23 June 2025

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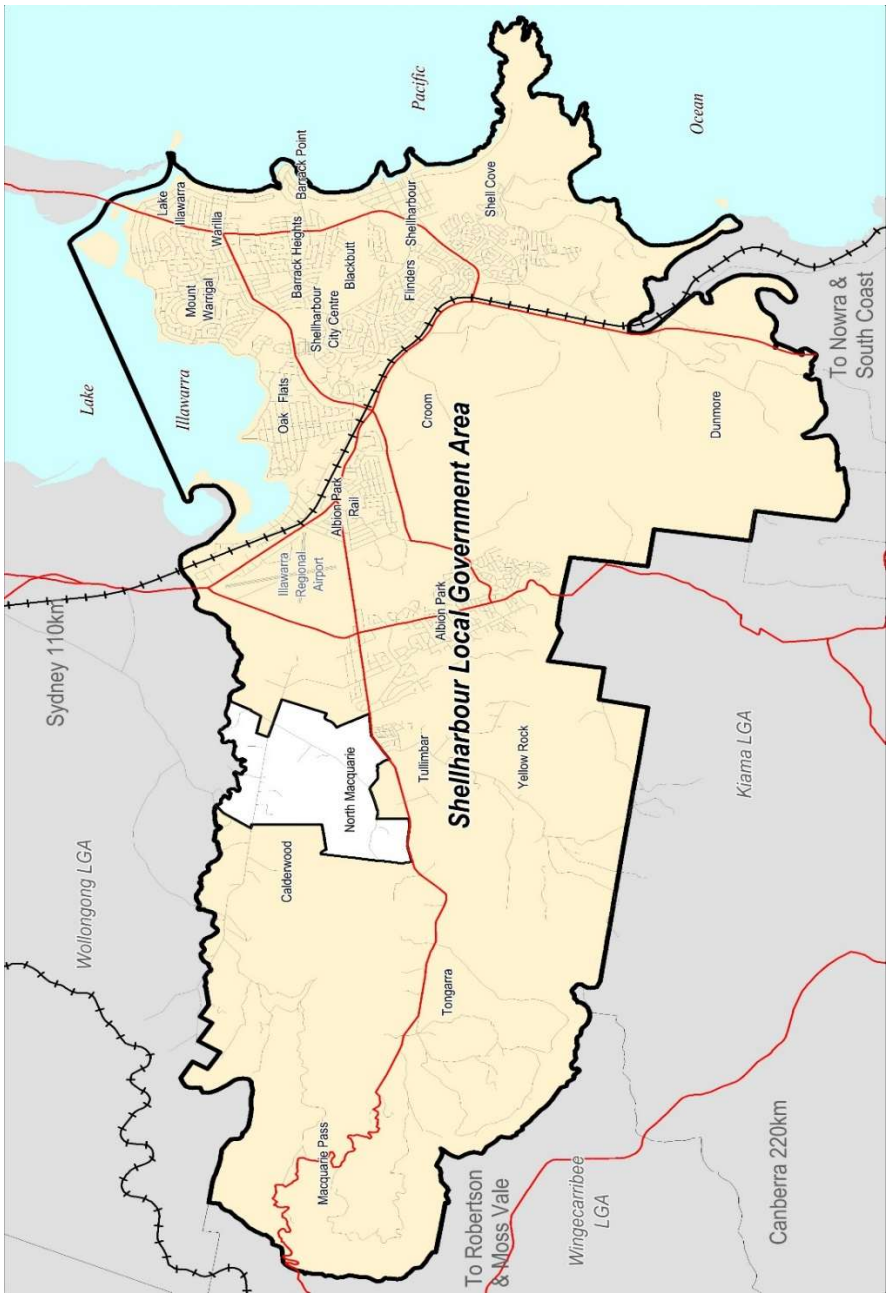
PART 1 - ABOUT THIS DEVELOPMENT CONTROL PLAN AND THE DEVELOPMENT PROCESS

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

1.1 - Land to which this plan applies

This Development Control Plan (DCP) applies to the Shellharbour Local Government Area (LGA) outlined in **Figure 1.1** below except for the white area which is approved for development by the State Government under Part 3a of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and has its own development guidelines under that legislation.

Figure 1.1 - Map of Shellharbour LGA



1.2 - Relationship to other planning related policy

This DCP is made under Section 74 of the EP&A Act and Clause 16 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). It provides objectives, advice and controls to facilitate development.

Under Section 74BA of the EP&A Act, DCP provisions are not statutory requirements however, are able to provide guidance on certain development matters. Under Clause 16 of the EP&A Regulation, a DCP must be in the form of a written statement, and may include supporting maps, plans, diagrams, illustrations and other materials.

DCPs are among a range of policies that need to be considered with development applications. These include local environmental plans (LEPs) and relevant state environmental planning policies (SEPPs). LEPs and SEPPs are legally binding and must be complied with.

According to the Environmental Planning & Assessment Act 1979 the principal purpose of at development control plan is to provide guidance on the following matters to the persons proposing to carry out development and to the consent authority for any such development:

a) Giving the effect to the aims of any enrironmental planning instrument that applies to the development,
b) Facilitating development that is permissible under any such instrument,
c) Achieving the objectives of land zones under any such instrument.

The provisions of a DCP made for that purpose are not statutory requirements.

Should an applicant consider DCP guidance inappropriate, they can seek a variation to it for Council's consideration. The criteria for how such a variation will be assessed is provided for in Section 2.5 of the DCP – Variations to development provisions.

Section 79C of the EP&A Act lists DCPs as a matter for consideration in determining development applications (DAs). The provisions of the EP&A Act and EP&A Regulation 2000, the Building Code of Australia (BCA), the *Local Government Act 1993* (LG Act) and any relevant State Environmental Planning Policy (SEPP) or Regional Environmental Plan, Council's Section 94 Contributions Plan and Planning Agreements, apply to DAs irrespective of the provisions of this DCP. Council will also consider all matters listed in Section 79C of the EP&A (as amended) prior to determining DAs.

Different SEPPs cover a range of development including but not limited to secondary dwellings, boarding houses, senior living and complying development that can influence or dictate the development process.

SEPPs can be accessed via the NSW Legislation website.

Shellharbour Local Environmental Plan 2013 (LEP 2013) applies to all land covered by this DCP except areas deferred under LEP 2013 (**see Chapter 33**). Either *Shellharbour Local Environmental Plan 2000* (LEP 2000) or *Shellharbour Local Environmental Plan 2004* (LEP 2004) applies to the deferred lands.

1.3 - How to use this Development Control Plan and referring to other planning policy

Reference should be made to the State Government's *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* (Codes SEPP) to determine if the development proposed is either exempt from the need for development approval (exempt development) or is complying development. Complying development can be assessed and determined by either Council or a Private Certifier.

Depending on the scale/complexity of the proposal, the proponent may find it necessary to obtain a Planning Certificate (Section 149 of the EP&A Act) from Council to ensure the proponent is informed of all relevant policy and land constraints. Please refer to Council's website for information on and applying for Section 149 Planning Certificates.

Referring to the relevant LEP 2013 will advise whether the proposal is permissible and the provisions of the LEP 2013 which are to be addressed. LEP 2013 contains development standards for floor space ratio, height, minimum lot size and other provisions which may affect a DA. For certain development, this DCP will also have provisions on height and lot size to supplement LEP 2013 development standards.

If a proposal is permissible and requires consent, relevant provisions relating to the development can be obtained from this DCP. Council's staff can assist with this.

The DCP is made up of 6 parts consisting of the following:

Part 1: Contains information about the DCP and how to use it.

Part 2: Contains provisions for specific types of land uses. Generally, these provisions will apply throughout the LGA where that type of development is permissible. Some of these provisions are locality specific, e.g. provisions for residential flat buildings in Shellharbour City Centre or residential development in non-urban areas.

Part 3: Contains provisions for various types of land uses. Some of these provisions are locality specific, for instance vehicular access requirements for specific sites, development at the airport and environs or floodplain risk management for a particular water catchment.

Part 4: Contains appendices relating to Part 2 which provides supplementary information that is also relied on in development assessment/conceptualisation.

Part 5: Contains appendices relating to Part 3 which provides supplementary information that is also relied on in development assessment/conceptualisation.

Part 6: Contains an appendix with the site specific provisions for the land at Tullimbar deferred under LEP 2013 and zoned 2(e) Mixed Use Residential under LEP 2000.

Users of this DCP should go through Part 1, then go through the provisions in Part 2 and associated appendices relevant to their proposal. For example, if the proposal is for an industrial development, it would just be the Industrial Chapter. If it included signage, the Advertising/Signage Chapter too. If town houses, the Residential Chapter. If a non-urban house, again the Residential Chapter and possibly the Appendix on Onsite waste water management.

Lastly, users should go through Part 3 and associated appendices, where any number of Chapters/Appendices could apply to a particular land use. For example, advice relating to flood prone land and/or land containing a heritage item.

Appendices have the same legal status as the non-appendices part of this DCP.

The terms used in this DCP are defined as per LEP 2013 or the EP&A Act. Some definitions may however, be more specific to particular development types and will appear in the relevant chapter or appendices.

It may not always be possible to achieve any or all of the development capacity identified in LEP 2013. That a proposed use is consistent with the zoning of a parcel of land does not necessarily imply that proposal will be given development consent. Rather, the proposed use needs to be consistent with the permissible uses of the land as described in LEP 2013, to enable the assessment

of a development to proceed. Considerations, in addition to LEP 2013, which will need to be assessed before a development proposal is able to be granted development consent may include:

- preserving a heritage feature meaning you may only be able to develop part of the site
- (depending on specific site characteristics), overall requirements for a residential development meaning the floor space ratio development standard applied in LEP 2013 may not be achieved
- flood or bushfire risk possibly rendering the site partly or fully undevelopable
- providing fire egress in adapting a building to another use may be cost prohibitive
- non-urban subdivision issues may mean the minimum lot size applied in LEP 2013 is not achievable.

The following DCP Chapter 2 ***The Development Process*** provides advice on developing a design, consultation that should be undertaken as part of this, what Shellharbour City Council (Council) will do with an application once it is lodged and options for the developer after the DA is determined.

For more specific information about the process of preparing and lodging DAs, refer to Information about Development Applications on Council's Website.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 2 - THE DEVELOPMENT PROCESS

2.1 - What to do before lodging a Development Application

It is important to understand what needs to be considered when preparing a DA. These considerations can include the provisions in LEP 2013, this DCP, otfacher policies, Section 149 Certificates under the EP&A Act and Section 88B instruments under the *NSW* Conveyancing *Act 1919.*

It is important to undertake this investigation as a proposal needs to be designed to be consistent with these documents. This process will minimise the risk of lodging a DA that may not be permissible or is deficient in information.

Depending on the scale/nature/complexity of the proposal, the proponent may need to engage professionally qualified consultants to prepare plans/forms and reports.

Council has established a formal process for pre-application discussions, which allows applicants to discuss their development proposal with a development assessment officer. A written record is kept of these discussions and can be made available.

Contact Council for information as early as possible in the design process. Staff are available to answer general questions relating to the development process.

For more specific information about the process of preparing and lodging DAs, refer to Information about Development Applications on Council's website.

2.2 - Development Application assessment, notification and submissions

Objectives

1. Outline the procedures for the notification and advertisement of DAs, applications to modify development consents and the review of development determinations

2. outline when a person can make a submission to Council concerning an application

3. outline when notification of applications is not required

4. to facilitate the efficient processing of applications without compromising the opportunity for public participation

5. to ensure notification is carried out in accordance with the EP&A Act, the EP&A Regulation and applicable Environmental Planning Instruments.

6. public participation is:

    a. to provide the community with an opportunity to make comment on a development proposal

    b. to enable Council to be aware of community concerns when administering a DA.

NOTE: Once lodged, a DA will be assigned to Council's Development Assessment Staff.

Council's development assessment staff may refer the application to other Council Groups and to external agencies such as State Government departments, for comment/requirements. After this assessment, additional information may be requested before the application is able to be considered further. All internal and external referral comments and public submissions will be considered in the assessment process.

NOTE: Council may delay notifying a DA until all relevant supporting information is received. If the assessment/notification process necessitates a DAs redesign or substantial changes, the DA may need to be re-notified.

ADVICE

Types of notification and advertising (Public Exhibition)

2.2.1 Notification of a DA

Notification is where Council writes to those people identified as requiring notification, advising of the lodgement of a DA and to seek any comments on the proposal. Usually a minimum of 14 days is given to respond.

Council may consider that an application will require a longer public exhibition period. In these circumstances, both the applicant and those being notified will be advised of the extended notification period.

Written notice of DAs will be in the form of a letter to the property owners and occupiers within a minimum of 25 metres of each side of the property boundary, subject to the development proposal. The 25m is measured in the form of a locus measured from the perimeter of the existing lot boundary.

On very large lots where a proposed development footprint is remote to property boundaries, the 25 metres can be measured from the edge of the development footprint. This will be up to the discretion of Council.

2.2.2 Advertising of a DA

Advertising is where Council, in addition to writing to those people required to be notified, places an advertisement in a local newspaper and a sign on the property advising of the lodgement of a DA.

Advertising of DAs will be in the form of a letter to the property owners/occupiers within a minimum of 50 metres measured from each side of the subject property's boundary.

On very large lots where a proposed development footprint is remote to property boundaries, the 50 metres can be measured from the edge of the development footprint. This will be up to the discretion of Council.

Advertising is usually for a minimum period of 21 days. Council may consider that an application will require a longer public exhibition period and/or extended notification area. The extended notification

area is typically limited to 400m. In these circumstances, both the applicant and those being notified will be advised of the extended public exhibition period.

There will be additional public exhibition requirements for developments such as nominated integrated, designated development, advertised development, and other advertised development in accordance with relevant legislation. Refer to the EP&A Act for definitions of these types of development.

2.2.3 Requirements for notifications and advertising of a DA

For notifications and advertisements, written notice to property owners/occupiers within the notification area will be made as per the following requirements:

- For buildings in single ownership, written notice will be to the building owner and occupier of the building where the occupier is not the applicant or owner.
- For strata title buildings, written notice will be to the Owners Corporation, the owners of strata units and occupiers of the unit (where a mailing address is known to Council.
- If land is owned or occupied by more than one person, a written notice will be to all the owners and occupiers of that land, where a mailing address is known to Council.

NOTE: Council may delay notifying a DA until all relevant supporting information is received. If the assessment/notification process necessitates a DAs redesign or substantial changes, the DA may need to be re-notified.

2.2.4 Types of development proposals not requiring public exhibition

The following types of development proposals are not likely to be placed on public exhibition, where in the opinion of the Council, the development will not detrimentally affect adjoining or adjacent property owners.

- Demolition only.
- Single storey detached dwellings which comply with this DCP.
- Pergolas, awnings, carports and garages which comply with this DCP.
- Retaining walls and fences which comply with this DCP.
- Swimming Pools which comply with this DCP and that are not located more than 600mm above the natural ground level.
- Subdivision of existing residential, existing commercial or existing industrial developments.
- Signage with an area of less than 10m².
- Minor DAs.

2.2.5 Types of development proposals to be notified

Council will notify the following types of development proposals:

- Two storey dwellings.
- Secondary dwellings.
- First floor additions to an existing dwelling, including a dwelling in a multi-dwelling housing development.

- New building works and/or proposals for using the building and/or land in an industrial zone.
- New building works and/or proposals for using the building and/or land in a business zone.
- Works on Council land or development where Council has an interest.
- Development where, in the opinion of Council, it would be in the public interest to notify the application.

2.2.6 Types of development proposals to be advertised

Council will advertise the following types of development proposals:

- Major industrial and commercial developments.
- Service stations.
- Childcare centres.
- Dual occupancy, multi-dwelling housing and residential flat buildings.
- Subdivision of land which will create additional lots (excluding Strata subdivisions and boundary adjustments).
- Major bulk earthworks and land forming operations.
- Telecommunication facilities.
- Development where, in the opinion of Council, it would be in the public interest to advertise the application.

2.2.7 Development proposals which are amended

An applicant can seek to amend a development proposal any time prior to the determination of the application. Such amendments made to a proposal that is still under assessment will be again placed on public exhibition at the discretion of Council and only where a significant amendment has been made.

2.2.8 Public exhibition of proposals for modification of development consents

After a determination (development consent) has been granted, an applicant may lodge an application to modify an approval under Section 96 of the EP&A Act.

Council will not notify a modification application lodged under Section 96(1) or 96(1A) of the EP&A Act that involve:

- minor error, mis-description or miscalculation
- minimal environmental impacts such as:
  - the modifications do not change the external configuration of the proposal or access or parking arrangements
  - Council is satisfied that the proposal as modified is substantially the same as the original application
  - Council is satisfied that no prejudice will be caused to any person who made a submission on the original application.

Notwithstanding the above, a modification application may be placed on public exhibition if, in the opinion of Council, it would be in the public interest to do so.

Modification applications lodged under Section 96(2) and S96AA of the EP&A Act will be placed on public exhibition.

Submissions made on the original application will not be included in Council's assessment of the modification application as they were considered previously.

Submissions made on the modification application will be included in Council's assessment.

2.2.9 Review of determinations

Where a review of the DA determination is requested under section 82A of the *EP&A Act*, it is Council's discretion as to whether the review is placed on public exhibition. The review of the determination may be notified or advertised. Any submissions made concerning the request for review will be considered.

2.2.10 Submissions period

Unless otherwise stated, the submission period for each development category is in line with the notification or advertising period (except where an extended notification period is given) commencing one day after the date of the notification letter. The newspaper advertisement and notice will refer to the DA and accompanying material as being on exhibition for a stated number of days with the closing date for submissions being at the end of the stated period. If the period finishes on a weekend or public holiday, the period will be extended to the immediate following Monday or next business working day. The period may be increased if the consent authority considers that a longer period should be given in the circumstances.

Where submissions have been received immediately after the notification closes and where Council is still undertaking an assessment of the proposal, the submission will still be taken into consideration for the purpose of evaluating the DA.

2.2.11 Petitions

Where petitions are received in respect to DAs or Section 96 modification of applications under the EP&A Act, the head petitioner or where not nominated, the first petitioner will be acknowledged for the purpose of future contact as to the progress of the application.

Only this petitioner will be advised of the date of the Council Meeting where the DA is being reported to Council and Council's determination of an application.

2.2.12 Disclosure of submissions

Submissions are not confidential. Submissions may be accessed by the public, through Council's Public Information Officer. Also, if the proposal is reported to a Council meeting, the issues raised in that submission will be summarised in the development assessment report.

Where the consent authority is the Joint Regional Planning Panel (JRPP), a copy of the submission will be forwarded to the Panel and where required other government authorities or agencies.

2.2.13 Submission requirements

Submissions relating to a notified or advertised application must:

- be made in writing and addressed to the General Manager
- contain the name and address of the person making the submission
- clearly identify the application to which the submission relates and include the DA number

- state the grounds of any support or objection expressed in the submission
- include details of any reportable political donations or gifts as defined by the *Election Funding and Disclosures Act 1981* include a contact telephone number and email address.

Where a submission in the form of a petition is received, the petition should specify the details of the contact person to whom all correspondence must be addressed. A letter sent to that contact person is taken to be a letter to all signatories on that petition. When a petition is received, Council will use its best endeavours to notify the organiser of the petition.

2.2.14 Anonymous submissions

Council will not take into consideration a submission that does not provide the name or address of the person making a submission (i.e. an anonymous submission).

2.2.15 Notification of the determination of a DA

Council will notify each person who made a submission to the DA of Council's determination of that application. In addition, Council will place a notice in a weekly local newspaper notifying the public of its determination.

2.2.16 Notification period over Christmas/New Year

For notified and advertised applications lodged between 15 December and 15 January, the notification period will be extended by at least an additional 14 days (e.g. a normal 14 day notification period will be extended to 28 days).

2.3 - DA determination, post determination and amended development applications

Most DAs are determined by Council officers under delegation. DAs may need to be reported to Council for instance if they are subject to written objections and or over a certain value. Alternatively, DAs may need to go before the JRPP, or the Independent Development Assessment Panel (IDAP).

JRPPs were established under the EP&A Act to determine regionally significant developments.

Council will continue to receive, notify and assess DAs to be determined by a JRPP as part of the normal development assessment procedures within the EP&A Act. An assessment report and recommendations will then be provided to the JRPP for determination. Council will also carry out post-determination functions including issuing any consent, notification, application and management of developer contributions, certification and management of any potential appeals that may occur out of the determination process.

The IDAP was established in May 2010 to provide an independent hearing forum for objectors and applicants on certain DAs. The DAs to be referred to the IDAP will be determined by Council. The IDAP panel will provide an independent assessment of particular DAs and submit recommendations to Council for a decision. Its purpose is to:

1. provide increased transparency, integrity and confidence in the DA assessment process
2. provide an independent hearing forum for objectors and applicants with an increased participation in the determination process
3. assess applications in a manner that is ethical, professional and independent of Council.

If the DA is approved, it will usually be subject to conditions that must be complied with.

If the DA approval involves construction (including works associated with land subdivision), a Construction Certificate will be needed prior to doing any work on site. This will usually involve the proponent preparing detailed engineering plans and specifications.

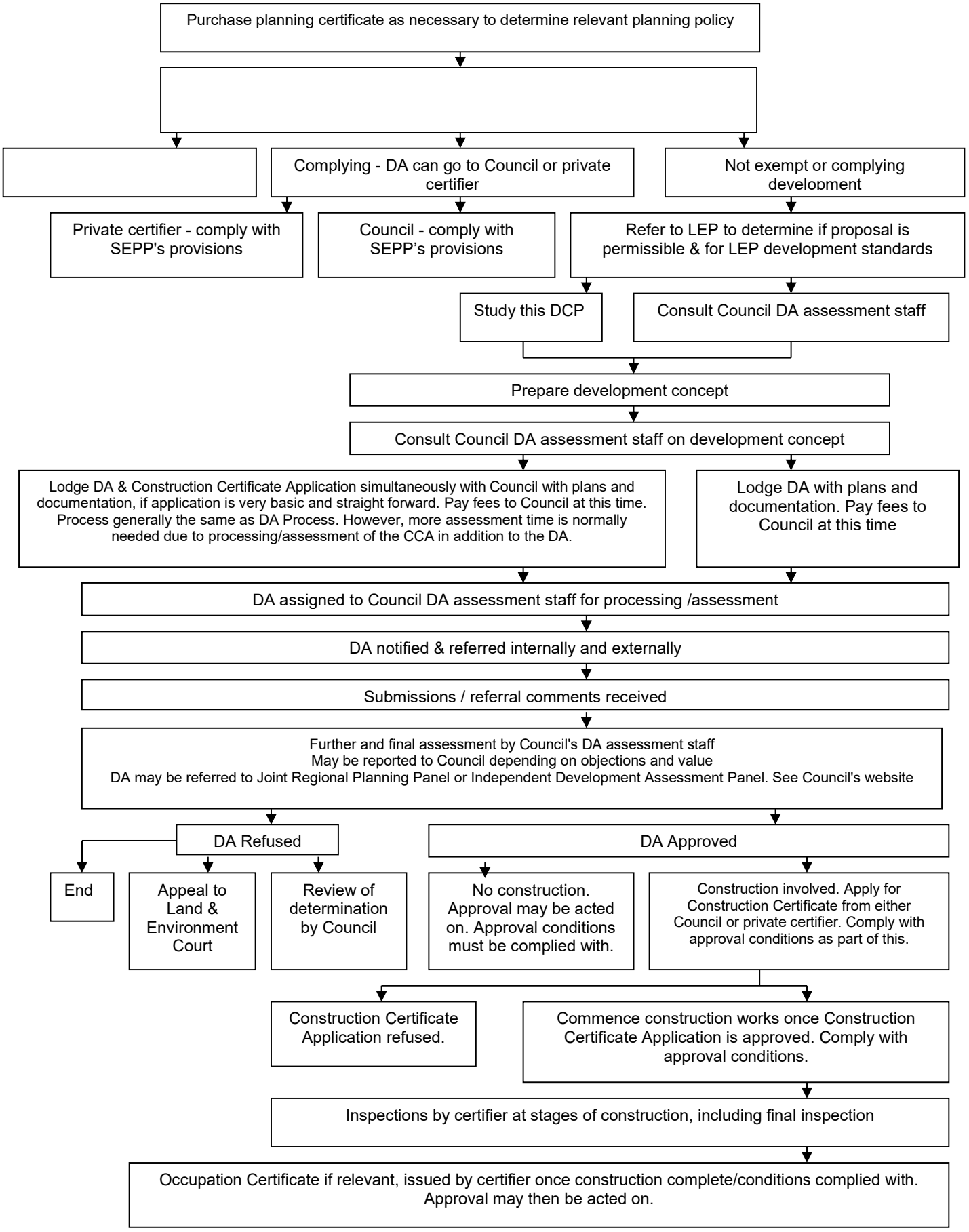
Either Council or a private certifier can process and determine a Construction Certificate application.

The Construction Certificate application process will involve certification/inspections at certain stages of construction. This includes an Occupation Certificate (or Subdivision Certificate in the case of a land subdivision) once work is completed in accordance with any development consent conditions. If the DA is refused, reasons will be stated.

Section 96 of the EP&A Act provides for an existing development consent to be modified. The proposed modification (in the application to modify) must be substantially the same as the original development consent. If the modifications are not substantially the same, a new DA will be required.

A flow chart of the development assessment process is shown in the following **Figure 2.1**.

Figure 2.1 - Flow chart of the development process



2.4 – Development Contributions

The EP&A Act sets the statutory framework under which Council can obtain contributions from new development toward funding the cost of additional public infrastructure required as a result of this growth.

Council levies new development under Section 94 of the EP&A Act in accordance with its Section 94 Contributions Plan and may also enter into a Planning Agreement with a developer under Section 93F of the EP&A Act.

Further information, including a full copy of the current Section 94 Contributions Plan and indexed contribution rates, is available on Council's website.

2.5 - Variations to development provisions

Council may grant development consent to a proposal that does not comply with the development provisions of this DCP. Any variation will be assessed on its merits. Where a proposal does not comply, a written statement within the Statement of Environmental Effects must be provided requesting a variation to the development provisions. The statement must demonstrate:

- how the specific objectives of the provisions are still achieved with the variation
- how compliance with the provisions without a variation is unreasonable or unnecessary in the circumstances
- how the variation will not impact on neighbourhood amenity
- how the variation will still ensure the proposed development will not unreasonably impact or impede the natural and built environment.

2.6 - Trial periods for development approvals for use of land or buildings

Objectives

1. To ensure the impact of land uses that have the potential to adversely impact on surrounding land uses can be re-assessed after development approval has been granted.
2. To ensure the nature and extent of the impact is able to be properly managed during the ongoing operation and management of the development and/or use.

ADVICE

2.6.1 In the event that Council proposes to grant development consent for a use of premises and/or land, where in the opinion of Council is likely to have an adverse impact on surrounding land uses, Council may include as a condition of consent a trial period, for a maximum of 12 months from the date of the issue of the Occupation Certificate.

NOTE: An application for the removal of the trial period condition should be lodged no less than 60 days before the expiry of the trial period. In determining an application to remove the trial period condition, Council will have regard to the operation of the use within the preceding trial period and any submission received of the application (if required)

PART 2 - PROVISIONS FOR SPECIFIC USES OF LAND

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 3 - RESIDENTIAL DEVELOPMENT

NOTE: If no subdivision is proposed as part of any development involving more than one dwelling, consideration should be given at the design stage to development of the site in a way that may allow subdivision at a later stage (e.g. allowing adequate vehicular access and boundary setbacks etc.).

Introduction

This chapter provides provisions for single dwellings, dual occupancy, secondary dwellings, multi dwellings houses, residential flat buildings and shop top housing developments

This Chapter also has additional provisions specific to the following areas:

- Albion Park Rail, Shearwater Boulevarde
- Barrack Point Shell Cove Road, Shellharbour Road and Junction Road
- Blackbutt, Springdale Close and Dunsters Lane
- Oak Flats , The Boulevard
- Warilla, Little Lake Crescent
- Shell Cove
- Shell Cove Development Stages 6 and 6F
- Land adjoining Albion Park Town Centre
- Shellharbour City Centre
- Shellharbour, Shellharbour Road (School site)
- Residential Development in non-urban areas

3.1 – Building height

Control of building height is an important aspect in the built environment and can influence whether a building is in harmony with other buildings in the neighbourhood. Building height is also an important consideration because of its potential effect on sunlight access, levels of privacy and its influence on building bulk and compatibility with the existing built environment.

Shellharbour LEP 2013 contains building height requirements through its:

- definition of building height
- clause 4.3 which refers to the LEP's height of building map
- clause 5.6 which provides for any architectural roof features to exceed the height limit in clause 4.3.

Objective

1. To supplement the height provisions in LEP 2013 by encouraging pitched and articulated roofs of various optional designs for residential development.

ADVICE

3.1.1 Residential buildings with LEP 2013 height limit of 9 metres will be limited to 2 storeys with a 7 metre wall height for walls with corresponding hipped roofs. Buildings/walls with other corresponding roof forms such as gabled, skillion, butterfly, half hipped, half gabled will also be limited to 2 storeys, with the wall height being merit based. See **Figures 3.1 – 3.6** below for types of roof forms.

3.1.2 Any parapet or parapeted gable needs to be within LEP 2013 height limit unless it can be demonstrated it meets LEP 2013 criteria for an architectural roof feature.

Figure 3.1 - Hipped roof



Figure 3.2 - sections of skillion roofing



Figure 3.3 - Half hipped roof

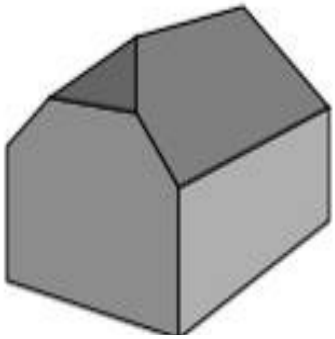


Figure 3.4 - Half gabled roof



Figure 3.5 - Gabled roof



Figure 3.6 - Butterfly roof



3.2 - Building lines and boundary setbacks

This section provides building lines and boundary setbacks for the following types of development across the LGA.

- **Single storey components of a single dwelling, dual occupancy or multi dwelling housing development**
- **Second storey component of a single dwelling or a dual occupancy**
- **Garages**
- **Ancillary structures**
- **Dwellings adjoining classified roads, public reserves, rail lines, lakes or oceans**
- **Swimming pools**

Objectives

1. To ensure that the siting of buildings provides adequate separation for the amenity of residents and adjoining properties.
2. To provide adequate solar access, visual privacy and appropriate building bulk.
3. To provide setbacks that reinforce the established streetscape pattern and to allow for landscaping and open space to enhance the streetscape.
4. To ensure new development is located to protect the amenity and appearance of water front lands.
5. To reduce the likelihood of any risk from coastal processes, such as erosion or embankment instability.
6. To maximise amenity and minimise noise impacts for residents from busy roads and / or railway corridors.
7. To provide appropriate pedestrian access from the rear of a property to the road reserve/carriage way.

ADVICE

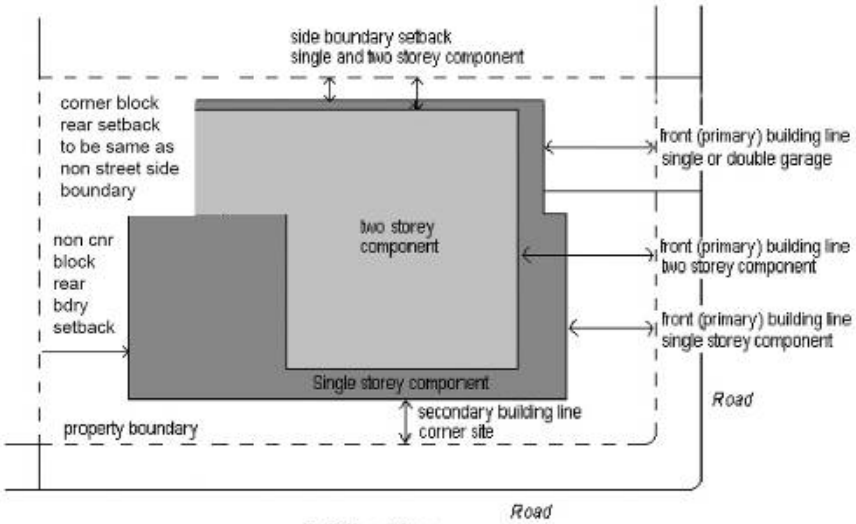
3.2.1 All building structures must be set back to or behind the prescribed minimum building lines outlined in the following tables:

Table 3.1: Front building lines
Table 3.2: Secondary building lines (other street frontage for corner sites)
Table 3.3: Boundary setbacks
Table 3.4: Rear building lines
Table 3.5: Varied building lines – Shell Cove Road, Barrack Point
Table 3.6: Varied building lines – Little Lake Crescent, Warilla

NOTE: Actual building setbacks may need to be greater to comply with other provisions of this DCP.

Definitions of Building Line terms are shown in the **Figure 3.7** below.

Figure 3.7 - Building lines and boundary setbacks for a single dwelling on a traditional lot and a corner lot



Corner lots

3.2.2 On corner sites, the rear boundary and the non-street side boundary will both be treated as a side boundary for setback purposes.

Two road frontages

3.2.3 Where a lot has two road frontages, or has a road and lane frontage, and is not a corner allotment, the primary road frontage will generally be the dominant road.

Building line or setback measurement

3.2.4 Building line or setback means the horizontal distance between the property boundary or other stated boundary and the building wall, or the outside face of any balcony, deck, or the like, or the supporting posts of a carport or verandah roof, whichever distance is the shortest.

Privacy and solar access

3.2.5 In particular circumstances, boundary setbacks may have to be increased in order to achieve other objectives in this DCP, for example, protecting privacy and solar access to adjoining properties.

Easements

3.2.6 No part of any structure including footings and eaves overhang must encroach onto any transmission line easement or Council drainage easement without approval from the consent authority.

Residential flat buildings and shop top housing

3.2.7 Front setbacks for residential flat buildings and shop-top housing must be in accordance with the provisions contained in the Streetscape and Design Sections in this Chapter.

3.2.8 Side and rear setbacks for residential flat buildings and the residential component of shop top housing developments will be assessed on merit. Due consideration must be given to streetscape, solar access, privacy, BCA, and the like in determining appropriate setbacks for residential flat buildings and the residential component of mixed-use developments.

Table 3.1 - front (primary) building line

Category	Primary building line	Special considerations
Single storey component of a single dwelling, dual occupancy and multi-dwelling housing	4.5 metres	Access ramps, eaves and gutters, steps and landings, bay windows, open structures such as pergolas, verandahs, awnings, sunblinds, decks, balconies and porticos inclusive of associated eaves and gutters may encroach into the front building line by a maximum of 1.0 metre, provided the structure does not detrimentally affect the amenity of the neighbouring residents or streetscape.
2 storey component of a single dwelling, dual occupancy or multi-dwelling housing	6.0 metres	Awnings, decks, and balconies and associated eaves and gutter may encroach into the front building line by up to 1.0 metres provided that the structure does not detrimentally affect the amenity of the neighbouring residents or the streetscape, and the setbacks are not out of character with adjoining development.
Garages	5.0 metres	Where no stack parking is proposed.
Garage with a stack car parking space in front of the garage	5.5 metres	See **Chapter 13** on parking, traffic and transport for additional details.
Open Carports	5.0 metres	Consideration may be given to a single carport encroaching into the front building line by up to 1 metre only if: • the setback is not out of character with adjoining development, and • the design of the carport is integrated into the dwelling design, and • the carport provides the second required car space on the allotment. A carport that is forward of the 5.0m building line is not permitted to be enclosed by garage doors, or similar enclosure at any time.

Category	Primary building line	Special considerations
Ancillary structures such as garden sheds, water tanks, swimming pools	Be located behind the adopted building line	In-ground swimming pools may encroach into the front building line to 2 metres from the front boundary providing the swimming pool and fencing objectives and development advice/controls of this DCP and are satisfied, in addition to the building line objectives.
Dwellings adjoining a classified road	Site Specific Acoustic Report. Refer to **Chapter 31** on Acoustic protection.	Specific design consideration for habitable rooms and building orientation, as well as the use of materials to mitigate noise and vibrations, may be required in dwellings that adjoin a busy road. Notwithstanding the acoustic report recommended building lines, the minimum building lines for a dwelling and garage/carport must not be less than the above prescribed building lines. The design building setbacks must satisfy the manoeuvring requirements for sites that have frontage to a main or arterial road. All vehicles entering and leaving the site must do so in a forward direction. Refer **Chapter 13** on parking, traffic and transport.
Garages at Shell Cove (Stage 6F lots 6321 - 6327)	3.0 metres	Garages may be located here due to the sloping nature of the lots and the single sided nature of the road. Garages must also be located towards the south side of the lot.

Table 3.2 - secondary building lines (for corner lots)

Category	Secondary building line	Special considerations
Single storey component of a single dwelling, dual occupancy and multi-dwelling housing	2.4 metres	Access ramps, eaves and gutters, steps and landings, bay windows, open structures such as pergolas, verandahs, awnings, sunblinds, porticos, decks, balconies inclusive of associated eaves and gutters may encroach into the secondary building line by a maximum of 1.0 metre, provided the structure does not detrimentally affect the amenity of the neighbouring residents or streetscape.
2 storey component of a single dwelling and dual occupancy	2.4 metres	Awnings, decks and balconies and associated eaves and gutters may encroach into the front building line by up to 1.0 metre provided that the structure does not detrimentally affect the amenity of the neighbouring residents or the streetscape, and the setbacks are not out of character with adjoining development.
2 storey component of a dwelling in a multi-dwelling housing development	4.0 metres	Awnings, decks, and balconies and associated eaves and gutters may encroach into the front building line by up to 1.0 metre provided that the structure does not detrimentally affect the amenity of the neighbouring residents or the streetscape, and the setbacks are not out of character with adjoining development.
Garages	5.0 metres	Where stack parking is not proposed.
Garage with stack car parking in front of the garage	5.5 metres	See **Chapter 13** on parking, traffic and transport for additional details.
Open Carports	5.0 metres	Consideration may be given to a single carport, inclusive of roofing, eaves and gutters, encroaching into the front building line by up to 1.0 metre only if: a. the setback is not out of character with adjoining development, and b. the design of the carport complements the character of the dwelling, and c. the carport provides the second required car space on the allotment. A carport that is forward of the 5.0m building line is not permitted to be enclosed by garage doors, or similar enclosure, at any time.
Ancillary structures such as garden sheds, water tanks, swimming pools	Be located behind the adopted building line.	Where the secondary road frontage provides the rear yard, an in-ground swimming pool may encroach into the secondary building line to 1.5 metres from the boundary providing the swimming pool and fencing objectives and development advice/controls of this DCP are satisfied, in addition to the building line objectives.

Table 3.3 - side boundary setbacks

Category	Minimum side boundaries	Special considerations
Single storey component of dwellings	900mm from the outer wall	Where there is no garage or carport proposed as part of the dwelling, a minimum side boundary setback of 2.7m must be provided to enable vehicular access to the rear or side of the lot, except where it can be demonstrated that vehicular access to the rear of the lot can be provided from an adjoining street (corner lot), rear lane or right-of-carriageway access OR a future carport/garage can be provided behind the building line.
Two storey component of dwellings	1200mm from the outer wall	Council may allow a lesser side setback where first floor additions are proposed on existing walls of single storey dwellings. Any side setback less than 1200mm must comply with the BCA and must not create any adverse impacts to adjoining properties and/or the streetscape.
Single dwellings, detached dual occupancy and Multi dwelling housing developments	Zero lot lines can be considered between dwellings within a development site where the proposed Torrens title lots have a width less than 15 metres. (width measured at the building façade line)	The building component on the zero lot line must be single storey. Any second storey must be setback a minimum 900mm. The length of zero lot line on the boundary must not exceed 11m where the lot width is 12m and less, and 7m (garage only) where a lot width is between 12.1m and 15m. It must be demonstrated that the use of zero lot line setbacks will not adversely affect the privacy, amenity and solar access of an adjoining property and the streetscape objectives of this Section. An easement for maintenance of the zero lot line wall (and any services along the side of the dwelling) must be provided on the adjoining property. No overhanging eaves or services will be permitted within the easement. The easement must be submitted to Council's satisfaction on the site and subdivision plan. External access must be provided from the street to the rear open space of the dwelling either along one side of the dwelling or from a rear lane.
Carports, pergolas, outbuildings and detached garages less than 900mm from a dwelling	900mm	Structures located less than 900mm from a dwelling are considered to be part of the dwelling in terms of fire protection in the Building Code of Australia (BCA). Variations may be considered where neighbouring amenity, on-going maintenance and the requirements of the BCA are satisfactorily addressed. Compliance with the BCA is not the only criteria for accepting a variation. Applicant must demonstrate exceptional site circumstances.
Carports, pergolas, outbuildings and detached garages	500mm	The 500mm setback is required to protect the amenity of neighbouring development and enable on-going maintenance of a structure.

Category	Minimum side boundaries	Special considerations
greater than 900mm from a dwelling		Roofing and associated eaves and gutters may encroach into the boundary setback by up to 100mm provided the amenity of neighbouring residents is not compromised.
Swimming Pools	900mm to the edge of the water or decking/coping whichever is closer	Swimming pools must comply with the requirements of **Section 3.11 of this DCP** Swimming pools and spas. Where a pool deck above ground level is proposed, increased side setbacks may be required in order to minimise overlooking into adjoining properties.

Table 3.4 - rear building lines

Category	Rear building setback	Special considerations / Notes
Single dwellings, dual occupancy and multi dwelling housing developments	Ground floor – 3.0 metres First floor – 6.0 metres	Single storey component can encroach into the rear boundary setback for maximum length of 8m, with a minimum rear boundary setback of 900mm. Refer headings Building line or setback measurement in this Section and privacy and solar access provisions in this Chapter.
Carports, pergolas, outbuildings and detached garages greater than 900mm from a dwelling	500 mm	
Carports, pergolas, outbuildings and detached garages less than 900mm from a dwelling	900mm	Structures located less than 900mm from a dwelling are considered to be part of the dwelling in terms of fire protection in the BCA. Variations may be considered where neighbouring amenity, on-going maintenance and the requirements of the BCA are satisfactorily addressed.
Swimming Pools	900mm to the edge of the water or decking/coping whichever is closer.	Swimming pools must comply with the requirements of **Section 3.11** of this DCP, Swimming Pools and Spas
All dwellings and ancillary structures adjoining a public reserve	2.4 metres Intent - To maintain amenity of open spaces	Ancillary development that is not visible above the public reserve boundary fence, such as an in ground pool, may encroach into the building line provided the amenity of the public reserve is not detrimentally affected.
All dwellings and structures directly adjoining a lake or ocean	10 metres Intent - To maintain access to views	
Dwellings that directly abutt a rail line	Rear building line/s as per Site Specific Acoustic / Vibration Report. Refer to **Chapter 31** on Acoustic protection.	Specific design consideration for habitable rooms and building orientation, as well as the use of materials to mitigate noise and vibrations, may be required in dwellings that adjoin a rail corridor.
Shellharbour Road Barrack Point Lot 1-5 SP 32879 (No. 1-5 / 275)	36 metres and parallel to Shellharbour Road Measured from the street front alignment	Intent - To provide a buffer from the sewerage treatment plant Historical Reference R.B.L 85/1
Springdale Close Blackbutt Lots 1-9 SP 35423	10 metres Measured from the rear boundary	Intent - To ensure development is compatible with the existing landform, in view of the high visibility of the site from both the Princes

Category	Rear building setback	Special considerations / Notes
(No's 1-9 Springdale Close)		Highway and the main South Coast Railway line. Historical Reference DCP 1/89
Dunsters Lane, Blackbutt Lot 10 SP 35423 (No. 2 Dunsters Lane)	10 metres Measured from the rear boundary	Intent - To ensure development is compatible with the existing landform, in view of the high visibility of the site from both the Princes Highway and the main South Coast Railway line. Historical Reference DCP 1/89
Shearwater Boulevarde Albion Park Rail Lots 101-115 DP 831222 (No's 2-30 (even numbers only)) Lots 222-228 DP 844852 (No's 32-44 (even numbers only))	10 metres Measured from the rear boundary 5 metres Measured from the rear boundary	Intent - To provide a wetland buffer Historical Reference DA 147/1991
The Boulevarde Oak Flats No's 81-161 (odd numbers only) Lots 17-22 & 24-28 DP 70954 Lots 1-8, 14-15, 17-23, 29, 34-40 Sec A DP 13638 Lot 101 DP 563774 Lot 1 DP 238348 Lots 201 & 202 DP 1081452 Lot 31 DP 651011 Lots 160 & 161 DP 838917 Lot 1 DP 137041	76.2 metres Measured from the street front boundary alignment	Intent - To provide a setback from Lake Illawarra Historical Reference: Location of Oak Flats cycleway
Junction Road Barrack Point	Measured from the street front boundary alignment	Intent – To maintain access to views Historical Reference B.L 88/1
Lot 2 DP 501506 (No. 23)	108.0 metres north boundary 106.0 metres along boundary with and perpendicular to No. 21 94.5 south boundary	

Category	Rear building setback	Special considerations / Notes
Lot 2 DP 793946 (No. 25A)	94.5 metres north boundary 83.0 south boundary	
Lot 2 DP 793470 (No. 27A)	83.0 metres north boundary 71.5 metres south boundary	
Lots 1 & 2 DP 830251 (No. 29A)	71.5 metres north boundary 60.5 metres south boundary	
Lot 64 DP 15868 (No. 31)	58.236 metres	
Lot 65 DP 15868 (No. 33)	56.111 metres	
SP 30122 (No. 35)	53.95 metres	
Lot 67 DP 15868 (No. 37)	51.767 metres	
Lot 68 DP 15868 (No. 39)	49.590 metres	
Lot 69 DP 15868 (No. 41)	47.413 metres	
Lot 70 DP 15868 (No. 43)	45.238 metres	
Lot 71 DP 15868 (No. 45)	43.061 metres	
Lot 72 DP 15868 (No. 47)	40.883 north boundary 38.710 south boundary	
Shell Cove - Stage 6 adjacent to golf course Single storey component of dwelling 2 storey component of dwelling	6 metres 8 metres	

ADVICE

Shell Cove Road, Barrack Point building lines
(Lot 2, DP 206361 and Lots 34 – 53, DP 15868, No's. 4 – 44 Shell Cove Road, Barrack Point)

3.2.9 The only type of development that may be considered over an embankment area (that part of the land between the rear property boundary and the crest of the embankment) is terracing with each terrace wall less than 1.0 metre in height. Terracing involves the stepping of the embankment without importing any fill material. Any work entailing filling requires consent. Any application for terracing of the embankment must be accompanied by a geotechnical assessment from a suitably qualified and experienced civil or structural engineer in coastal processes/hazards and address:

a. the existing stability of the subject allotment and the embankment or locality in general

b. the effect of the development proposal on the stability of the allotment, on any adjoining properties and on the embankment or locality in general

c. the effect of any existing or proposed stormwater and/or ground water drainage on the stability of the allotment.

3.2.10 **Table 3.5** below indicates the preferred location of future main building extensions and redevelopment. Where the proposal encroaches outside the main building areas, it must be demonstrated to Council that the intent of this Section will not be jeopardised in order for consent to be granted to dwellings outside the preferred building envelope.

NOTE: The consent authority may require building envelopes. A geotechnical assessment may need to be carried out for proposed developments over the main building area if the proposal is considered at risk from embankment failure/instability.

3.2.11 **Table 3.5** below identifies an ancillary area which is intended to form a buffer between the eastern most extent of main buildings and the restricted development area comprising of the embankment. The permissible uses of land over this area are ancillary to the use of a normal residential land parcel. Permissible types of development include:

- swimming pools
- pergolas
- garden sheds (having the approximate proportions 3 metres (length) x 3 metres (width) x 2 metres (height) with a total area not exceeding 9m2
- decks.

3.2.12 Developments over the ancillary building area must not compromise view sharing of neighbouring areas.

NOTE: Council retains a discretionary power to require a geotechnical assessment to be carried out for proposed developments over the "ancillary building area" if in the opinion of Council, the proposal may be at risk from embankment failure/instability.

NOTE: Plans prepared for development on land on which this advice applies must show:

- the location of the embankment area and specify the types and standard of work and land improvements that may be carried out over this area
- the main building area or building envelope of future dwelling extensions and redevelopment
- the area between the crest of the embankment referred to above and the eastern most extremity of the main building envelope referred to above, for the preferred location of ancillary residential developments.

Table 3.5 - Building areas for Shell Cove Road, Barrack Point

Property address No's 4 - 44 Shell Cove Road Barrack Point	Main Building Area (Distance from front property boundary to the eastern most point of the building envelope)		Ancillary Building Area (Distance from extent of main building envelope to the crest of the embankment)	
	Southern Boundary	Northern Boundary	Southern Boundary	Northern Boundary
Lot 2 DP206361 (No. 4)	50.0m	49.0m	11.0m	8.5.
Lot 53 DP15868 (No. 6)	49.0m	40.2m	8.5m	6.0m
Lot 52 DP15868 (No. 8)	40.2m	24.4m	6.0m	5.5m
Lot 51 DP15868 (No. 10)	30.4m	27.5m	5.0m	8.0m
Lot 50 DP15868 (No. 12)	27.5m	25.8m	8.0m	5.5m
Lot 49 DP15868 (No. 14)	25.8m	24.4m	5.5m	4.5m
Lot 48 DP15868 (No. 16)	24.4m	27.0m	4.5m	4.0m
Lot 47 DP15868 (No. 18)	27.0m	23.8m	4.0m	7.0m
Lot 46 DP15868 (No. 20)	26.8m	23.5m	4.0m	6.5m
Lot 45 DP15868 (No. 22)	25.6m	25.0m	4.5m	6.5m
Lot 44 DP15868 (No. 24)	28.6m	25.4m	3.0m	5.5m
Lot 43 DP15868 (No. 26)	30.5m	22.0m	1.0m	14.0m
Lot 42 DP15868 (No. 28)	31.6m	31.8m	4.5m	14.0m
Lot 41 DP15868 (No. 30)	39.0m	35.7m	7.0m	11.5m
Lot 40 DP15868 (No. 32)	40.5m	36.1m	7.0m	10.5m

Lot 39 DP15868 (No. 34)	40.5m	32.-m	6.5m	8.0m
Lot 38 DP15868 (No. 36)	35.5m	27.6m	4.0m	10.5m
SP 79772 (No. 38)	31.0m	28.9m	6.5m	12.5m
Lots 1 & 2 DP1112284 (No's 40 & 40A	34.7m	32.3m	6.5m	14.5m
Lot 35 DP15868 (No. 42)	39.8m	40.3m	12.0m	15.5m
Lot 34 DP15868 (No. 44)	49.0m	49.4m	7.0m	16.0m

Historical Reference DCP6/93 Intent – To maintain access to views, geotechnical stability.

ADVICE

Little Lake Crescent, Warilla building lines
(Lot 67, DP 238866 and Lots 9-11 & Lots 39-66, DP 23239 and Lots A, B, C, DP 406934, No's 17 – 123 Little Lake Crescent, Warilla [odd numbers only])

3.2.13 The following **Table 3.6** prescribes the required rear building lines and the line of low hazard for the subject properties.

3.2.14 An encroachment into the rear building line of upper level open structures by a maximum of 1 metre may be considered. Such structures must be light weight or point encroachments, must not exceed 50% of the dwelling width, as measured at the building façade line, and must not detrimentally affect the amenity, including view sharing, of the neighbouring properties or the beachscape. An encroachment of ground level building into the rear building line is not permitted.

3.2.15 The line of low hazard is based on the 2% Annual Exceedance Probability Storm, eroded pre-storm sub-aerial beach as identified in the Warilla Beach Coastal Hazards Assessment Study (Australian Water and Coastal Studies Pty Ltd - Report No. 91/07 - December 1991). This line has been modified to take into account the potential for rapid beach readjustments in areas where the low hazard line is within 20 metres of the rear property boundaries.

3.2.16 A registered surveyor will be required to certify the location of existing and proposed structures in the vicinity of the low hazard risk zone relative to the rear boundary, the rear building line and the line of low hazard as defined in **Table 3.6** below.

NOTE: Plans prepared for development on land to which this Section applies must show:

- **the rear building line**
- **the line of low hazard.**

NOTE: The following advice is based on the risks identified in Warilla Beach Coastal Hazards Assessment Study. The advice identified in this Section may not need to operated permanently, but Council will only reconsider the advice if protection has been provided to significantly reduce the risk of coastal hazards.

3.2.17 For major proposals, those involving new, reconstructed or replacement dwellings and major extensions, the detailed design information must be provided by a suitably qualified and experienced engineer specifying the foundation system. Design calculations must be submitted verifying that the foundation system allows for the following criteria:

a. a design beach scour level of RL minus 1.0 m (-1.0) Australian Height Datum

b. reduced foundation support caused by post-erosion slumping

c. no allowance need be made for wave impact loadings.

NOTE: If Council has concerns about the design, Council may refer the information to an independent, suitably qualified and experienced engineer for assessment at the applicant's expense.

3.2.18 Any new, reconstructed or replacement dwellings and major additions between the Line of Low Hazard and the Rear Building Line will be supported by an engineering foundation system, to engineer specifications. A suspended floor supported by piled foundations is preferred.

3.2.19 For minor proposals involving extensions, additions and garages, the following applies:

a. Where the proposed extension, addition or garage is closer to the beach than the existing house, plans must show details as to how the new work can collapse or break away from the existing house without causing significant structural damage to the existing house.

b. Extensions, additions and garages up to a cumulative total floor area of 25 square metres and located between the Line of Low Hazard and the Rear Building Line may not need to have a suspended floor supported on piles if:

i. the extension, addition or garage is not located any closer to Warilla Beach than a portion of the existing house

ii. the extension, addition or garage is located closer to Warilla Beach than the existing house but is designed to collapse or break away from the existing house if undermined without causing significant structural damage to the main house.

NOTE: Council cannot guarantee that compliance with the Section will eliminate all risk from coastal hazard.

Table 3.6 - Table for Little Lake Crescent, Warilla Beach building lines

Property address No's 17-123 Little Lake Crescent Warilla Beach	Rear Building Line (distance from the rear boundary)	Line of Low Hazard (distance from the rear boundary)
Lot 67 DP 238866 (No. 17)	6 metres	7 metres
Lots 9,10,11 & 66 DP 21893 (No's 19-25)	10 metres	12.5 metres
Lots 58-65 DP 21893 (No's 27-41)	10 metres	13 metres
Lot 56 & 57 DP 21893 (No's 43 & 45)	10 metres	12 metres
Lot 55 DP 21893 (No. 47)	10 metres	13 metres
Lot 54 DP 21893 (No. 49)	10 metres	14 metres
Lot 53 DP 21893 (No. 51)	10 metres	15 metres
Lot 52 DP 21893 (No. 53)	10 metres	16 metres
Lot 51 DP 21893 (No. 55)	10 metres	17 metres
Lot 50 DP 21893 (No. 57)	10 metres	18 metres
Lots 28-44 DP 23239 & Lots 39-49 DP 21893 (No's 59- 113)	10 metres	20 metres
Lot A DP 406934 (No. 115)	10 metres	19 metres
Lot B DP 406934 (No. 117)	10 metres	15 metres
Lot C DP 406934 (Lot 119)	10 metres	10 metres
Lot 24 DP 23239 (No. 121) (a decrease to 6 metres may be considered where supported by a geotechnical report)	10 metres	10 metres
Lot 23 DP 23239 (No. 123)	6 metres	6 metres

3.3 - Streetscape and design for dwellings, dual occupancy and multi dwelling developments

Objectives

1. To ensure that buildings are designed to enhance the existing built form and character of the neighbourhood by encouraging innovative, quality designs that fit harmoniously with their surroundings,
2. To create an attractive and cohesive streetscape through the provision of simple and articulated building and roof forms,
3. To ensure development addresses the street frontage and that any overshadowing, bulk and scale respects and complements the surrounding locality,
4. To ensure that garages, car parking areas and driveways are integrated into the overall development design and do not dominate the streetscape,
5. To ensure development on steeper slopes is designed to suit the contours of the land.
6. To minimise visual impact associated with excessive cut and fill.

ADVICE

Front facades

3.3.1 Development must address the primary street frontage, with at least one door and one habitable room window, fronting the street. In this respect, windows for rooms such as the WC, bathroom or laundry should not be the dominant feature or window on the front façade. Where such windows are necessary, they must be similarly proportioned to other windows on the façade.

3.3.2 The incorporation of building elements which contribute to attractive streetscapes including front entry porches, porticos, verandahs, upper level balconies and other elements to articulate the building mass is required. These may protrude into the front and secondary setback area by a maximum of 1.0m but together must not exceed 50% of the total width of the building.

3.3.3 Verandah or roofed entry porches must be provided to the front elevation of dwellings to provide articulation to the building mass and clearly defined building entry porches should be visually prominent. Deeply recessed porches, and / or entry locations where the entry door is not directly visible from the street front are not acceptable. For two storey dwellings this area may include first floor structures.

3.3.4 At least 1m wide planting beds and/or lawn must be provided between driveways and side boundaries.

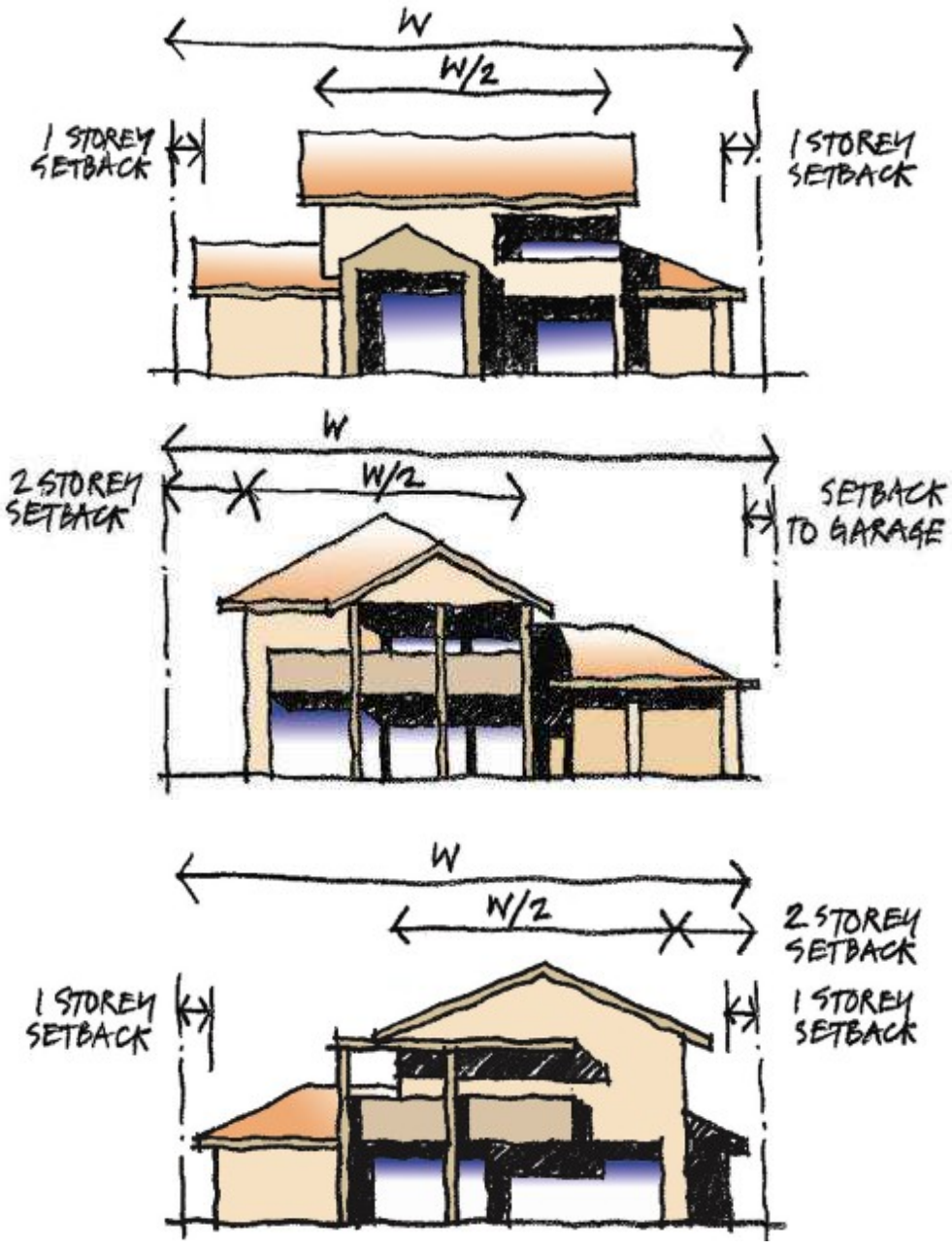
Roof design

3.3.5 Roofs should be designed using a series of smaller roof forms and variations in roof pitch. Where roofs are pitched, there should be a minimum roof pitch of 24 degrees ranging up to a maximum of 40%.

3.3.6 Eaves of a minimum 450mm must be provided, with possible exceptions being flat roofed structures, elevations not visible from the street or where other appropriate articulation is demonstrated.

3.3.7 Roof articulation and contrast in design through the use of moulding, banding or colour contrast is encouraged as per the **Figure 3.8** below:

Figure 3.8 - 3 diagrams showing roof articulation and design contrast



Corner lots

3.3.8 On corner sites the building design must also address the secondary street frontage through the use of habitable room windows, articulated roof, and the like.

Steep blocks

3.3.9 Cross slope should be no more than 5% on proposed lots. Where this cannot be achieved it must be demonstrated that the development can meet the objectives of this DCP related to cut, fill and retaining walls.

3.3.10 Single storey and split level dwellings must be designed specifically for steep land.

3.3.11 Buildings are to be sited and designed to take into account the slope of the land to:

a. minimise the visual bulk of the development, particularly when viewed from down slope

b. minimise the need for cut and fill by designs which minimise the building footprint and allow the building mass to step down the slope

c. minimise the impact of development on the privacy of adjoining land.

3.3.12 Cut and fill must be minimised through:

a. siting the house along the contours

b. split level design of dwellings

c. elevated slab with decks rather than fill

d. batters or small stepped retaining walls, rather than single large retaining walls

e. landscaped terraces

f. significant changes in building height between existing dwellings and new development must be stepped.

Garages and carports

3.3.13 Garages must not dominate the street frontage. At least one dwelling door and one or two habitable room windows must face the front or secondary boundary.

3.3.14 For up to 2 garages (attached or detached) with garage doors facing a public road the front wall of the garage:

a. must not be forward of the residential component of the building by more than 2 metres (as measured from the external wall of the dwelling). This does not apply to encroachments of open structures into the front building line.

b. must have garage doors with a width not exceeding more than 50% of the overall width of the side of the dwelling that contains the garage doors.

3.3.15 For more than 2 garages (attached or detached):

a. the front wall of the garage must be no further forward than the dwelling, and

b. the combined width of the garage doors must not exceed more than 50% of the overall width of the side of the dwelling that contains the garage doors, unless the garage is set back a minimum of 1 metre behind the dwelling, and

c. the front wall and roof line of the third or any subsequent garage is to be set back at least 1 metre behind the other two garages.

3.3.16 For garages (attached or detached) with garage doors not directly facing a public road attention must be given to design detail to ensure the garage complements and blends with the design of the dwelling, by design elements, such as articulation, windows, roof features, etc.

3.3.17 Carports must be designed to integrate with the overall development.

3.3.18 For single storey dwellings and all dual occupancies, the total garage door width for both dwellings must not exceed 50% of the overall width of the development.

3.3.19 Attached garages and carport ports must be integrated into the main building mass. Detached garages and carports with a similar roof form to that of the main house are encouraged.

Dual occupancy – streetscape and design

3.3.20 Exact mirror-imaging of dwelling facades to form dual occupancy housing is not permitted. However, similar building footprints are permitted where each dwelling has a different front façade and roof form and where the overall design of the dual occupancy is appropriate in the streetscape.

3.3.21 Where an attached dual occupancy is proposed, dwellings must be easily differentiated from one another through differentiated floor layouts and roof profiles.

3.3.22 Where a dual occupancy is proposed on a corner allotment, each dwelling must have frontage to a different street, including vehicular access.

3.3.23 For infill dual occupancy on traditional lots where the existing dwelling is a single storey dwelling, the second dwelling at the rear must also be single storey unless it can be demonstrated that the second dwelling will not dominate the existing development and streetscape.

3.3.24 The repetition of identical housing designs in a group of dwellings, other than for terrace housing and the like, will not be permitted.

Secondary dwellings – streetscape and design

3.3.25 Secondary dwellings that are attached to the principal dwelling are to be integrated with the design, colour and materials of the principal dwelling.

Multi-dwelling housing – streetscape and design

3.3.26 For multi dwelling housing, the maximum unbroken length of wall must not exceed 33% of the length of the corresponding property boundary. The maximum unbroken length of wall requirement does not apply to the narrow frontage of corner allotments. The length of wall on such frontages will be assessed on merit. Appropriate staggering (minimum depth of 960mm) of buildings is required where a wall of a building exceeds the maximum length.

3.3.27 All driveways that extend beyond the building line setback towards the rear of the site must be paved with materials, finishes and textures that assist to break up the dominant paving material. The use of uncoloured plain concrete as the dominant paving material is not acceptable.

3.3.28 Driveways or access ways that extend beyond the building line and/or service more than one dwelling must have a landscape bed with a minimum width of 1 metre provided between driveways and side boundary, and between the driveway and dwellings with a minimum width 500mm to ensure adequate visual relief and to avoid the visual impact of large areas of paving.

3.3.29 At least 33% of the area between the front property boundary and the adopted building line must be landscaped in the form of garden beds with intensive tree and shrub planting.

3.4 - Streetscape and design for shop top housing and residential flat buildings in the R3 Medium Density Zone.

NOTE: regarding this section, State Environmental Planning Policy 65 – Design Quality of Residential Apartment Development (SEPP 65) and its associated Apartment Design Guide (ADG), applies to residential flat buildings, shop top housing and mixed use residential of 3 or more storeys with 3 or more dwellings.

Although the ADG is a guide, SEPP 65 stipulates that some of it must be applied to development application assessment. Certain provisions in parts 3 and 4 of the ADG will prevail over any inconsistent DCP control. These relate to:

- **visual privacy,**
- **solar and daylight access,**
- **common circulation and spaces,**
- **apartment size and layout,**
- **ceiling heights,**
- **private open space and balconies,**
- **natural ventilation,**
- **storage.**

Good design and presentation of residential flat buildings and shop top housing can enhance neighbourhood character. Design is influenced by building height, roof pitch, orientation of buildings, building materials, siting, colour scheme, architectural detailing and compatibility with existing development in the area. Designing to follow the contours of the land minimises visual impact and decreases the potential for overshadowing and loss of privacy on adjoining property.

Objectives

1. To provide an attractive design which respects the existing built form and landscape conditions of the area or likely future character of an area.
2. To design residential and mixed use developments to have street appeal through quality building design and landscaping features.
3. To ensure that garages are integrated into the overall design of the development and do not dominate the streetscape.

ADVICE

3.4.1 For two storey developments, stairways to the first floor must be provided internal to the dwelling/s.

3.4.2 The overall bulk, mass and front building line of the development must reflect the existing and/or emerging built form of the surrounding area. Front building line will be informed by the street set back provisions of SEPP 65 and the associated Apartment Design Guideline.

3.4.3 Significant changes of building height between existing dwellings and new development must be stepped.

3.4.4 Where basement parking is proposed, the development must be designed to ensure that the entrance to the parking area and podium does not dominate the streetscape. Limiting the extent to which any garage entrance projects beyond the rest of the building will minimise the dominance of basement parking areas.

3.4.5 The maximum unbroken length of wall is not to exceed 33% of the length of the corresponding property boundary. The maximum unbroken length of wall requirement does not apply to the narrow frontage of corner allotments. The length of wall on such frontages

will be assessed on merit. Appropriate staggering (minimum depth of 960mm) of buildings is required where a wall of a building exceeds the maximum length.

3.4.6 Some development under this section is not covered by State Environmental Planning Policy 65: Design quality of residential apartment development (SEPP 65). This section of the DCP requires the ceiling height provisions of SEPP 65 to be applied to development that is not covered by SEPP 65. This means SEPP 65 ceiling height provisions apply to non SEPP 65 development, for instance development less than 3 storeys and development that has no residential component

3.5 – Ancillary structures in residential R2 and R3 zones

This provision applies to ancillary structures such as garages, carports and sheds in residential areas. This provision applies whether such structures are attached or detached to a dwelling.

Objectives

1. To ensure ancillary structures are designed according to neighbourhood design context.
2. To ensure ancillary structures are not visually dominant.
3. To ensure ancillary structures are complimentary to the streetscape

ADVICE

3.5.1 Detached ancillary stuctures must be no more than 4.8 metres in height as measured to the highest point of the roof.

3.5.2 The covered area of a carport and the gross floor area of a garage or shed is limited to 45m^2

3.5.3 Sheds will be subject to the same setback requirements as identified for garages in this chapter

3.5.4 Any ancillary structure that is higher than 4.8 metres and/or greater than 45m2 in gross floor area must be attached to a dwelling and integrated into the design of the dwelling with particular attention to colours and materials, so that is appears to be part of the dwelling.

3.6 - Fences

Objectives

1. To enhance privacy and security while defining the boundaries between private and public land.
2. To ensure that fencing design and location complements the building design, enhances the streetscape and complements the objectives of passive surveillance.
3. To ensure that the design allows for casual surveillance of the property.
4. To ensure that clear lines of sight are maintained for motorists and pedestrians to and from the lot.
5. Fencing and walls where used to provide privacy, security and noise attenuation does not have a detrimental impact on the streetscape, neighbouring properties, reserves and walkways.

6. Any screen planting must be consistent with the **Chapter 17** (Crime prevention through environmental design).

ADVICE

General

3.6.1 Fences in front of the primary (front) and secondary (corner lots) building lines should be no higher than 1.2 metres.

3.6.2 Fences on the side and rear boundary should be no higher than 1.8 metres.

3.6.3 A masonry fence on any boundary should be no higher than 1.2 metres.

Front and corner lot fencing

3.6.4 Fences on the primary and secondary boundary must be decorative and open style, or where there are solid panels must be decorative and articulated by elements such as posts, setbacks, landscape screening, varied materials and colours. See **Figures 3.12 and 3.13** below for examples of open style and articulated fencing.

NOTE: The height of any retaining wall and/or privacy screen is included in the frence height.

NOTE: As per the requirements of the *Dividing Fences Act 1991*, any development application for a side or rear fencing on the common boundary must be accompanied by the consent from both landowners.

Figure 3.9 - Example of articulated fencing

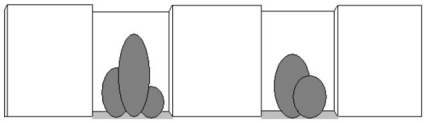
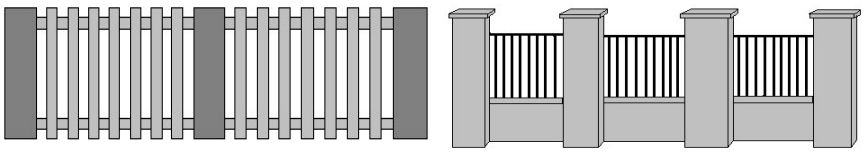


Figure 3.10 - Examples of open style fencing

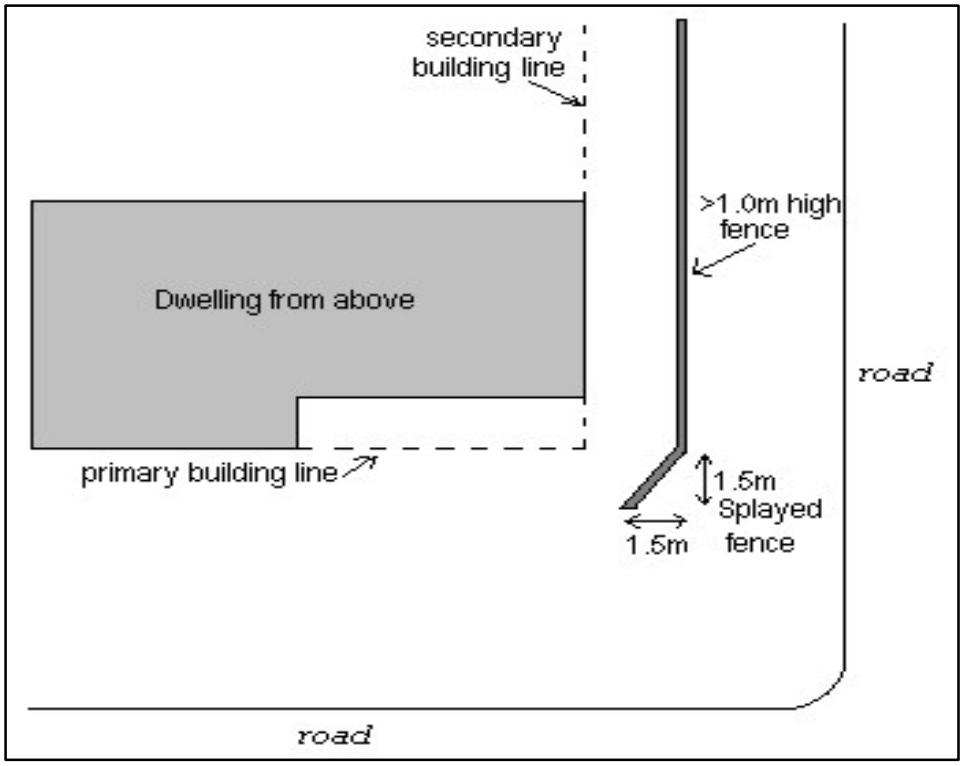


3.6.5 Solid fences such as solid metal panels or paling fences are not permitted in front of the primary building line.

3.6.6 Any fence and associated retaining wall within the front setback area from the primary road frontage must have a maximum height of 1.2 metres above existing ground level. Where the front fence is located on the front property boundary line, the height of the fence is measured above the existing ground level of the adjacent footpath of verge.

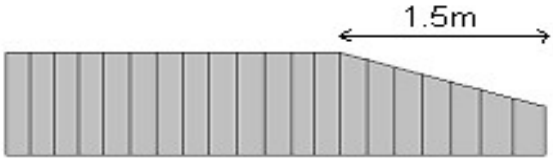
3.6.7 Fences that are adjacent to a driveway or road requires a 1.5 metre splay and/or taper at the corner to a maximum height of 1200mm to provide satisfactory view lines for motorists leaving the property. See **Figures 3.11 and 3.12** below

Figure 3.11 - Example of splayed side fence



3.6.8 Where the side boundary and front fences are of different heights, the transition in height must be tapered over 1.5 metres. See **Figure 3.12** below

Figure 3.12 - Example of tapered fence forward of the building line



Side and rear fencing

3.6.9 Where a retaining wall is required at the side and rear boundary and the combined height of the wall and fence exceeds 1.8metres, the retaining wall must be setback from the fence by at least 250mm to allow suitable landscaping in the setback area.

3.6.10 On steep sites, fencing should respond to the topography of a site.

Public reserves

3.6.11 Where fencing adjoins a passive public reserve, the fence must be predominantly open style character to allow casual surveillance of the area as per **Figure 3.13**.

3.6.12 Fencing adjoining active open space areas such as sports fields and playgrounds must be 1800mm high solid style panel fencing. Metal panels must not be the dominant material.

Bushland

3.6.13 Boundaries adjoining bushland must be fenced to identify the common boundary and to restrict the access of domestic animals to the bushland reserve. Fencing adjoining bushland must be non-combustible open style, of dark colour or of a colour harmonious with the bushland and screened with planting.

3.6.14 The installation of fencing must minimise any clearing and must not use existing trees as support posts.

Foreshore areas

3.6.15 Fences on a boundary with frontage to the foreshore:

a. must have a maximum height of 1500mm

b. must not be constructed of solid metal panels

c. must be designed to minimise its visual impact from foreshore areas. Fencing should be predominantly open style, use dark non-reflective colours and be screened by planting.

3.6.16 Fencing posts and panels must be setback at least 1500mm from any tree trunks.

Flood affected lots

3.6.17 Fences within a floodway or high flood risk precinct are not permitted except for security, permeable, open style safety fences. Weldmesh type fencing is not flood compatible. Fencing should be no more restrictive than pool type fencing.

Lots adjoining busy roads and railway lines

3.6.18 Refer to **Chapter 31** on acoustic protection for noise sensitive uses such as child care centres and residential development.

Construction

3.6.19 Fencing requiring the construction of footings must be avoided where they are likely to interfere with significant vegetation/prescribed trees (see **Chapter 21**, Preservation and removal of trees or vegetation). Where footings are required, the footings must be bridged having a lateral clearance of 250mm from the roots of subject tree/s, or other method recommended by an arborist.

3.6.20 Fencing posts and panels must be setback at least 1500mm from any tree trunks.

Multi dwelling developments - courtyard fencing

3.6.21 For multi dwelling developments courtyard fences forward of the building line or directly facing a street must:

a. be substantially constructed with the same materials and colours as the dwelling development

b. have a maximum width of 50% of the width of the lot as measured at the setback of the fence

c. have a minimum setback of 1m measured from the front boundary

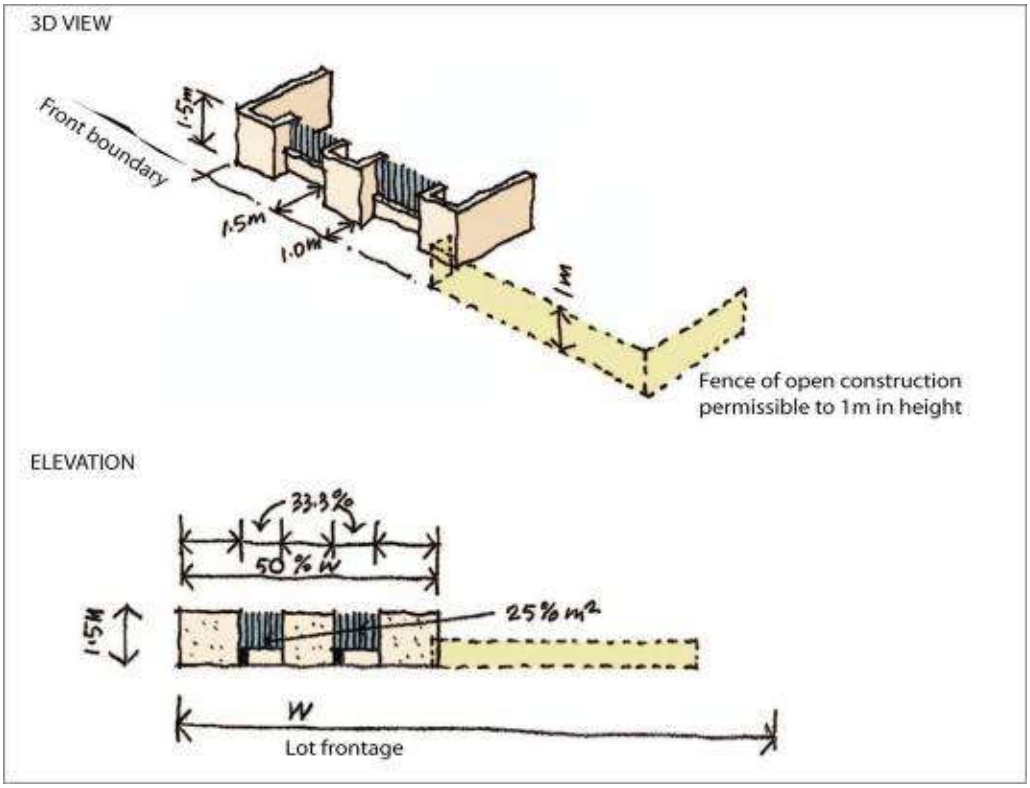
d. have a minimum height of 1600mm and maximum of 1800mm so as to provide security and privacy to the private open space area the courtyard enclosures

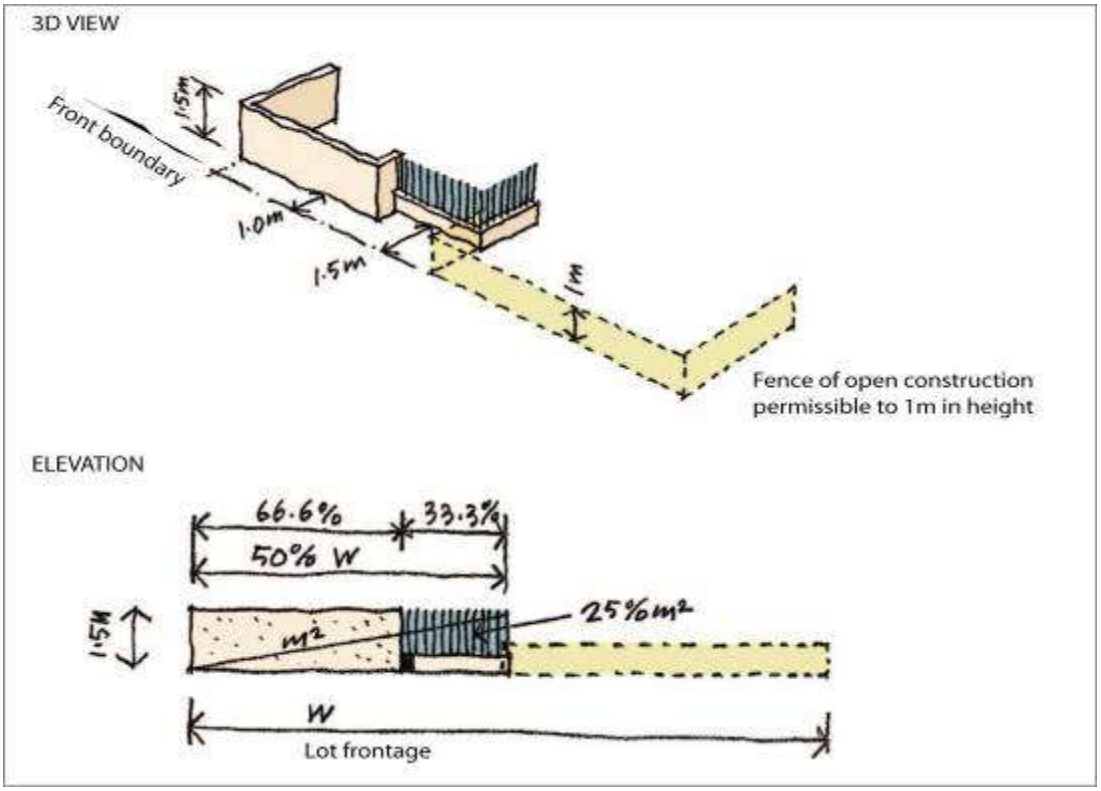
e. be designed with a mix of materials (eg brick/timber)

f. be constructed to not obstruct vision when vehicles are leaving the subject property or adjoining property. See **Figure 3.13** below.

g. Infill panels to be no more than 50% of the total height of the fencing to ensure privacy is maintained.

Figure 3.13 - 2 diagrams of courtyard fencing and vision for drivers leaving property





3.7 - Acoustic and visual privacy

Objectives

1. To ensure dwellings are sited and designed to satisfy anticipated user requirements for visual and acoustic privacy and to protect the visual and acoustic privacy of nearby residents.
2. To ensure that visual privacy and/or noise mitigation measures do not compromise the streetscape and neighbouring resident amenity.
3. Ensure principal living areas above ground floor cause no unreasonable loss of privacy to neighbouring residential development.
4. Ensure mitigation measures are integrated into the building design and have minimal negative impact on the amenity of the future occupants and neighbouring residents.
5. Ensure screens are integrated into the building design and have minimal negative impact on the amenity of residents or neighbours.
6. Ensure layout of multi-dwelling development does not compromise acoustic privacy.

ADVICE

Visual privacy

3.7.1 Where a balcony, deck, patio, pergola, terrace overlooks the principal internal living areas and/or the private open space area/s of neighbouring residences a privacy screen/s must be provided.

3.7.2 A privacy screen means a screen that:

a. has a minimum height of 1.5m above the floor level
b. is rigid and permanently fixed
c. has no individual opening more than 30mm wide
d. has a total area of all openings that is less than 30% of the surface area of the screen.

3.7.3 The siting, layout and location of upper level windows of high use habitable rooms must not unreasonably overlook the principal internal living areas and/or the private open space area/s of neighbouring residences. Where overlooking is unavoidable, windows must have a minimum sill height of 1500mm, have translucent glazing and/or incorporate other design measures that protect the privacy of main living areas of neighbouring residences. See Figures 3.14 below:

NOTE: Where the development site adjoins main or arterial roads and/or a railway corridor, the land may be affected by a building line/boundary setback. Refer to the Section 3.2, Building lines and boundary setbacks.

NOTE: Refer to the Chapter 31 on Acoustic protection for noise sensitive uses such as child care centres and residential development if development is likely to be affected by high levels of external noise. A report prepared by an acoustic consultant may be required.

Figure 3.14

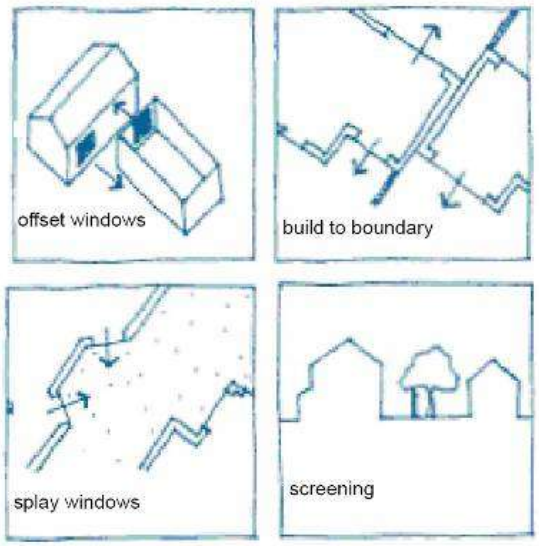


3.7.4 Where steps and/or a landing are required to provide access from the dwelling to ground level and overlook into the principal internal living areas and/or the private open space area/s of neighbouring residencies, a privacy screen must be provided.

A privacy screen means a screen that:

a. has a height that will achieve effective privacy but with a maximum height of 2.4m above ground level
b. is rigid and permanently fixed
c. has no individual opening more than 30mm wide
d. has a total area of all openings that is less than 30% of the surface area of the screen
e. is not attached to a fence on the common boundary
f. is wholly contained within the property boundary.

Figure 3.15 - 4 diagrams showing how building design and layout can promote privacy between dwellings



Source: AMCORD

3.7.5 The privacy needs of both residents and neighbours can be achieved by:

a. staggering windows of adjoining dwellings so as not to be opposite each other

b. avoid using elevated terraces, decks and external stairways that overlook the rear of adjoining properties and the open space areas within a multi-dwelling development

c. design balcony balustrades so as to provide privacy particularly when the balcony provides the only private open space. In this regard, open style or transparent materials should be avoided.

3.7.6 Effective siting, layout and location of windows and balconies to avoid overlooking are preferred over the use of screening devices, high sill windows or translucent glazing.

3.7.7 Upper storey living room windows and balconies should be located so that views are to the street or to adjoining public reserves.

Acoustic privacy

3.7.8 Design for acoustic privacy between the bedrooms by considering the opening direction of windows, staggering the building footprint or incorporating a masonry nib wall.

3.7.9 Noise sensitive rooms must adjoin noise sensitive rooms of the adjoining dwelling. Where the window openings of a noise sensitive room adjoin the garage of an adjoining dwelling or common car parking areas, it must be demonstrated that the acoustic privacy of noise sensitive rooms is not compromised.

3.7.10 In multi dwelling developments, adjoining rooms across common walls and floors should be of a similar use to minimise loss of acoustic privacy.

3.7.11 Air conditioning units, swimming pool pumps or equipment should be designed enclosed and located to minimise acoustic nuisance to adjoining residences.

3.8 - Private open space

Objectives

1. To provide useable secluded private open space that meets user requirements while not compromising the privacy and amenity of neighbouring residents.
2. To provide private open space which can receive adequate sunlight and is well integrated with indoor living areas to promote outdoor living and functionality.
3. To provide for principal private open space to be appropriately covered.

ADVICE

Gradient

3.8.1 The principal private open space area must have a maximum gradient of 1:20.

Private use

3.8.2 Private open space areas must be clearly defined for private use. In this regard, private open space areas do not include open space areas that are open to view from public places (balconies excepted), areas between the driveway/s and property boundary, areas open to view from common areas (balconies excepted) within a development, and the like.

Private open space forward of building line

3.8.3 Where the ground level principal private open space area is located forward of the building line due to site constraints, its relationship to the streetscape must be suitably designed having regard to fencing, privacy, noise and security. No more than 50% of the required private open space area must be located forward of the building line.

Upper level private open space

3.8.4 Principal private open space areas in the form of a deck, terrace or balcony must be sited and designed to protect the acoustic and visual privacy of adjoining residents within their dwellings and their private open space areas, in addition to dwellings within the development.

3.8.5 To achieve this requirement, terraces, balconies and decks may require increased boundary setbacks, articulated building lines and/or privacy screens or walls. Any privacy screen or wall must be integrated into the building design. Balcony or terrace enclosures will not be supported where in Council's opinion they compromise the design and overall appearance when viewed from the street or other public place.

Living area access

3.8.6 The principal private open space must have direct access to the principal internal living areas of the dwelling whether the principal private open space is provided at ground level, terrace or balcony.

Design considerations

3.8.7 Private open space areas should be located away from clothes drying and waste bin storage areas. Where possible, a separate 'utility' area should be provided.

3.8.8 The surface treatment of the principal private open space area does not need to comprise of impermeable material. Consideration should be given to the inclusion of alternative finishes such as permeable pavers, grass and the like.

3.8.9 For two storey developments, where the principal private open space area is located on the upper floor, an equivalent area of open space should be provided at ground level and with a reasonable level of solar access.

3.8.10 The principal private open space area should be integrated with the open space area of the dwelling to maximise the useability of the overall open space areas for the residents of the dwelling.

3.8.11 Private open space areas within a multi dwelling complex should be sited and designed to minimise overlooking from windows and balconies of adjoining dwellings or from common areas within the development. For dual occupancies and multi dwelling housing in residential zones, providing the principal private open space area as a deck, terrace or balcony is generally not appropriate due to loss of privacy to neighbouring residences from the elevated open space areas.

3.8.12 Principal Private Open Space (PP0S) can be covered/part covered by for instance an awning or shade sail where another functional area of private open space equivalent in size to the covered area, and which meets the solar access PPOS requirements, is available. Covers over principal private open space:

a. cannot be in front of the respective dwelling or within 3 metres of a side or rear boundary

b. must enable compliance with main internal living area solar access requirements

c. cannot increase overshadowing on adjoining properties.

Dual occupancy and multi dwelling housing in residential zones - private open space dimensions

3.8.13 Private open space must be provided for each dwelling with a minimum area 40 square metres and of this open space, one area with the minimum dimensions of 4 metres x 5 metres must be provided as the principal private open space area. Where this principal private open space adjoins a boundary fence, a landscape bed with a minimum width of 1 metre must be provided between the boundary and the principal private open space.

3.8.14 The principal private open space area of at least 4 metre x 5 metre excludes obstructions such as landings and stairs and areas occupied by clothes drying facilities, garbage storage areas, above-ground rainwater tanks, pergola posts, hot water systems, gate swing areas and the like.

3.8.15 Outdoor areas between the dwelling and the boundary that are less than 1.2m in width are excluded from the calculation of the total private open space area (i.e. 40 square metres). Fixed items such as sheds should be excluded from the private open space area calculations.

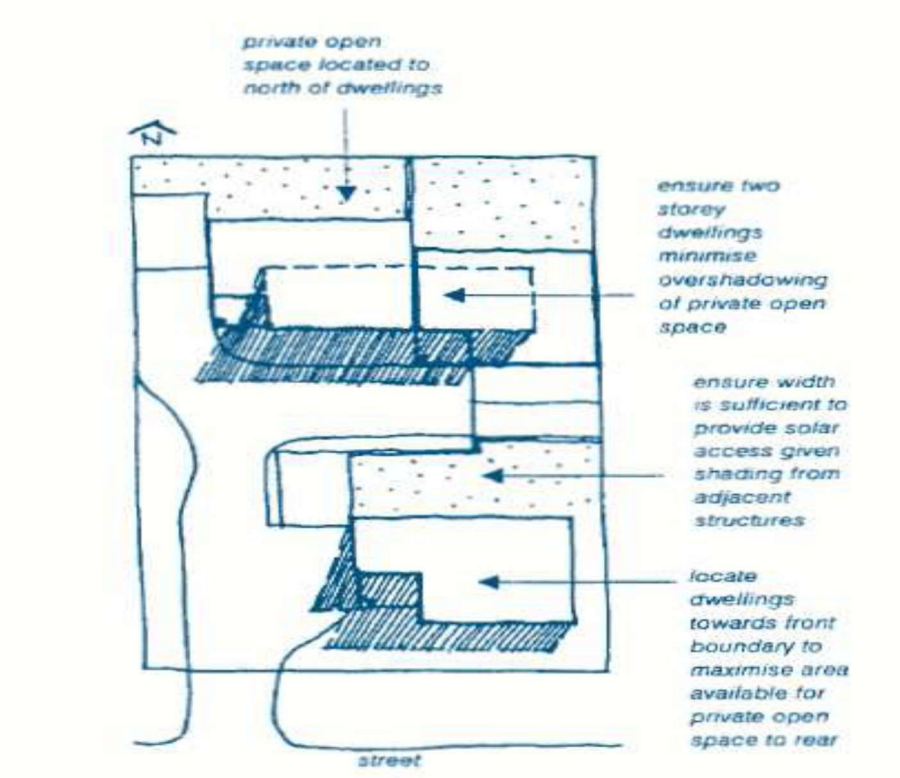
3.8.16 Any landscaped bed provided between the principal private open space area and the boundary fence is included in the 40 square metres of private open space area.

3.8.17 For developments over 10 units, a common open space area is to be provided for residents. The size, location and type of common recreation/facility to be provided are to be satisfactorily negotiated with Council. Such requirements will be underpinned by adequate solar access, provision for increasing the wellbeing of the residents, ease of access and noise generation.

Residential flat buildings, mixed use buildings and shop top housing - private open space dimensions

3.8.18 Dwellings within residential flat buildings, mixed-use developments and shop top housing must have private open space in the form of either a terrace, balcony or a private courtyard at ground level. The private open space must have a minimum area of 15 square metres and of this open space, one area with a minimum dimension of 3 metres which is accessible from a living area.

Figure 3.16 - Design of private open space areas



Source: AMCORD

3.9 - Solar access for adjoining dwellings on other land/buildings and for private open space within a development

Objectives

1. To ensure new development allows a reasonable level of solar access to the main living areas, solar collectors and main recreational open space areas of neighbouring residential development.
2. To ensure a reasonable level of solar access to the main internal living areas and principal private open space areas of dwellings within a dual occupancy and multi dwelling development.

ADVICE

Dual Occupancy and multi dwelling housing solar access within a development

3.9.1 The principal private open space area must receive a minimum of 3 hours of continuous sunlight between 9.00am and 3.00pm mid-winter (June 21/22) for at least 70% of the dwellings in a multi dwelling development and for at least 50% of the dwellings in a dual occupancy development.

Shadow diagrams

3.9.2 All proposals that are at least 2 storeys must submit a shadow diagram showing the effect of overshadowing on adjoining land and buildings. A shadow diagram must detail:

a. true north

b. ridge and ground levels

c. location of adjacent buildings affected by shadow and location of their living areas, principal open space areas and any solar collectors

d. the shadows cast by existing and proposed development at 9am, noon and 3pm on the winter solstice (21/22 June)

e. where overshadowing is critical, an elevational shadow diagram may be required.

Dual occupancy and multi dwelling housing - solar access to neighbouring development –

3.9.3 The principal private open space area, main internal living areas and solar collectors of adjoining dwellings must receive a minimum of 3 hours of continuous sunlight between 9.00am and 3.00pm mid-winter (June 21/22). Main living areas include kitchens, family rooms, lounge, rumpus or sun rooms.

3.9.4 Where sunlight to these areas is restricted, the building line setbacks of the proposal may need to be increased accordingly until the minimum requirement is met.

NOTE: A shadow diagram for a single dwelling development is generally not required unless Council considers that the proposal may impact on the sunlight received by adjoining developments.

3.9.5 Solar collectors on adjoining developments may require more than 3 hours of continuous direct sunlight for proper functioning. Building design and boundary setbacks should not compromise existing performance of solar collectors on adjoining development/s.

3.9.6 Landscaping must be sited and use species that do not unreasonably restrict solar access to neighbouring development. Where trees are proposed adjacent to boundaries, deciduous species should be selected.

3.9.7 The principal private open space area must receive a minimum of 3 hours of continuous sunlight between 9.00am and 3.00pm mid-winter (June 21/22) for at least 70% of the dwellings in a multi dwelling development and for at least 50% of the dwellings in a dual occupancy development.

3.10 - Multi dwelling and dual occupancy development – waste services and other site facilities

Objectives

1. To ensure the placement of site facilities are appropriately located to minimise the impacts to the building occupants, neighbours, and on the streetscape and the natural environment.
2. To effectively integrate essential amenities and facilities within developments.
3. To promote crime prevention through environmental design principles.

ADVICE

Waste storage

3.10.1 Waste storage areas must be easily accessible from respective dwellings, visually unobtrusive from public places and cater for an appropriate number and size of bins

Clothes drying facilities

3.10.2 External clothes drying areas must not be visible from a public place

3.10.3 External clothes drying areas are not permitted forward of the building line.

3.10.4 Common clothes drying areas are acceptable for residential flat buildings in business and commercial zones. These areas must not be visible from a public place and must be secured from public access.

Mailboxes

3.10.5 Mailboxes must be indicated on the site plan and constructed to meet the requirements of Australia Post.

3.10.6 On a corner lot, the mail box must be placed on the boundary on which the front entry door is located.

3.10.7 Mailboxes should be located where they are visible from the associated and nearby dwellings.

Onsite storage areas

3.10.8 Where a storage area is located within the internal walls of a garage the following minimum dimensions are required for the garage:

a. Single car garage: 4m x 5.9m

b. Two car garage: 6.7m x 5.9m

3.10.9 Where a storage area is located within the floor plan of the dwelling the following minimum area is required exclusive to each dwelling house:

a. 3 bedrooms: 10 cubic metres

b. 2 bedrooms: 8 cubic metres

c. 1 bedroom: 6 cubic metres

3.11 - Swimming pools and spas

Objectives

1. To ensure that swimming pools meet relevant safety standards.
2. To ensure the continued safety of its users within the location of the swimming pool and spas.
3. To ensure swimming pools and spas are placed and designed to maintain the amenity of the surrounding residential neighbourhood.

ADVICE

3.11.1 Swimming pools and spas must be setback a minimum of 900mm from the side and rear property boundaries to the edge of the water or decking/copings whichever is the closer.

3.11.2 Swimming pools and spas must be setback from the primary and secondary building lines as outlined in the building line / setback requirements of this Plan.

3.11.3 Any easements or restricted building zones must be checked for restrictions on constructing swimming pools or spas.

3.11.4 Pools and pool fencing must comply with the requirements of Australian Standard AS1926–Swimming pool safety and the *Swimming Pool Act 1992* and Regulations.

3.11.5 The wall of a residential building may form part of the child restraint barrier providing the wall has no openable door, window or other opening through which access may at any time be gained to the swimming pool.

3.11.6 Gate posts must be firmly set into a concrete base and/or fixed to another structure so as to prevent any movement that may reduce the effectiveness of the gate latch.

3.11.7 Any decking around a swimming pool or spa must not be more than 600mm above existing ground level.

3.11.8 Discharge and/or overflow pipe(s) from the swimming pool and filtration unit are:

a. to be discharged to an approved reticulated system

b. must not be discharged to any watercourse.

3.11.9 A minimum of 50% of the perimeter of a pool must be accessible for rescue purposes.

3.11.10 A spa pool is not required to be surrounded by a child resistant barrier provided that the spa pool is covered or secured by way of a child-safe structure (e.g. door, lid, grill or mesh) that is fastened to the spa pool by a child-resistant device, at all times, when the spa pool is not in actual use.

3.11.11 Structures such as tool sheds garages, barbeques, clotheslines or other like structures not appurtenant to a swimming pool must be located outside the fenced pool enclosure.

3.11.12 The pool pump / filter must be located as far away as practicable from any adjoining dwelling and should be enclosed in an acoustic enclosure / structure**.**

3.12 - On-site wastewater management for single residences and subdivision planning in areas without Sydney Water Sewerage System

This Section and associated **Appendix 1** applies to the disposal of wastewater from single residences and associated new subdivisions in areas not serviced by the Sydney Water sewerage system. Applications to install or modify wastewater management systems for premises other than a single residence will be assessed on a case by case basis.

Objectives

1. To provide advice to assist in the design and siting of on-site wastewater management facilities.
2. To minimise both public and environmental health risks associated with the use of on-site wastewater management.
3. To protect the environment.

ADVICE

3.12.1 Applicants should use **Appendix 1** during the planning of an on-site wastewater management facility and prior to the preparation and lodgement of an application. Where any variation is proposed the applicant is to satisfy Council that the proposal will satisfy the objectives.

3.12.2 All applications will be determined having regard to Part 3 – *Management of Waste, Local Government (Approvals) Regulation 1993* and the *Environment and Health Protection Guidelines – On-site Sewage Management for Single Households (Department of Local Government, 1998)*. **Appendix 1** is for the general guidance of Council in the exercise of its duties and functions under these Acts. **Appendix 1** has advice for Council when assessing and regulating the design, installation, operation and maintenance of on-site wastewater management systems in unsewered areas, for both single lot development and subdivision planning. It also presents guidelines for applicants to assist in the preparation of proposals for on-site wastewater management systems.

3.13 - Adaptable housing

Objective

1. To provide independent living opportunities for different ages and abilities.

ADVICE

3.13.1 Developers of all residential developments including combined subdivision/dwellings, boarding houses, hostels need to consider applying the essential and desirable features identified in Australian Standard 4299-1995 Adaptable Housing (or most recent version); to developments involving 4 or more dwellings, i.e:

a. 25% for 4 dwellings, boarding house or hostel units or rooms

b. 20% for more than 4 (to the nearest whole number).

3.14 - Manufactured homes

Objectives

1. To restrict temporary housing structures to appropriate locations such as caravan parks, and manufactured homes estates.
2. To ensure that residential development in residential areas is of a high quality construction standard and is of a permanent nature.

ADVICE

3.14.1 Manufactured homes are not permitted in residential areas unless they are located within an approved tourist facility or manufactured home estate (i.e. caravan parks and the like).

3.15 - Shell Cove – area specific development advice

Shell Cove - all development – building materials and finishes

3.15.1 Roof materials must be terracotta, cement tiles or metal sheeting.

3.15.2 External materials, colours and finishes of all buildings and structures including fencing must complement the existing natural environment of Shell Cove and the coastal theme. External colours must be of a nautical/seaside theme.

Shell Cove – Stage 6F lots adjoining the golf course land

Roof design

3.15.3 In Stage 6F, specific roof design requirements apply to lots in and **Figure 3.17** below and adjacent to the golf course. The provisions apply to height and roof form.

3.15.4 To minimise the building bulk on the above lots, all dwellings must have single pitch roofs with a predominantly 5˚ maximum slope. The roof slope should generally follow the contours of the site. Roof design should consist of a number of smaller roof forms rather than a single large roof. The bulk of two storey buildings should be minimised by use of smaller variable roof slopes or flat roof sections to provide interest. Utilisation of large balconies is encouraged in order to take advantage of views.

3.15.5 Garages must have a single pitch/flat roof.

Figure 3.17 - Map showing lots with low pitched roofs

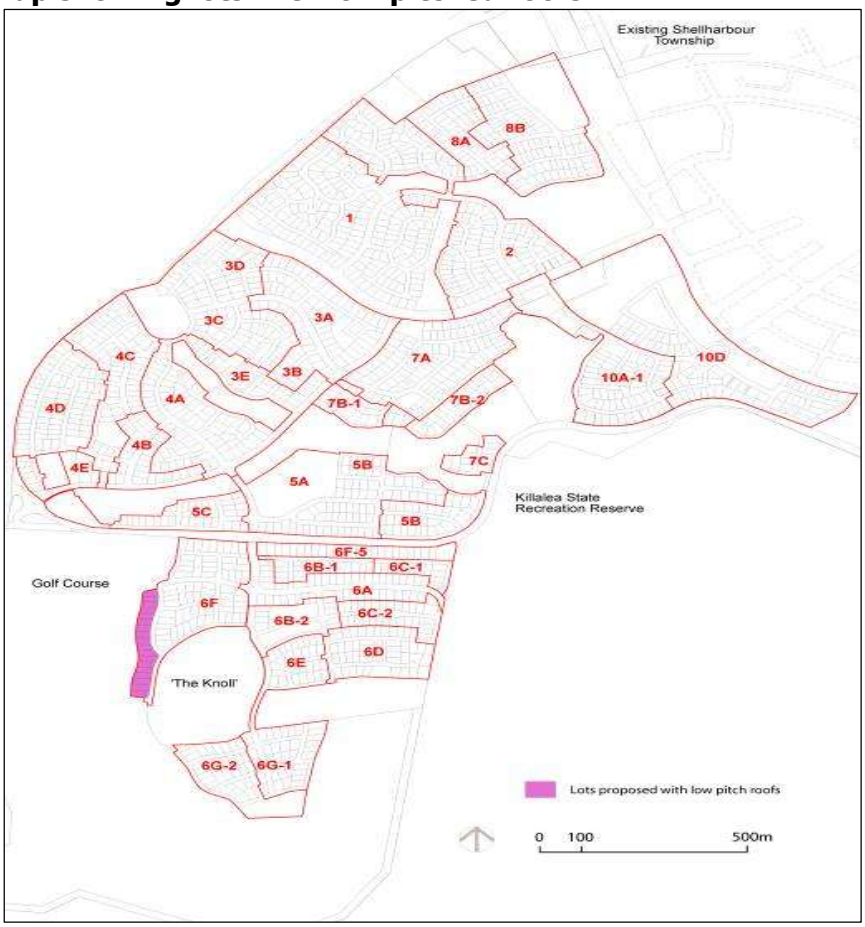
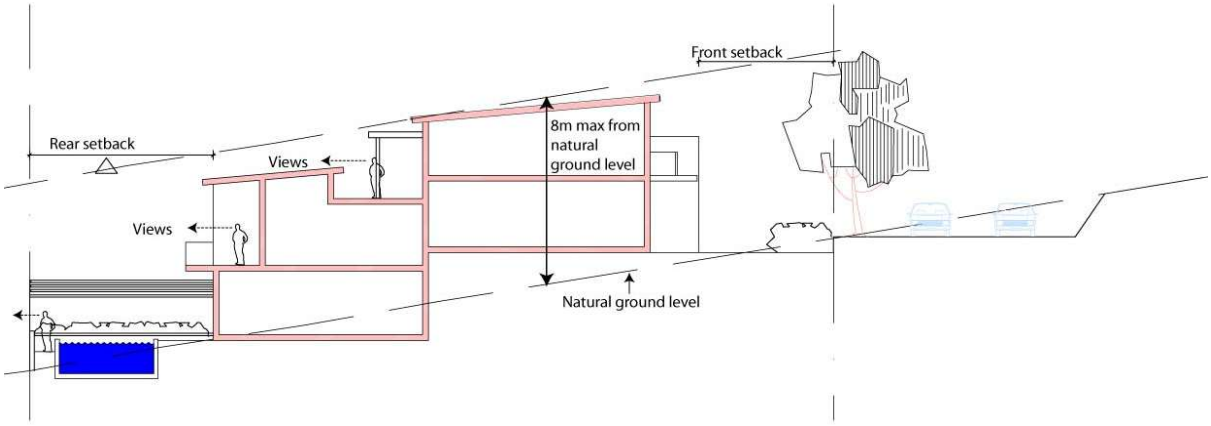


Figure 3.18 - Section showing typical roof form for identified lots abutting the golf course in Stage 6



Shell Cove Stage 6 - fencing

3.15.6 Lots within Stage 6 that share a boundary with the golf course must comply with the following:

a. solid metal panel fences within the front and rear setback areas are not permitted

b. the maximum side boundary fence height between the properties is 1.5m whether measured from natural ground level or top of the retaining wall.

3.16 - Residential zoned land adjoining Albion Park Town Centre

ADVICE

3.16.1 Please refer to Section 6.2 - Albion Park for advice on front building lines for residential zoned land east and west of Albion Park Town Centre.

3.17 - Shellharbour City Centre - area specific provisions

Residential flat buildings and shop top housing - Streetscape and design

NOTE: regarding this section, State Environmental Planning Policy 65 – Design Quality of Residential Apartment Development (SEPP 65) and its associated Apartment Design Guide (ADG), applies to residential flat buildings, shop top housing and mixed use residential of 3 or more storeys with 3 or more dwellings.

Although the ADG is a guide, SEPP 65 stipulates that some of it must be applied to development application assessment. Certain provisions in parts 3 and 4 of the ADG will prevail over any inconsistent DCP control. These relate to:

- **visual privacy,**
- **solar and daylight access,**
- **common circulation and spaces,**
- **apartment size and layout,**
- **ceiling heights,**
- **private open space and balconies,**
- **natural ventilation,**
- **storage.**

Any city centre requires a range of residential accommodation to make it a lively, sustainable and secure environment. This may take the form of residential medium density housing, (row and small lot housing), apartments and mixed use accommodation.

Objectives

1. To encourage a range of residential medium density housing opportunities in the City Centre.
2. To provide for adaptive re-use of ground floor accommodation for retail and/or commercial use.
3. To provide acoustic privacy.
4. To optimise views to areas of environmental amenity.

ADVICE

3.17.1 Any development with ground level residential should be designed to include or facilitate future ground level commercial. They should:

a. include separate entries for ground level commercial and upper level residential.

b. include opportunities for additional on-site parking for future demand.

c. be designed so that the ground level is adaptable to commercial.

3.17.2 Entries to buildings should be clearly expressed. These may be paired in the case of duplexes, or grouped in the case of apartments.

3.17.3 Corner elements (towers, wrap around verandahs) should be expressed on significant sites.

3.17.4 Garages may contain studios above garages which may be used in association with the residential or commercial component or as a separate tenancy subject to provision of an additional parking space.

3.17.5 All residential dwellings should have 2m deep verandahs to the street frontage across at least 50 % of the building façade.

3.17.6 Residential setbacks must be 3.5 metres from the front property boundary except in mixed use buildings where no setback is required. No side setbacks are required. Rear setbacks to garages must be 1 metre.

3.17.7 Parking must be accessed from rear lanes where possible.

3.17.8 Building facades must be strongly articulated and modulated so that individual occupancies are obvious and balconies, verandas etc. are expressed.

3.17.9 Roofs must be pitched greater than 25% or built behind parapets. Roof materials must be metal or tile in a colour range of grey to mushroom.

3.17.10 External walls must be painted, rendered or bagged or similar masonry.

3.20.11 Windows and doors must be of vertical proportion and of timber or high profile grade aluminium.

3.17.12 A colour and materials palette must be submitted with the Development Application.

3.17.13 Residential buildings must have front fences of 0.9 metres. Fences must be designed to reflect the architectural style of residences. Fences can be omitted or removed for ground level commercial use.

3.17.14 Appropriate lighting must be provided to illuminate residential and commercial entries and must not disturb surrounding residential amenity.

3.17.15 Garages must be built on rear lanes, setback 1 metre from building rear lot boundary. They must have doors which do not infringe on the lane width (i.e. no tilt doors).

Residential buildings must have living rooms overlooking the street to provide surveillance. Above ground floor uses should be designed to overlook streets, laneways, other public domain and be used for residential living rooms or business uses with an active human presence. Balconies connected to such uses can be used.

3.17.16 Design the internal layouts of apartments and the location of courtyards, terraces / balconies, and openings to minimise noise transmission.

3.17.17 Incorporate noise attenuation measures, such as double-glazed windows in all development.

3.17.18 Minimise the noise impacts of goods and service deliveries as well as waste and garbage collections.

3.17.19 Screen waste storage areas from public view.

3.17.20 Minimise the noise impacts associated with restaurants and cafes.

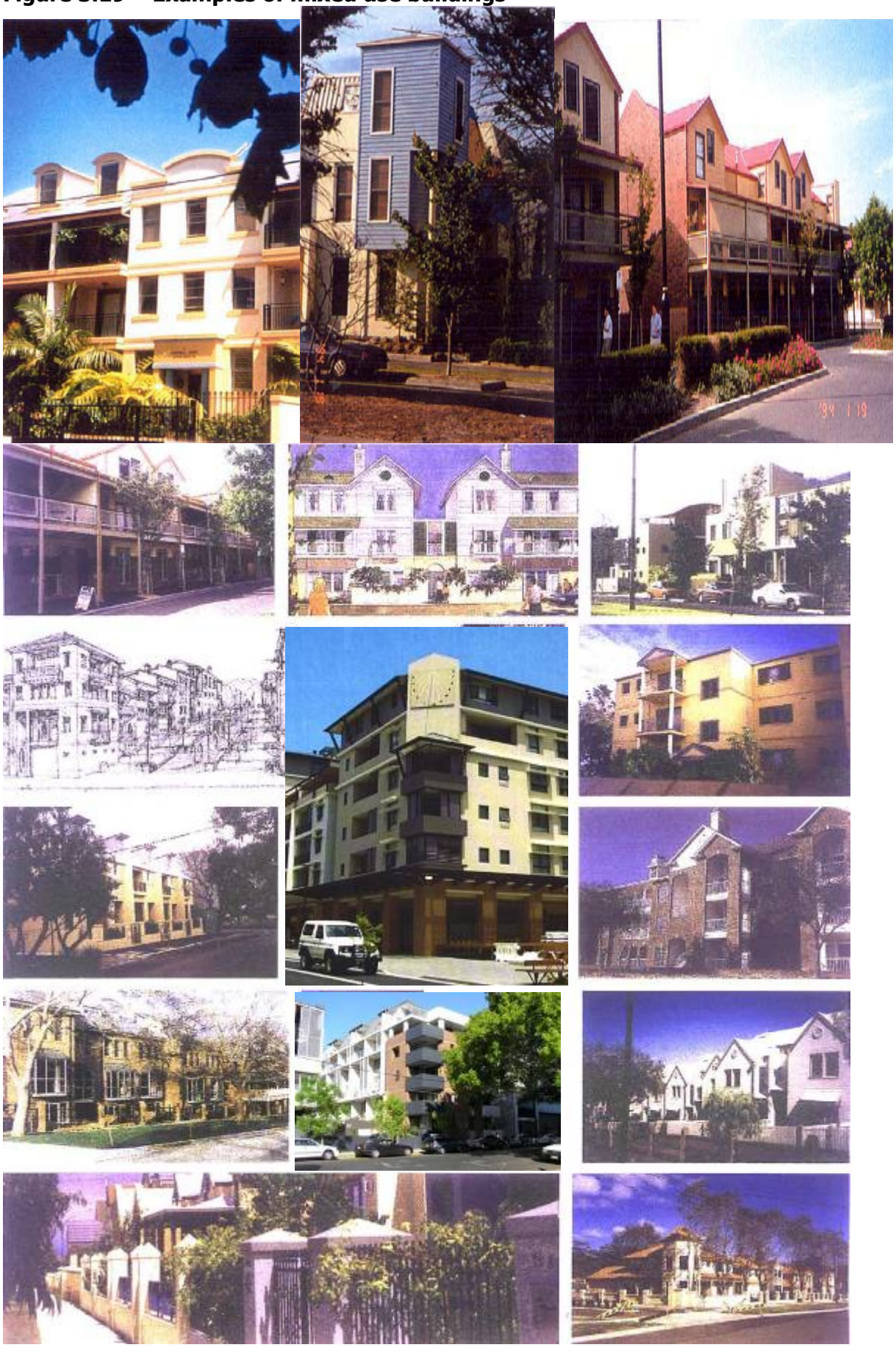
3.17.21 Any residential development above entertainment venues must address this potential conflict at conceptualisation stage and lodge a noise report with the development application. Council's conditions of consent may include limited hours for noisy activities and / or requirements for acoustic treatment.

3.17.22 Some development under this section is not covered by State Environmental Planning Policy 65: Design quality of residential apartment development (SEPP 65). This section of the DCP requires the ceiling height provisions of SEPP 65 to be applied to development that is not covered by SEPP 65. This means SEPP 65 ceiling height provisions apply to non SEPP 65 development, for instance development less than 3 storeys and development that has no residential component

NOTE: The images in Figure 3.19 below illustrate a range of building forms which may be appropriate for various parts of the city centre and which will contribute to the character of the centre. Key features include:

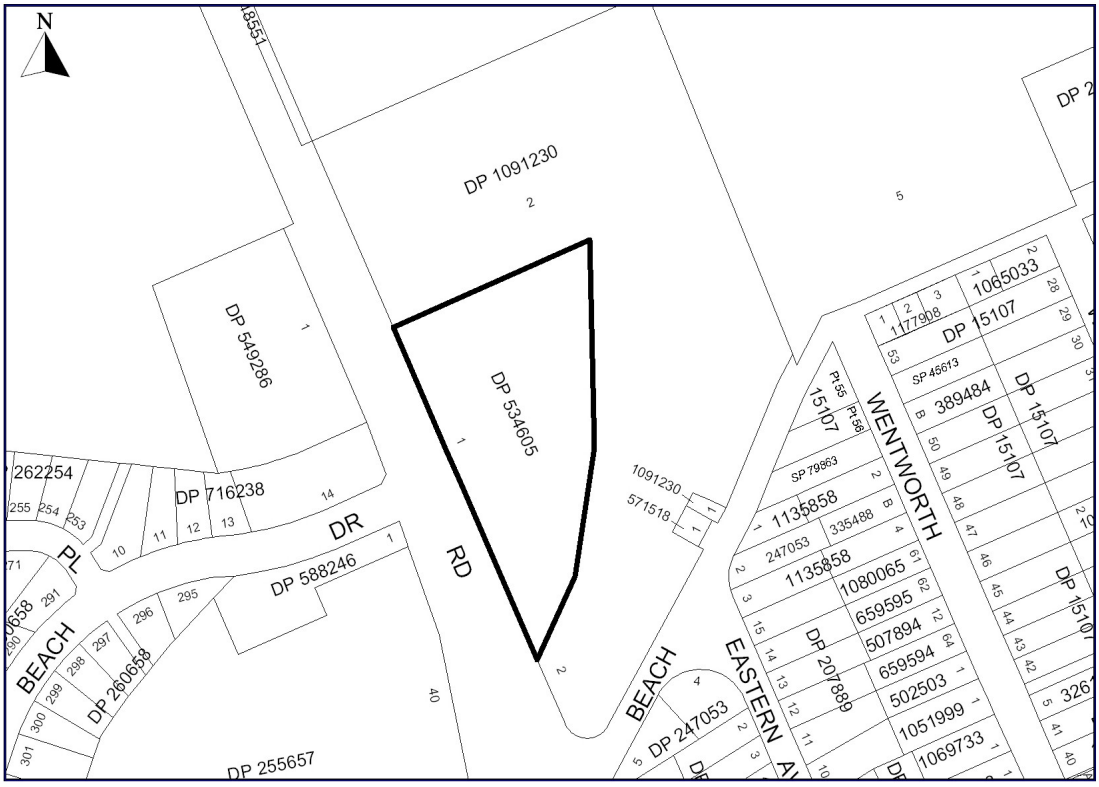
1. **mixed use commercial/residential and/or residential home office opportunities**
2. **two and three storey residential apartments over retail/commercial space**
3. **two and three storey residential apartment buildings**
4. **two storey townhouses and town homes**
5. **a mix of housing types and styles within a co-ordinated framework**
6. **extensive street planting to enhance the public domain**
7. **the provision of a limited palette of front fence types to contribute to the character of the public domain**
8. **standard building setbacks**
9. **explore opportunities for mid-high rise development close to centre particularly on icon sites**
10. **in accordance with this plan, taller buildings may be permitted subject to Precinct Development Strategy approval on larger and icon sites.**

Figure 3.19 – Examples of mixed use buildings



3.18 - Shellharbour Road, Shellharbour (Tawarra site) former school site,

Figure 3.20 - Tawarra site



Objective

1. To minimise odour impact.

ADVICE

3.18.1 Due to the proximity of the Sydney Water sewerage treatment plant, Council will not support any proposed development (including permanent residential occupation of the land), unless Council is satisfied that issues in relation to odour associated with the operation of the sewerage plant are adequately addressed. As the site is within 400m of the sewerage treatment plant, Council must consult with and take into consideration, comments from Sydney Water prior to the determination of any development application.

3.19 - Residential development in non-urban areas (lands zoned Rural, Agriculture, Rural Landscape, Primary Production, Transition, Environmental, Nature Conservation, Large Lot Residential or an equivalent zone)

Objectives

1. To specify issues to be addressed in the design of subdivisions.
2. The design of subdivisions should reflect the rural context of the land and the need to retain a rural/natural character. Subdivisions must be designed to fit within natural features of the site, taking advantage of vistas and rural/natural outlooks and creating a feeling of space between dwelling envelopes. Building envelopes must be clear of areas subject to landslip.
3. To ensure that adequate access is available to small rural allotments.
4. To minimise the risk of bush fire hazard on future residential development.

5. To identify the requirements for effluent disposal areas.
6. To ensure that consideration is given to the location of the higher level water tower for Albion Park.
7. To ensure that there is minimal impact on the biodiversity of native vegetation and to encourage environmental conservation works to enhance wildlife corridors or links between remnant stands of vegetation.
8. To assist in integrating the built form with the landscape.
9. Access roads and driveways are to be designed to avoid tree removal wherever possible. The location of access ways and details of any trees to be removed are to be included on plans lodged for Council approval.
10. To minimise the visual impact of development on landscape character by location and use of materials that are appropriate to the landscape.
11. To ensure rural buildings are of a character to complement their rural setting and are consistent with the traditional form of clustering of rural buildings.
12. To specify servicing requirements.

NOTE: The relevant LEP, this DCP and individual development application assessment will determine minimum lot size.

NOTE: Chapter 34 Visual landscape character, Schedule 6 of Shellharbour LEP 2000, Schedules 2 and 3 of Shellharbour Rural LEP 2004 and the Lot Size Map in the LEP provide guidance on the location of rural and environmental land with potential for subdivision and/or construction of dwelling houses.

NOTE: Council's Subdivision Design Code should be referred to.

ADVICE

Access

3.19.1 Legal access for all small rural holdings will need to be identified on plans lodged for subdivision.

3.19.2 Internal access roads may be accepted as all-weather access tracks using compacted gravel. This is provided that the roads are not dedicated as public roads.

3.19.3 Where the roads are requested as public roads in subdivision, they will be required to be constructed to standards specified by Council.

3.19.4 Vehicle access will need to comply with the requirements outlined in the **Chapter 26 and Appendix 11** on bush fire hazard.

3.19.5 Additional access opportunities (formal or informal) may be necessary to provide escape options in high bush fire risk areas.

NOTE: If applicants request Torrens subdivision, it would be preferred to have the roads as right of carriageways, which would permit construction in gravel.

Bush fire hazard

3.19.6 Where development is proposed in the area of the existing fire trail that connects to the Stockyard Mountain fire trail, that trail will need to be retained and a right of way or road dedication may be required to ensure that the connection is not over private property.

3.19.7 In instances where the balance between bush fire protection and environmental and social impact cannot be achieved, proposals may not be supported.

On-site wastewater management

3.19.8 All works necessary to make effluent disposal sites suitable and functional will be the responsibility of the subdivision developer. Individual property owners will therefore only be responsible for installation and operation of the system. Allotments utilising an on-site effluent disposal system will not be permitted to connect to the Sydney Water service.

Higher level water tower - Lot 1, DP 1031825

3.19.9 Prospective developers should be aware of the location of the tower and the mains and any implications for development.

3.19.10 The constructed access route for the tower must be utilised to provide a substantial part of the access to Lot 11 DP 1128847, Lot 19 DP 1154632 and Lot 220 DP 1123859.

Environmental (Including flora & fauna) protection

3.19.11 All proposed building envelopes must be located on cleared land and must be indicated on plans lodged with a development application for subdivision. To allow the proposal to be inspected by Council officers, the allotment and/or dwelling site must be pegged.

3.19.12 Any proposal that includes clearing will need to consider the requirements of the *Native Vegetation Act* (2003).

3.19.13 All effluent disposal areas must be located on cleared land and must be indicated on plans lodged with a development application for subdivision.

3.19.14 Removal of vegetation for the reduction of bush fire hazard will be considered.

3.19.15 Removal of vegetation for keeping or grazing of animals is discouraged.

3.19.16 Submit a Vegetation Management Plan that includes and takes into account the following information:

a. Southern Rivers Catchment Action Plan - Biodiversity Management Targets.

b. Illawarra Biodiversity Strategy 2011, by Wollongong, Shellharbour and Kiama Councils.

c. Location of Endangered Ecological Community, Endangered populations, Regionally Significant Ecological Community, Regionally Significant Species, Threatened species.

d. Detailed vegetation survey in areas proposed for building envelopes, building sites, access road locations, service routes, effluent disposal areas, bushfire requirements.

e. Location of all proposed building envelopes, buildings and associated/ancillary infrastructure.

f. Location of fences or other means of preventing access to significant vegetation areas and riparian corridors by stock, vehicles, trail bikes or the like.

g. Method of weed control. A statement of the weed problem and measures to remove them must be included. The plan must be prepared having regard to the Southern Rivers Catchment Action Plan - biodiversity management target B6 (invasive weed species threats), and following consultation with the Illawarra Noxious Weeds Authority and Council's Tree Management and Landscape Technical Officers. The statement must take into account the need to preserve existing native vegetation and especially the significant plants that may occur on the site.

h. Planting schedules detailing quantity and species. Plants must be mainly native species indigenous to the particular site to maintain the current landscape character. Must avoid using plants that have the potential to become bushland/environmental weeds.

i. Method of revegetation.

j. Staging of works with priority being given to screening, establishment of riparian buffers/improvement to riparian corridors and weed control in the existing cleared areas.

Building design

3.19.17 Dwellings and ancillary buildings must not be visually prominent when viewed externally to the site and must fit within the natural setting of the area. See chapter on visual landscape character.

3.19.18 The building envelope for dwellings must be indicated on plans lodged for subdivision consent. The location of the envelope must be selected to minimise its visual prominence and to minimise the need for cut and fill. Building envelopes will be required on final plans of subdivision and on 88B instruments of the Conveyancing Act (1919).

Building and neighbourhood amenity

3.19.19 Building envelopes and dwellings must be sited and designed to provide amenity to occupants and to respect the privacy and amenity of adjoining residents. Details of how this is to be achieved must be included with applications for subdivision and dwelling approval. The following should be considered in the preparation of development plans:

a. The use of appropriate landscaping to achieve visual screening, privacy between neighbouring dwellings and to regulate the microclimate.

b. The use of awnings, eaves and verandahs to block summer sun but permit the entry of winter sun into dwellings.

c. The orientation of living areas within and external to dwellings to the north to take advantage of solar access opportunities.

d. Respecting the amenity of adjoining residents by restricting overlooking, overshadowing and unreasonable interference with views.

e. The use of energy efficient building materials.

Servicing

3.19.20 Dwellings that are connected to Sydney Water's water supply must also be connected to the sewer. On-site effluent disposal is not permitted for dwellings that are connected to a reticulated water supply. This is to ensure that the behaviour of residents in the use of water reflects the limited capability of the disposal system.

3.19.21 On-site water collection will be required for all dwellings. Farm dam water collection may be possible and information on construction and licensing is available from the NSW Department of Primary Industries (Office of Water) -'Harvestable right dams'.

3.19.22 It is the responsibility of owners/developers to ensure that they are aware of any implications of being located close to existing or proposed Sydney Water sewerage or water services.

3.19.23 Telephone and electricity services will be required for all dwelling allotments prior to the release of any final plans of subdivision. These services may be provided above ground and the location of poles for service lines must minimise the need for removal of vegetation. Preliminary service corridors must be shown on development applications.

3.19.24 Council is not obliged to provide a domestic waste service to lands contained in this Section of the Plan. A domestic waste service may be considered if the following conditions apply:

a. It is cost effective and the service can be provided at the same unit cost as the residential domestic waste service.

b. The contractor agrees to provide the service.

c. The contractor is not required to enter onto private property.

d. There are no physical constraints to access.

3.19.25 If Council's domestic waste service contractor is to enter onto private property the following conditions must also be met:

a. The owner, or if relevant the Owner's Corporation, must provide an approval in favour of the Council and its Contractor to enter the property and must provide an indemnity of the Council and the Contractor against claims for loss or damage to property or injury to any person as a result of lawful entry.

b. Access must be via a loop road providing continuous travel in one direction from entry to exit. If Council believes provision of a loop road is not feasible then either an approved truck turning bay must be provided within the site or the designated presentation area must be located not more than 20 metres from the street frontage.

c. Cul-de-sacs must have turning circles with a minimum radius of 10 metres (exclusive of kerb width).

d. 240 litre Mobile Garbage Bin's (MGBs) are to be located such that they are able to be serviced safely on the left side of the vehicle.

e. Footpath, roadways and bin bay collection areas should have a preferred maximum grade of 17%.

f. Footpath (collection areas) should have a maximum cross fall of 6%.

g. The truck must not encroach onto the roadway during servicing.

h. The collection area (including driveway the truck is stationary on) must have a grade less than 17%.

i. Driveways and gate openings must be no less than 3.5m wide.

j. Driveways must be designed and constructed to withstand the loads imposed by a fully loaded rigid truck (17 tonnes).

k. Developers wishing to gain a domestic waste service should contact Council's Waste Management Officer early in the subdivision planning process.

Erosion control

3.19.26 Appropriate erosion control will be required during subdivision and dwelling construction. A 'Soil and Water Management Plan' will be required prior to the issue of any construction certificates for subdivision (this will be a condition of development consent). The installation of run-off and erosion controls to prevent soil erosion, water pollution or the discharge of loose sediment on surrounding land will be required as a condition of any consent issued for the erection of dwellings on the allotments.

3.19.27 The following statements are to be included in literature for the sale of allotments:

a. Weed invasion is a threat to native bushland. The dumping of lawn clippings and rubbish in bushland is not permitted and the use of self-seeding exotic and introduced species (e.g. coral trees, poplars and pine trees) in domestic gardens is discouraged.

b. Fallen trees and bush rock provide important habitat for native ground dwelling species. The removal or such items from bushland for use in wood-burning stoves, barbeques or landscaping is discouraged and in the case of bush rock, may be a breach of the *Threatened Species Conservation Act.*

c. The unsympathetic use of bushland can cause degradation. The inappropriate use of bushland, for example, trail bike riding, is discouraged.

d. Small rural allotments may be used for the keeping of livestock or horses on a small scale. Publications by Horses SA 'Management Guidelines for Horse Properties' and NSW Department of Environment & Climate Change 'Environmental Management for Horses' and NSW Department of Primary Industries 'Primefacts' provide practical information to assist in minimising impacts from livestock, particularly on riparian values.

e. Domestic animals are a threat to native species. The keeping of domestic animals that cannot be contained is discouraged.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 4 - SUBDIVISION - INFILL AND GREENFIELD

The provisions of this Chapter apply to Torrens subdivision which generally applies to development over ground level only for uses such as single lot dwellings, dual occupancy and multi dwelling housing.

Other types of subdivision include:

1. Stratum subdivision: mixed use developments may be stratum subdivided. This allows different uses to be separated to allow for future individual strata plans for residential, commercial and retail for instance.

2. Strata Subdivision: this generally applies to dual occupancy, multi dwelling housing, residential flat buildings and involves the subdivision of land/buildings into lots and common property. Lots generally comprise the dwellings/private open space and common property generally comprises things like driveways, visitor parking, elevators, etc.

3. Community title subdivision: where a development will have facilities to be shared for future occupants, a Community Titles Subdivision should be made in conjunction with the development application.

A development application for Torrens, strata, stratum or community title, can accompany the development application for construction.

In addition to development consent for subdivision and to register a plan of subdivision, consent will be required under the respective legislation for each type of subdivision (e.g. strata). Relevant professionals such as surveyors need to be consulted.

NOTE: Users of this Chapter should also refer to Councils' Subdivision Design Code. Section 3.21 titled Residential development in non-urban areas, should be referred to for subdivision in non-urban areas.

4.1 - Torrens subdivision

Objectives

1. To ensure that all lots created can accommodate the functions associated with residential use.
2. To minimise the risk of injury to persons and damage to property from the adverse impacts of bushfire.
3. To adequately manage disposal and minimise damage and pollution by stormwater to property and the natural environment.
4. To ensure that avoidable risks associated with public access and infrastructure are minimised.
5. To ensure the risks of flooding are minimised.
6. To provide for the efficient location of public utilities to each allotment.
7. To encourage shared (common) trenching and reduce restrictions on landscaping within road reserves.
8. To design and develop neighbourhoods which promote walking and cycling to daily activities.

9. The subdivision must be designed so that any identified significant vegetation (e.g. Endangered Ecological Communities, vulnerable, threatened and regionally significant species) are retained and or will not be adversely affected by future residential development.

10. To have regard for amenity levels on lots adjoining battleaxe lots

11. To provide adequate pedestrian access for users of battleaxe lots

12. To manage vehicular access within and at the entry to battleaxe lots

13. To ensure access handles are visually acceptable

14. To ensure waste servicing is contained within the access handle road frontage

15. To minimise visual impact associated with excessive cut and fill

ADVICE

Orientation

4.1.1 Where possible, the subdivision is to create opportunities for the northern orientation of dwellings.

Building envelope

4.1.2 A minimum building envelope of 10 metres x 15 metres must be provided behind the building lines for each lot to be created. For building lines applying to a site refer to **Section 3.2**, Building lines and boundary setbacks.

Battleaxe lot dwelling design and driveway construction

4.1.3 Where subdivision creates a battleaxe lot, it must be demonstrated to Council's satisfaction that a future dwelling on the proposed battleaxe lot can be designed so it does not have an adverse impact on neighbouring properties by way of overshadowing or overlooking. In this regard, Council may require conceptual design details of a future dwelling with the subdivision development application, or may impose conditions of development consent constraining the design of a future dwelling where the context of the site warrants such action.

4.1.4 Construction of driveways are to be consistent with Council's requirements prior to the release of a subdivision certificate.

Battleaxe lot design

NOTE: for the purpose of the provisions under Battleaxe lot design, the access handle includes the full length of the driveway.

NOTE: dwelling entitlement is based on the minimum lot size provisions of LEP 2013

4.1.5 Access handles servicing 1 dwelling or a 1 single dwelling entitlement lot, must be a minimum 4.2 metres in width, comprising a 2.7 metre wide carriageway, a .5 metre wide pedestrian path on one side and a 0.5 metre wide landscape strip on both sides.

4.1.6 Access handles servicing 2 to 4 dwellings or a 2 to 4 dwellings entitlement lot, must be a minimum 4.8 metres in width, comprising a 2.7 metre wide carriageway, a .7 metre wide pedestrian path on one side and a 0.7 metre wide landscape strip on both sides.

4.1.7 Access handles servicing more than 4 dwellings or a greater than 4 dwellings entitlement lot, must be a minimum 5.4 metres in width, comprising a 2.7 metre wide carriageway, a 0.7 metre wide pedestrian path on one side and a 1 metre wide landscape strip on both sides.

NOTE: Where the access handle adjoins a dwelling or its curtilage, a landscape strip is not required on the dwelling/curtilage side.

4.1.8 Passing bays will generally not be required on access handles servicing up to 3 dwellings unless the access handle is over 40m long and/or vehicular access is from a main and/or busy road in which case a passing bay may be required to avoid vehicles reversing onto the road to give way to an oncoming forwarding vehicles exiting the site.

NOTE: Council's traffic staff will determine whether a road is classed as busy on a case by case basis.

4.1.9 Passing bay(s) independent of landscaping and pedestrian paths will be required on access handles servicing more than 3 dwellings.

4.1.10 The pedestrian strip must be located according to expected desire lines from dwelling(s) to the street and be clearly distinguishable from landscaping and the carriageway.

4.1.11 All lots/dwellings accessed off an access handle must provide unimpeded space for at least one visitor parking space.

4.1.12 All lots/dwellings accessed off an access handle must provide sufficient manoeuvring within the lot, independent of the access handle, to enter and leave the site in a forward direction.

4.1.13 Access handle width at the kerb must be wide enough to contain the placement of all waste bins from dwellings accessed via the handle. In this respect a minimum of 1.5m of kerb frontage must be provided for the placement of 2 bins for each dwelling within the width of the access handle at the kerb.

NOTE: Development of battleaxe lots with any existing development will need to also satisfy the provisions under Battleaxe lot design.

Utilities

4.1.14 Utility services (including sewerage, water, electricity, street lighting, telephone and gas services) must be designed and installed to the specific standards and requirements of the relevant servicing authority.

4.1.15 Utility services (including sewerage, water, electricity, street lighting, telephone and gas services) are to be provided / installed prior to the issue of a subdivision certificate.

Site facilities and servicing

4.1.16 Allotments located within a bulb, or part thereof, of a cul-de-sac, the head of a T or Y shaped no-through road or which utilise part or the full length of a battleaxe type driveway or access handle must design to allow adequate frontage for kerbside waste collection so there is no adverse impact on neighbouring properties. Refer to **Chapter 15** on Waste Minimisation and Management.

Pedestrian/cycleway facilities

4.1.17 Pedestrian and cycle facilities may be required to be provided by the developer in accordance with Council's Shared Use Path Strategy.

Steep sites

4.1.18 Cross slope should be no more than 5% on proposed lots. Where this cannot be achieved it must be demonstrated that future development can meet the objectives of this DCP related to cut, fill and retaining walls.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 5 - GREENFIELD SUBDIVISION

Objectives

1. To ensure designing with the environment is achieved.
2. To ensure that all new residential subdivisions are co-ordinated and maximise residential amenity by ensuring that roads, public transport, community facilities, open space facilities and pedestrian and cycle networks are integrated and satisfy Council's projected needs.
3. To ensure the logical and economic phasing of development.
4. To ensure that land capability, residential amenity and economic and social desirability issues are addressed.
5. To ensure that each proposed allotment can accommodate all the functions associated with a dwelling.
6. To encourage the opportunity for a variety of lot sizes, housing styles and forms in appropriate locations for the full range of consumer demand.
7. To promote energy efficient subdivision design and thereby maximise opportunities for solar access and energy efficient housing.
8. To ensure that public assets and infrastructure are provided as a long-term investment for the community.

5.1 - Lot density, size and orientation

Objectives

1. Allotments are to be of a size and dimension to allow for a diversity of housing forms, densities and lifestyle choices.
2. Lot orientation is to achieve opportunities for energy efficiency through solar access.
3. Allotments are of sufficient area and shape to enable efficient siting of a dwelling and provision for outbuildings, acceptable private outdoor space, vehicle access and parking.
4. Ensure allotments provide adequate area for vehicle access, site facilities and servicing requirements.

ADVICE

General

5.1.1 A mix of residential frontage widths must be provided.

5.1.2 Orientation of allotments must attempt to maximise solar access. Skewed allotments may be considered. See (**Figure 5.1** below).

5.1.3 Larger lots may be required where there are special environmental considerations such as tree preservation or fauna protection

5.1.4 Allotments with north/south orientation may be narrower and longer to take advantage of solar access potential. (See **Figure 5.2** below).

5.1.5 Allotments with an east/west orientation may be wider and shorter to ensure that sufficient solar access opportunities are achieved on site (see **Figure 5.2** below).

5.1.6 Initial creation of super lots, including for small lot (integrated) housing, will be considered,

5.1.7 Large integrated housing lots should be designed so that future garages and carports can be located at the rear of the lot with vehicular access to the rear. For safety, vehicular access design must provide drivers with good visibility of pedestrians and vehicles

Battle axe lot requirements

5.1.8 Direct full boundary access to open space where practical.

NOTE: Higher densities are encouraged to be located in areas closer to shops, parks, community facilities and public transport except where vehicular access is provided directly from a major collector or higher order road.

Figure 5.1 - Skewed lots

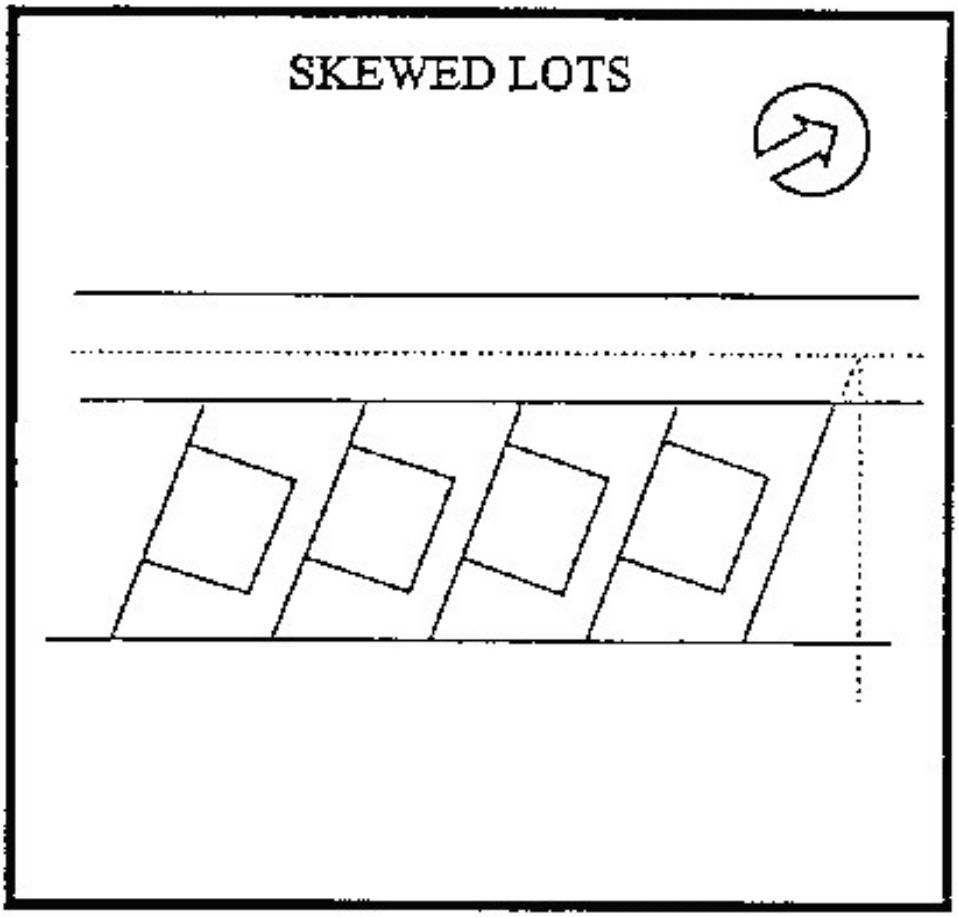
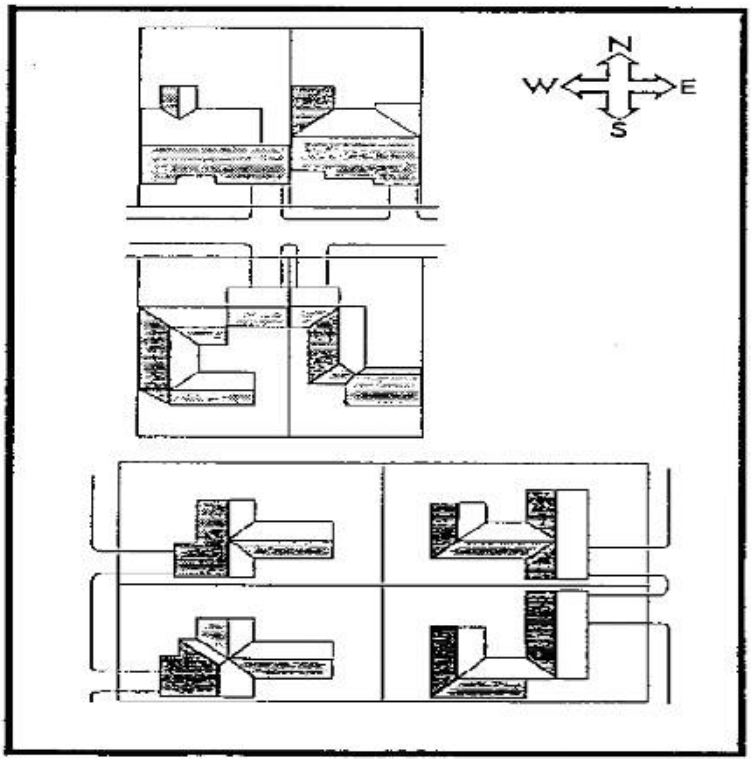


Figure 5.2 - Lots with north - south or east - west orientation



5.2 - Transport networks

Objectives

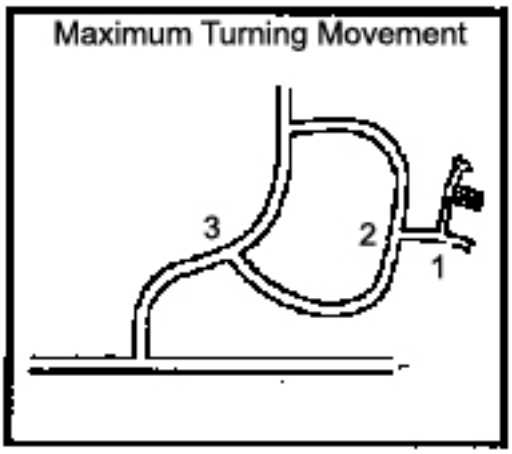
1. To provide efficient and safe roads for all road users which are consistent with their function within the road network.
2. To provide a safe, convenient and legible pedestrian and cyclist network linking residential areas, activity centres and open space systems.
3. To provide for accessible and efficient bus routes.
4. To minimise through traffic in residential neighbourhoods.

ADVICE

5.2.1 At least 90% of dwellings must be within 400m walking distance from an existing or potential bus route.

5.2.2 Where more than three turning movements at intersections or junctions are required in order to travel from any address to the most convenient collector street or higher order road, acceptable justification is required.

Figure 5.3 - Maximum turning movements



5.2.3 Internal intersections must be either T-junctions or roundabouts.

5.2.4 Maximum turning movements should be as per the above **Figure 5.3**.

5.2.5 The road network must conform to any master plan that may exist for the area.

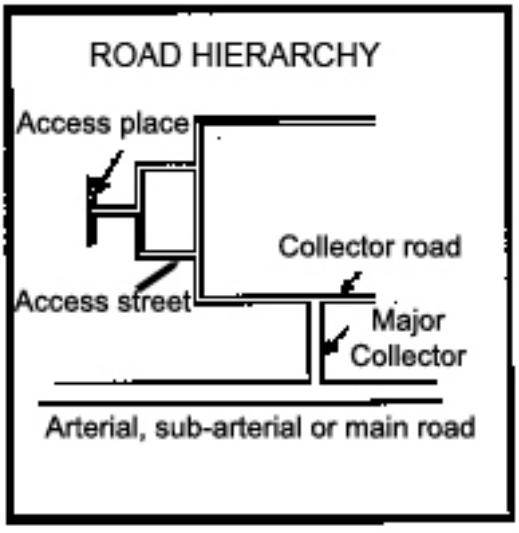
5.2.6 The design of residential streets must:

a. generally, observe the road hierarchy

b. reinforce the function of the street

c. encourage appropriate driver behaviour.

Figure 5.4 - Road hierarchy



5.2.7 Where subdivision development is to be staged and a bus service is required, temporary facilities must be provided to enable buses to turn so that public transport can be provided whilst estates are developing.

5.2.8 Where 'pods" of residential development are proposed, adequate vehicular access points and internal/external pedestrian and cyclist links must be provided.

5.2.9 The creation and location of major collector or higher order roads will be negotiated. Assessment will be made after it has been demonstrated that the following issues have been addressed:

a. Accessibility

b. Noise

c. Safety (for all road users)

d. Preventing segregation of the community by the road.

e. Preventing significant through traffic (particularly commercial and industrial through traffic) through residential precincts.

f. The location of community facilities and activity nodes.

5.2.10 The road network must be designed to take advantage of any view that is offered by the local environment.

5.2.11 The location and type of access to any classified road will require negotiation.

5.2.12 The subdivision must comply with any Council Pedestrian and Cyclists Masterplan/Shared Use Path Strategy.

5.2.13 Road hierarchy design should consider the above **Figure 5.4**.

5.3 - Street design and construction

Objectives

1. To provide sufficient road reserve, carriageway and verge widths to allow roads to perform their designated functions within the road network, including movement, parking, residential amenity, public utilities provision and landscaping.
2. To allow all users of the road (motorists, pedestrians and cyclists) to proceed safely, conveniently and without undue delay.
3. To accommodate sufficient on-street parking.
4. To accommodate public utility services and drainage systems.
5. To ensure that safe and convenient vehicular access is available to each allotment.
6. To minimise road construction and maintenance costs.
7. To ensure that avoidable risks associated with public assets and infrastructure are minimised.

ADVICE

5.3.1 Street design details must generally be in accordance with the provisions of **Table 5.1**.

5.3.2 Notwithstanding the provisions of **Table 5.1** (characteristics of street types) a minimum verge width of 2m may be considered where meandering carriageways within a uniform road reserve are proposed.

5.3.3 The road geometry must reflect physical land characteristics where possible while satisfying safety and speed criteria.

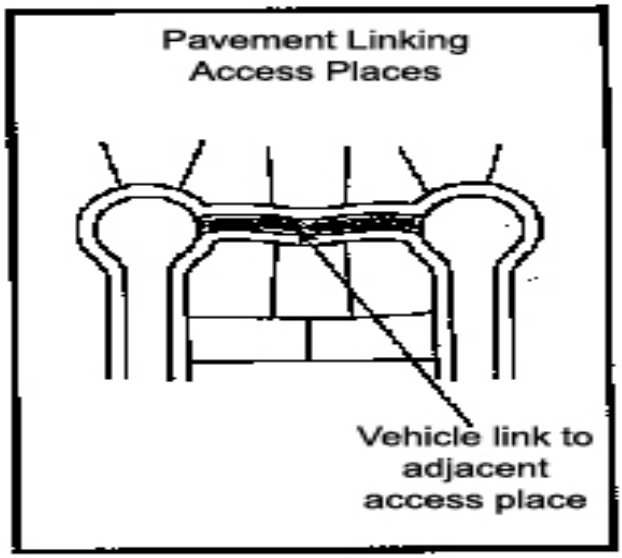
5.3.4 Cul-de-sac design must consider incorporating low speed pavement links, 3.5m wide, which should:

a. be in the order of 60m

b. maintain a 12m road reserve

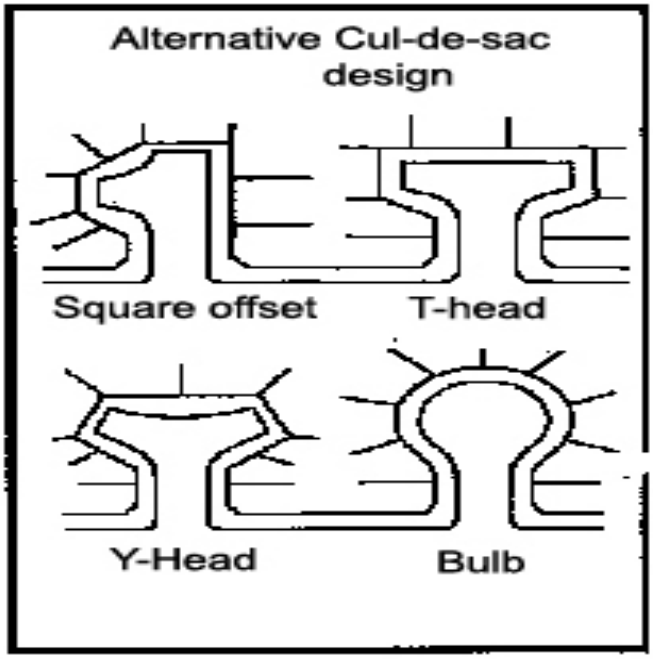
c. have allotments addressing the roadway.

Figure 5.5 - Pavement linking access places



5.3.5 Cul-de-sac heads must be designed with vehicle linkages and to minimise the need for large irregular shaped allotments. Consider the **Figures 5.5 and 5.6**.

Figure 5.6 - Alternative cul-de-sac design



5.3.6 Rear fences fronting major collector roads are discouraged. Where there is no alternative, consideration will need to be given to pedestrian safety issues and additional verge width for landscaping.

5.3.7 Shareways will only be supported where:

a. they have frontage to a public reserve

b. residential development is located on one side only

c. traffic short cuts are not created

d. lengths do not exceed 100m.

5.3.8 The use of traffic calming devices along access places and access streets will only be supported where it is demonstrated that the facilities are required to achieve a safe road and traffic environment.

Table 5.1 - Characteristics of street types

Street	Access Place	Access Street	Collector	Major Collector
Capacity - traffic (v.p.d) *1	300 (max)	1500 (max)	3000 (max)	> 3000
Lots	30 dwellings	150 dwellings	300 dwellings	Generally no access to single residential allotments
Design speed (kph) *2	40	40	60	60
Widths (m) **Verge** **Carriageway** **Verge** **Reserve** *4	 3 6 3 12	 3.5 8 3.5 15	 3.5 9 *3 3.5 18	Road geometry and access status subject to individual negotiation
Parking Provisions within street reserve	In carriageway	In carriageway	In carriageway	
Kerbing	Roll top / Flush	Roll top / Flush	Barrier kerb	Barrier kerb
Footpath provision	No	1.2m wide *5	1.2m wide	Footpath as required by the footpath masterplan

*1 Traffic generation based on 10 v.p.d for each lot.

*2 Excludes combinations of vertical and horizontal curves.

*3 Carriageway width may be increased to 10m for major bus routes.

*4 Verge widths may vary within uniform road reserve to achieve improved aesthetics, traffic management or streetscape. Minimum footpath width 2m.

*5 As depicted on pedestrian/cycleway plan and always if 1000 v.p.d is exceeded.

NOTE: Depending on downstream and upstream infrastructure, alternative water sensitive urban design principles for street drainage are encouraged to be considered in conjunction with the road design in urban fringe areas.

5.4 - Pedestrian and cyclist facilities

Objectives

1. To provide a safe, accessible convenient and easily understood network of all-weather paths for pedestrian and cyclist movement within and beyond the neighbourhood.
2. To design and develop neighbourhoods which promote walking and cycling to daily activities.
3. To ensure that avoidable risks associated with public assets and infrastructure are eliminated.

ADVICE

5.4.1 A cycle and pedestrian facilities plan must be prepared having regard for the following: (any master plan must include the schematic cycle/pedestrian network):

a. The need to link residential neighbourhoods, open space networks and activity centres.

b. The desirability of designing on the basis of the most direct route available, within safety, accessibility and design guidelines.

c. Guidelines relating to appropriate gradients for cycle paths.

d. The need to respect environmental features including the preservation of trees.

e. The avoidance of cycle and pedestrian paths being located at the rear boundaries of residential allotments and through public reserves with poor security.

f. The opportunities presented by the location of collector and lower order roads.

5.5 - Utilities

Objectives

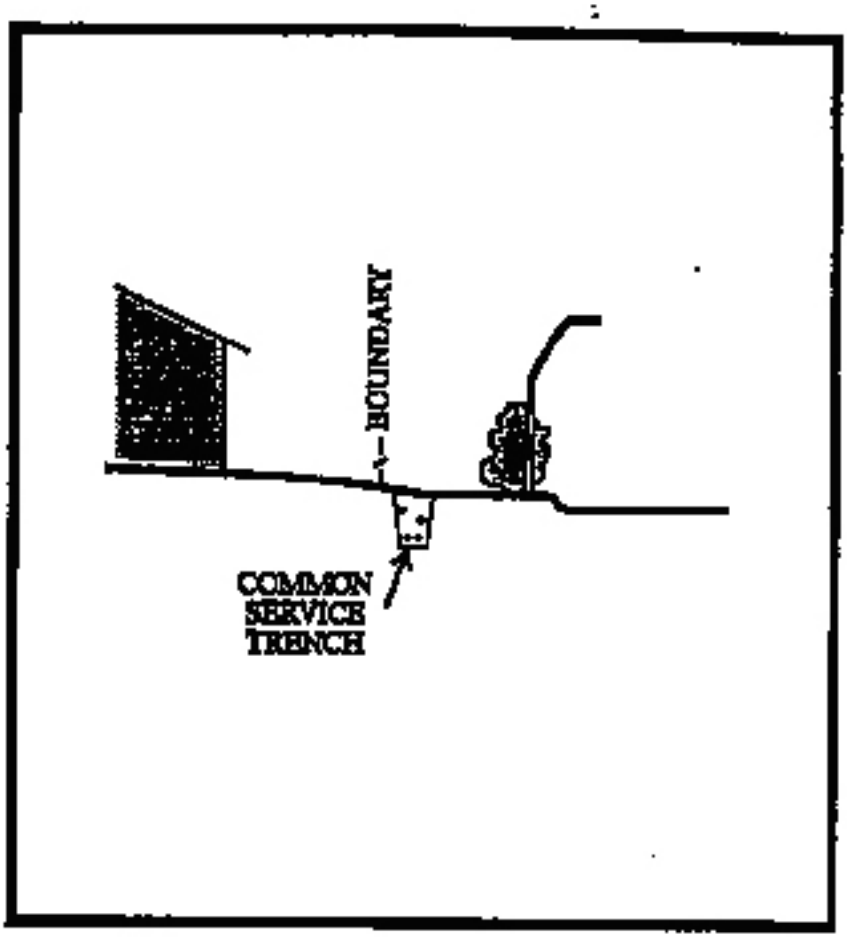
1. To provide for the efficient location and installation of public utilities to each allotment.
2. To encourage shared (common) trenching and reduce restrictions on landscaping within road reserves.

ADVICE

5.5.1 Utility services (including sewerage, water, electricity, street lighting, telephone and gas services) must be designed and installed to the specific standards and requirements of the relevant servicing authority.

5.5.2 Compatible public utility services are encouraged to be co-ordinated in common trenching in order to minimise construction costs for underground services. See **Figure 5.7** below.

Figure 5.7 - Common service trench



5.5.3 Streetscape schemes, including tree planting, must take into account any restrictions imposed by the location of underground services.

5.5.4 The design of street lighting as part of a thematic streetscape plan is encouraged in access streets and places.

5.5.5 Residential subdivisions must have adequate water supply services for domestic and firefighting purposes.

5.5.6 Utility services (including sewerage, water, electricity, street lighting, telephone and gas services) are to be provided / installed prior to the issue of a subdivision certificate.

5.6 - Environmental site management

Objectives

1. To minimise environmental degradation as a consequence of alterations to natural landforms.
2. To enhance the physical appearance of residential development by retaining significant natural features, including established trees and vegetation.

ADVICE

5.6.1 Development must comply with state government agency standards.

5.6.2 Approved sediment controls must be in place prior to the commencement of any construction works.

5.6.3 Development must comply with the provisions of the tree preservation/removal provisions of the Shellharbour LEP and this DCP.

5.6.4 A plan must be submitted showing existing significant vegetation and plant species in relation to the subdivision layout.

5.7 - Public open space

Objectives

1. To ensure adequate provision and distribution of public open space which is appropriately sized, in convenient locations and of a quality to meet the recreation needs of the community.
2. To encourage multiple use of open space for recreation and major drainage networks and water quality facilities, provided that both the land and the uses are considered compatible.
3. To ensure that open space facilities, including multiple use sites, are designed for landscape elements.
4. To encourage opportunities to link open space networks with community facilities and residential precincts.
5. To encourage the retention and incorporation of significant natural and cultural features, such as existing vegetation, foreshores, ridgelines, Aboriginal sites, etc., within open space networks.
6. To provide open space networks that can be economically maintained.
7. To ensure that avoidable risks associated with public assets and infrastructure are minimised.

ADVICE

5.7.1 Council's Section 94 Contributions Plan must be referred to, to consider if an open space contribution is required and if so, the amount of open space to be provided. The basic premise is that 90% of all residential lots are within 400m walking distance to an open space area. The proximity of the development to the existing open space will be considered as part of the assessment.

NOTE: Where there is adequate existing open space to support the development, the provision of additional open space may not be required and a monetary contribution will be levied toward the upgrade of existing open space areas as per the Section 94 Contributions Plan. Contact Council staff for further information. Council reserves the right to not accept land it considers unsuitable.

5.7.2 Council's *Open Space, Recreation and Community Facilities Needs Study Report* should be referred to, to determine the appropriate location, type and design of open space to be provided.

5.7.3 An open space plan must be prepared and submitted with the development application having regard for the requirements outlined in Council's *Open Space, Recreation and Community Facilities Needs Study Report, Appendix B - Parks & Recreational space Guidelines,* addressing the following:

a. The location of any natural or cultural features.

b. The opportunity for multiple usage.

c. The creation of pedestrian/cyclist links throughout the subdivision where these are not able to be provided via the road network.

d. The Design Principles for Parks (Appendix B of Council's *Open Space, Recreation and Community Facilities Needs Study Report).*

e. The need to minimise maintenance costs through appropriate siting and design.

f. The preference for reserves to have road frontage as opposed to having boundaries to the rear of residential allotments.

g. The location of existing open space areas.

h. The need to provide public open space of a useable size.

i. The need to provide activity opportunities for a range of age groups.

j. Any existing endorsed master plan for the development.

k. Proposed embellishments.

5.7.4 Subdivision design must avoid the creation of open space areas which do not serve a public purpose in accordance with Council's Open Space, Recreation and Community Facilities Needs Study and Section 94 Plan. For instance, excessively steep or remote areas and certain drainage areas will normally be required to be designed to be not part any land to be dedicated to Council.

Council will only accept open space which accords with the Open Space, Recreation and Community Facilities Needs Study, Section 94 Plan and this DCP. This must be resolved conceptually at development application stage prior to any development approval.

Council will also consider accepting open space which contains prescribed tree(s) subject to being satisfied with a proponent's arborist report and especially if the tree location is contiguous or within open space according with the Open Space, Recreation and Community Facilities Needs Study, Section 94 Plan and this DCP.

NOTE: See Chapter 21 – Preservation and removal of trees, for definition of prescribed.

Full detail of open space design/embellishment must be submitted to Council prior to any dedication of land/assets to Council. This detail must be to the satisfaction of Council in respect to:

a. Assets renewal and maintenance

b. Community safety

c. Landscape design and maintenance

d. Property administration and ownership

5.8 - Assets maintenance and repair schedule

Objective

1. To minimise maintenance and repair liability for assets created with subdivision

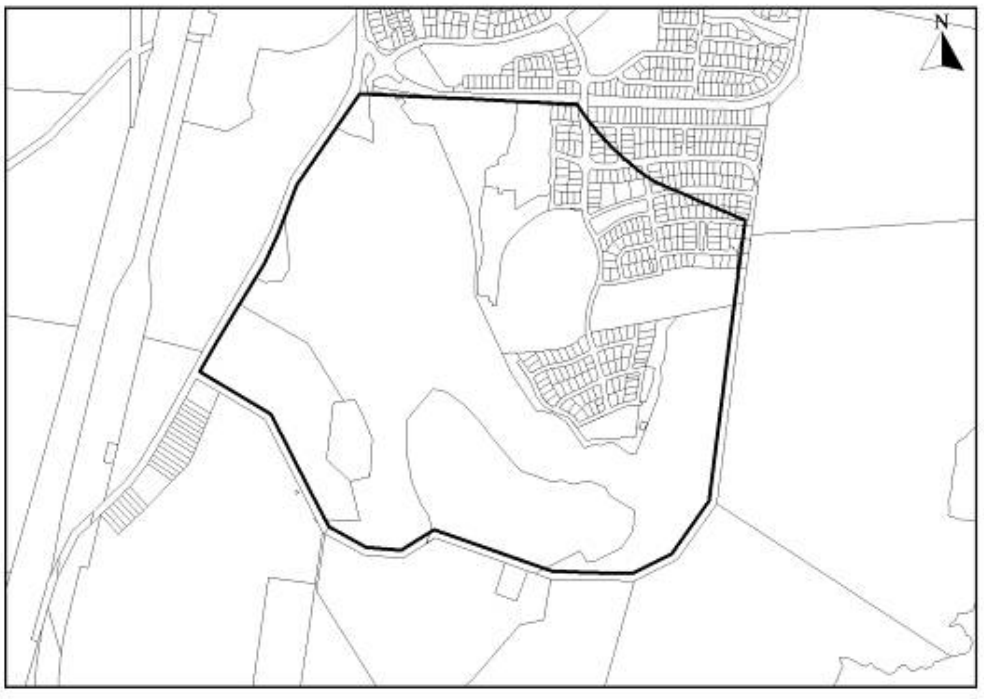
ADVICE

5.8.1 Council will require for any proposed subdivision proposing the dedication of any asset(s) to Council, the proponent to submit with the development application a draft assets maintenance and repair schedule. This may address but not necessarily be limited to natural and constructed assets relating to open space, drainage, retaining walls and road reserves. The schedule must account for asset lifecycle.

5.9 - Subdivision in Dunmore Wetlands Catchment Protection Area

This section refers to land in the Dunmore Wetlands Catchment Protection Area, as identified in **Figure 5.8** below. The following provisions apply to all subdivision development on undeveloped land in this area.

Figure 5.8 - Dunmore Wetlands Catchment Protection Area



The following provisions are to be met by all developments within the Dunmore Wetland Catchment, so as to protect and enhance the ecological values of both the wetland and areas of remnant vegetation.

The Dunmore wetland is identified under the State Environmental Planning Policy (SEPP) No. 14 – Coastal Wetlands and is designated as Wetland No. 374b within the map referred to in that policy. The Wetland area supports two endangered ecological communities; Sydney Coastal Estuarine Swamp Complex and Sydney Freshwater Wetlands. The catchment also includes an elevated knoll, which supports remnant rainforest vegetation (Illawarra Subtropical Rainforest) that is under

preliminary determination as an endangered ecological community. The catchment also contains threatened plant and animal species including migratory birds.

Objectives

1. To maintain or improve the physical, chemical and biological processes of the wetland, ensuring that water entering the wetland and remnant vegetation areas is of high quality and sufficient quantity and will not contain excessive nutrient or pollutant levels.
2. To ensure the protection of flora and fauna and ecological communities listed as under the *Threatened Species Conservation Act 1995*.
3. To ensure the protection of the habitat value of the wetlands for migratory birds listed under the *Environment Protection and Biodiversity Conservation Act 1999* and other native fauna that utilise the wetland.
4. To ensure the knoll of remnant vegetation (Illawarra Subtropical Rainforest), located in the E3 Environmental Management Zone, maintains habitat integrity with similar native vegetation within the Killalea State Recreation Area.
5. To protect and enhance Aboriginal, European and environmental heritage sites and areas found within the catchment.
6. To encourage development designs that promote the safety of people, premises and environmental quality through the application of principles of Ecologically Sustainable Development.
7. To provide a high level of connectivity, whilst promoting energy efficiency and safety through design and protecting the ecological values of environmentally sensitive areas within the catchment.
8. To implement and maintain effective pollution control measures throughout any development to protect the surface and ground water quality of the Catchment Protection Area.
9. To maintain surface and ground water flow regimes so as to maintain the natural cycle of fluctuations in water level within the wetland and remnant vegetation.

ADVICE

General

5.9.1 Subdivision design will incorporate measures that control the movement of stormwater discharge, fertilisers, weeds and other pollutants into environmentally sensitive areas.

5.9.2 Subdivision design will protect and enhance the habitat value of the catchment.

5.9.3 Subdivision design will promote energy efficient design and thereby maximise opportunities for solar access and energy efficient housing.

5.9.4 Residential amenity must be maximised by ensuring that the overall subdivision design has a high level of connectivity, promoting efficiency and safety, whilst accommodating a range of transport modes. The design must integrate with the road and pedestrian network external to the site.

5.9.5 Subdivision design must ensure a high level of visual amenity, both internal and external to the site, by avoiding visually intrusive development.

5.9.6 Subdivision design will take into account the location of any Aboriginal and/or European heritage sites and landscapes and include measures to protect them.

5.9.7 Subdivision design will promote water conservation.

5.9.8 Where residential development is proposed on land that will drain into the E3 Environmental Management zoned remnant vegetation, stormwater control measures should be in place to ensure that both water quality and quantity should protect or enhance the remnant vegetation.

5.9.9 Where residential development lies down-slope of the E3 Environmental Management zone land, design of the boundary interface will be sensitive to the encouragement of passive surveillance and the creation of a sense of ownership, connectivity and stewardship of the E3 Environmental Management zoned land. This may be achieved through careful lot and road orientation, fence construction that is open rather than enclosing and an overall environmentally sympathetic design approach by the developer.

5.9.10 The road to Shell Cove Stage 6/2 residential area must be designed to have minimal adverse impact on the E3 Environmental Management zoned land. Only one road must link Stage 6/1 and Stage 6/2 residential areas and the route of service easements must not disturb remnant vegetation within the E3 Environmental Management zoned land. All service easements must be rehabilitated to pre-excavation surface soil levels. The relevant adjacent LEP Environmentally zoned land is to be purchased by Council and classified as community land, for the primary purpose of passive recreation and the conservation of native fauna and flora.

5.9.11 A subdivision application will include design details which address but are not limited to:

a. passive surveillance opportunities from the residential development over the E3 Environmental Management zoned land, the wetland and the golf course

b. management of public access to the environmentally sensitive areas

c. the management of natural drainage lines

d. energy efficiency opportunities through lot orientation

e. the maximisation of visual amenity to residents

f. opportunities to connect landmarks and visual characteristics within the catchment, such as the 'Killarney' homestead and the linking of the knoll open space with the Killalea State Recreation Area

g. the incorporation of the remnant fig tree from the 'Condons Farm' site, into the design of the sub-division landscape, including measures for its protection from damage during the construction phase.

5.9.12 Development should ideally be restricted to land with gradients not exceeding 20% and any development on slopes exceeding 20% will require details of engineering solutions and a stability assessment by an appropriately qualified geo-technician.

ADVICE

Soil and water quality

5.9.13 A Soil and Water Quality Control Plan must demonstrate how identified water quality and other environmental objectives will be maintained during and after development. The precautionary principle must apply, whereby lack of scientific certainty must not be a reason for postponing measures to prevent environmental degradation.

5.8.14 Erosion and sediment mitigation measures must be designed and implemented to prevent adverse impacts on wetland ecosystems through storm-water and surface run-off during land disturbances as occurs during subdivision and construction.

5.9.15 A Soil and Water Quality Control Plan submitted with a development application for subdivision of the undeveloped land within stage 6 should include:

a. an assessment of the total storm-water volumes and sediment loads likely to be generated by the proposed development. The applicant will need to demonstrate the adequacy of stormwater drainage and water quality treatment devices, over a full range of potential climatic conditions, to ensure wetland environmental indicators remain within acceptable ranges

b. details of measures proposed to intercept urban run-off from developed lands and any water quality treatment devices proposed within the catchment

c. details of a Pollution Management Plan that aims to reduce contaminant levels in groundwater and surface run-off through proven erosion control measures. This will include mitigation measures to suppress dust generation and containment of any chemical discharge. For example, civil engineering materials and other materials used in the construction of the residential development will exclude materials with potentially harmful leachates and encapsulated waste as these may contaminate the water table

d. details of identified physical, chemical and biological environmental indicators, the monitoring programs, their frequency and duration, the methodology and the qualified person(s) responsible for collecting and analysing the data

e. a detailed plan of mitigation measures to be implemented if environmental indicator(s) reach unacceptable levels. The plan will include the environmental responsibilities of building contractors, sub-contractors and any other personnel involved in the subdivision, construction and development operations

f. details of the soil treatment measures that will be taken to protect the topsoil's natural seed-bank and avoid the introduction of weeds into the catchment. Where possible excavated topsoil should be stockpiled and reused on site.

5.9.16 A geo-technical assessment of the areas that are proposed for subdivision will be required. Such assessment will need to be conducted by a suitably qualified professional.

5.9.17 Any proposed development that may disturb soils to a depth below four metres AHD or any works specified in the Acid Sulphate soils clause of the LEP, must provide a detailed assessment of the likely presence of acid sulphate soils and how if encountered, such soils will be managed. Excavation below this level requires a certificate from a suitably qualified person stating the status of acid sulphate soils on the site. This information must form part of the information lodged with Development Applications and must be assessed by relevant state government agencies.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 6 - COMMERCIAL DEVELOPMENT

6.1 - Town Centres

Objectives

1. Intensification of business, retail, tourist, food and drink premises development
2. Optional forms of mixed commercial/residential development
3. Active street and lane frontages
4. Vibrant public domain
5. High pedestrian activity day and night
6. High levels of pedestrian amenity
7. Varied and interesting active and semi active street level uses
8. Varied and interesting building design
9. Contemporary building design that draws on a centre's attributes
10. Maintain and enhance existing character where appropriate
11. Integrate private and public domain
12. Suitable colours and materials specific to individual centres
13. Facilitate and enhance links between destinations
14. Provide a sense of enclosure at street level

Note: Consultation must occur with Council's Property Department for any proposed use of the public domain, including airspace over footpaths, for instance alfresco dining, awnings, verandahs, balconies and use of laneways.

Note: Some individual centres have specific objectives found in the provisions specific to local centres. These must be accounted for in addition to the above objectives.

Application of this section and the following sections 6.2 – 6.6

This section and the following sections 6.2 – 6.6 of the DCP has provisions for local business centres, some adjoining areas and neighbourhood business centres. There are specific provisions for local business centres are at Albion Park, Albion Park Rail, Oak Flats, Shellharbour Village, Warilla and Warilla Grove. Neighbourhood centres are throughout the urban area.

These provisions apply to the B2 Local Centre zonings and B1 Neighbourhood Centre zonings. For Shellharbour Village, there are also provisions for some adjoining RE1 Public Recreation zoned land. For Warilla and Warilla Grove, there are provisions for adjoining B5 Business Development zoned land. For Albion Park there are front building line provisions for residential zoned land adjoining the Albion Park Town Centre.

ADVICE

Awnings, recessed balconies and verandahs

6.1.1 Any awnings above ground floor level can only be over a window and can protrude maximum 500mm from the outer wall of the building.

Note: Street level awnings are defined as a street level overhanging cover over a window or doorway or all/part of the street frontage. Awnings are not post supported.

Note: Recessed balconies are open or semi enclosed floor areas above the second storey and must not protrude beyond the outer wall of the building.

Note: Verandahs are defined as street level or second storey post supported overhanging covers over part or all of the street frontage of a building and include any second storey decking on top of the overhang.

6.1.2 Verandahs must have hip, gable or skillion roofing and be post supported.

6.1.3 Verandahs are not encouraged in Albion Park Rail, Oak Flats and Warilla as these centres are not currently or planned to be characterised by verandahs.

6.1.4 Shellharbour Village and Albion Park allows for verandahs. See centre specific provisions.

6.1.5 Verandahs are not permitted above the second storey.

6.1.6 The outer face of awnings and verandahs must be setback at least 600mm from the vertical face of Council's kerb and gutter.

6.1.7 A minimum unobstructed width at footpath level must be maintained at no less than 2.8m from the property boundary to any supporting post.

6.1.8 Awnings must complement associated building design and streetscape.

6.1.9 Awnings or verandahs must have an underside not less than 3.2 metres above the street.

6.1.10 Awnings or verandahs must provide weather protection unless characterised as varied awning treatment.

6.1.11 Verandahs, awnings and recessed balconies must not be physically dominant over other building elements in the overall design.

6.1.12 Flooring material to any second storey verandah must be of small section sheet or strip material with sealed joints such as compressed fibrous sheeting, or external grade particle board or well cramped tongue and groove flooring. Suspended concrete slabs are not acceptable.

6.1.13 Generally, neighbourhood centres will require awning treatment which will be considered on merit, including existing character. Verandahs may be considered in neighbourhood centres if existing character is well represented by verandahs.

Note: The specific local centres will require either a consistent or varied awning treatment or a combination of both, as indicated in relevant parts of sections 6.2 – 6.6. In Shellharbour Village and Albion Park Town Centres verandahs will be permitted in lieu of awnings.

Awning locations and types

Note: Awnings significantly affect the amenity and appearance of streetscapes and the pedestrian environment. Continuous awnings provide weather protection along pedestrian routes encouraging a greater level of walkability.

Note: Awnings mediate between the inside and outside and between private and public space. Awnings define and shelter pedestrian space and are a regular characteristic of shops, cafes, hotels and other buildings reliant on pedestrian interaction.

6.1.14 Awning treatments are required in the locations indicated in the provisions for individual centres. In Albion Park and Shellharbour Village, post supported verandahs are an option.

6.1.15 Consistent awning treatments are characterised as follows:

a. Lighting is required on the underside of awnings to supplement existing street lighting and 'spill' lighting from shop-fronts and other ground floor uses.

b. Signs are to be consistent with the overall design of the awning.

c. The awning ceiling and underside of the fascia should generally be consistent.

d. Awning colour is to suit the architecture of the host building and the adjoining awnings.

e. Steps for design articulation and to accommodate sloping streets should be incorporated into the awning treatment.

f. Awnings should be setback to accommodate utility poles, street trees, street lighting and smart-poles.

Figure 6.1 – Examples of conisitent awning treatments



Consistent awning treatment should integrate lighting



Consistent awning treatment integrating signage



Consistent awning and signage treatment complement the building architecture



Main high streets often have consistent awning treatments to define the high street

6.1.16 Varied awning treatments are characterised as follows:

a. Soft canopies can be used rather than rigid canopies
b. not required to integrate signage in design.
c. allows for use of varied colours, styles and sign types.
d. may provide weather protection for shop fronts and diners however is not required to provide consistent weather protection.
e. awnings or canopies should be setback to accommodate utility poles, street trees, street lighting and smart-poles.

Figure 6.2 – Examples of varied awning treatments



Minimal signage reflecting the character of small business



Varied treatments enhancing the character of small business



Soft canopy awning treatments bring variety to laneways



Coloured Canopy treatments bring colour to the streetscape

Tenancy frontages

Note: Multiple varied separate tenancy frontages are encouraged. This is to provide potential for variation and interest along the street or lane.

6.1.17 Tenancy frontage width will have regard to existing lot widths which vary between individual centres. See also provisions for specific centres on tenancy frontages.

6.1.18 Building frontages should be stepped along ground level according to slope.

6.1.19 Awnings and verandah heights should be stepped along ground level in line with stepping the building frontages.

6.1.20 Street level entries must not be recessed more than 600mm from the street boundary.

6.1.21 The level difference between the public footpath and the ground floor must not exceed 600mm at any point on the street frontage.

Signage

6.1.22 Signage location should generally be under awning, on verandah/balcony fascias or under windows.

6.1.23 Signage must comply with the awning treatment provisions in Advice – awning treatments provisons in Advice – Awnings locations and types.

6.1.24 Where relevant development application plans must show the locations for signage.

Location of active and semi active frontages

6.1.25 Active or semi active frontages are required in the locations described/mapped in the provisions for individual centres.

Note: The figures in the following sections for specific centres incorporate LEP 2013's Active Street Frontage mapping as well as additional areas where active street frontage and where semi active frontage should be provided.

Land use for active and semi active frontages

Note: Local Environmental Plan 2013 provides for a statutory active street frontage definition and provisions, including the Active Street Frontage (ASF) mapping. It is mandatory to have an active street frontage where LEP 2013 requires it. Active street frontages in LEP 2013 include a requirement that the frontage be used for business or retail premises.

6.1.26 Subject to being permissible in the zone, desired land uses for semi active frontages include amusement centres, community facilities, child care centres, office premises, entertainment facilities, registered clubs, function centres, medical centres, recreation facilities (indoor), information and education facilities, public administration buildings, veterinary hospitals. Semi active frontage mapped areas can also include active frontage uses.

Elements for active and semi active frontages

6.1.27 The following design elements in association with suitable land uses, should be provided where appropriate to achieve active and semi active frontages:

a. clearly defined pedestrian entries
b. grouping of multiple pedestrian entries
c. integrating any fire door access with the principal access
d. sufficient façade transparency to allow good vision in and out of the building.
e. hole in the wall service points
f. bi - fold doors
g. windowsill seating
h. service counters to the street
i. physically open, transparent and integrating private and public domain
j. visible human presence inside the development or something of interest inside the development, visible from the street
k. highly visible frontage
l. must provide an unencumbered path of travel for pedestrians adjacent to the outdoor dining area with a minimum width of 2 metres

Figure 6.3 - examples of active frontages



Vehicular access

6.1.28 Where legally available, all vehicular access and servicing must be from a rear lane, car park or a side street.

Development on or adjacent to heritage items

6.1.29 Development adjacent to a heritage item, where the item is setback from the street, must include window openings, articulation or other architectural detailing and a rendered or painted finish on the side elevation adjacent to the front setback area of the heritage item. See **Figure 6.4** below.

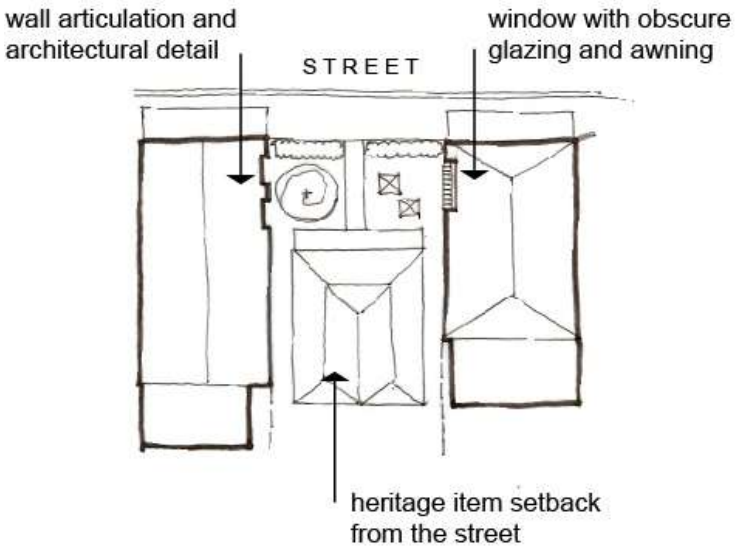


Figure 6.4 - Development adjacent to a heritage item setback from the street

Note: Any buildings selected for removal on lots with or adjacent to heritage items should be evaluated through a separate feasibility study that includes accounting for the relevant Council endorsed town centre plan.

Ceiling height

6.1.30 Some town centre development is not covered by State Environmental Planning Policy 65: Design quality of residential apartment development (SEPP 65). This section of the DCP requires the ceiling height provisions of SEPP 65 to be applied to development that is not covered by SEPP 65. This means SEPP 65 ceiling height provisions apply to non SEPP 65 development, for instance development less than 3 storeys and development that has no residential component.

Roofing

6.1.31 Roofing must not be physically dominant over other building elements in the overall design.

6.1.32 Roof form like building height can impact the rhythm and overall appearance of the streetscape. Roof form should:

a. Integrate into the overall facade and building composition.

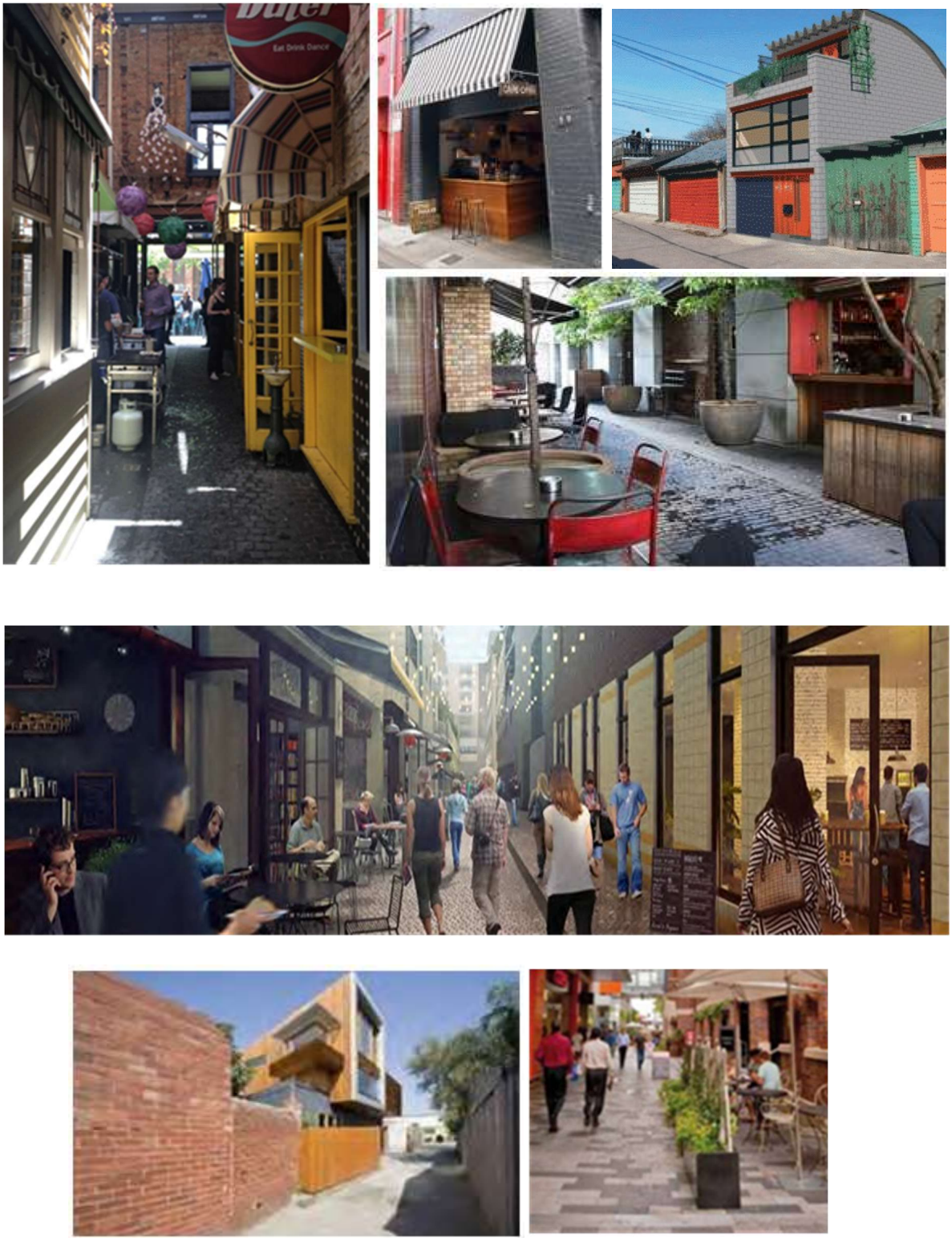
b. Respond to sun access.

c. Minimise building bulk by breaking down and articulating roof form.

Laneways

6.1.33 Development should activate or provide the design adaptability to activate laneways.

Figure 6.5 - Examples of active laneways



Above ground floor uses

6.1.34 Above ground floor uses should be designed to overlook streets, laneways, other public domain and be used for residential living rooms or business uses with an active human presence. Balconies connected to such uses can be used.

Fencing

6.1.35 Fencing will generally not be permitted at the front of sites.

6.1.36 Fencing at the side or rear of properties will only be permitted under exceptional circumstances for privacy and or security reasons and where consistent with this section's objectives.

6.1.37 Sheet steel fencing must not be used.

Future possible building envelopes

6.1.38 Future possible building envelope provisions are as mapped in the relevant town centre plan endorsed by Council for individual centres. See Council's website. These are not mandatory as they rely on multiple lots being available to form all or part of a building envelope. Key development principles underpinning the future possible building envelopes are as follows:

a. Solar access is optimised through ensuring appropriate building separation and north facing buildings whilst maintaining good building frontage onto streets based on State Environmental Planning Policy 65 Design Quality of Residential Apartment Development (SEPP 65) and its associated Apartment Design Guide.

b. All concept building blocks are designed to optimise thermal performance, thermal comfort, and daylighting to improve a buildings energy efficiency.

c. All concept building blocks should ensure visual privacy and acoustic privacy through adopting SEPP 65 design principles.

d. Crime Prevention Through Environmental Design (CPTED) principles. See separate chapter in this DCP.

Local context plan

6.1.39 All development must successfully integrate with adjoining and opposite sites, including heritage sites. Success is measured in terms of relevant DCP objectives. For apartments, shop top housing or mixed use development with a residential accommodation component, State Environmental Planning Policy 65: Design Quality of Residential Apartment Development (SEPP 65) will generally apply, providing requirements including for a local context plan. For development that SEPP 65 does not apply to, a SEPP 65 type local context plan is required by this DCP. This will include an analysis including but not limited to the following, to inform a proposal's building envelope and design:

a. land use, height and typology of adjacent and opposite buildings in the street
b. location of heritage items
c. patterns of buildings
d. building envelopes and setbacks for future development
e. This could mean side walls are acceptable on the boundary in some locations. Elsewhere for instance, adjoining a heritage item, a different design response is appropriate.

6.1.40 Detailed three dimensional drawings are required showing the outcomes of the local context plan.

Setbacks in centres not specifically indicated in the following sections 6.2 – 6.6.

6.1.41 Ground and second storey front setback should be 0 to 2 metres from the front boundary. If existing front setbacks are greater than 0 to 2 metres, development will be required to match prevailing adjoining setbacks.

6.1.42 Front setback above the second storey will generally be increased by 2 metres unless the required local context plan (see section 6.1.39) successfully demonstrates a lesser setback is justified.

6.1.43 Side and rear setbacks will be determined by the required local context plan.

6.1.44 Existing setbacks for minor redevelopment of smaller buildings should be maintained to provide variation and character to the streetscape.

6.1.45 Other than the elements described in the drawings for specific centres and under the heading Awnings, recessed balconies and verandahs, no building elements will protrude beyond the outer face of the building wall. This may be relaxed on side or rear walls for elements such as air conditioning units.

Active and semi active frontages in centres not specifically indicated in the following sections 6.2 – 6.6

6.1.46 Active or semi active frontages should be provided for any development with street, lane or other public domain frontage.

Awnings/verandahs in centres not specifically indicated in the following sections 6.2 – 6.6

6.1.47 Awnings/verandah treatments should reflect the existing character of the centre.

Tenancy frontages in centres not specifically indicated in the following sections 6.2 – 6.6

6.1.48 Where practical and consistent with the development type proposed, multiple and varied tenancy frontages should be incorporated into development. This will account for the existing lot widths widths and the existing character of the centre.

Gateway buildings

6.1.49 Development at or near entries into town centres needs to instill a sense of arrival. Examples of how this can be achieved include:

a. architectural roof features in accordance with LEP 2013
b. ground level splay on corner site
c. upper level splay on corner site
d. upper level corner element with ground level splay
e. prominent pedestrian entry(s) covering both sides if on a corner
f. active upper floors with windows and or balconies overlooking the corner
g.

6.2 - Albion Park Town Centre

Background

Albion Park Town Centre is located approximately 5km west of Shellharbour City Centre. The town centre is defined by a central intersection that connects Tongarra Road with Terry Street, which provides connections to the wider region.

These crossroads have connected the centre to outlying areas since the 1820s. Tongarra Road running east-west originally led to the port at Shellharbour Village and provided a route for transporting farm produce to and from the harbour for distribution. Terry Street running north-south provides links to the Princes Highway and the dairy farms of Jamberoo. The Illawarra Highway provides a gateway via Macquarie Pass to the Southern Highlands, and has done since its establishment in 1898.

Located adjacent to the town centre is the Albion Park Showground and Con O'Keefe Park with Melaleuca Park and LR Mood Park forming key public spaces within the town centre. Other local landmarks in the town centre are Albion Park Shopping Village and Albion Park RSL.

Albion Park includes a busy shopping precinct, several local schools, community centre, pool, library and museum.

The town centre is home to various architectural styles and numerous sites of heritage significance under the Local Environment Plan 2013.

The wider area is home to a growing population and new housing estates extending to the south and to the west to Tullimbar and Calderwood.

Albion Park's trade area includes Albion Park, Tullimbar and Albion Park Rail. New retail centres are planned for Tullimbar and Calderwood.

The B2 Local Centre zoned area allows for an intensification and improved activation of business, retail, development, mixed with medium density residential development where appropriate to a maximum height of 12 metres.

Note: Please refer also to Section 6.1 for provisions that apply to all town centres

Design

Located at a long standing important regional cross roads, Albion Park Town Centre retains elements of its township past. Reminders of this past include numerous buildings of heritage significance. Its parks and showground are important elements. The built form levers off these attributes to encourage a township feel.

ADVICE

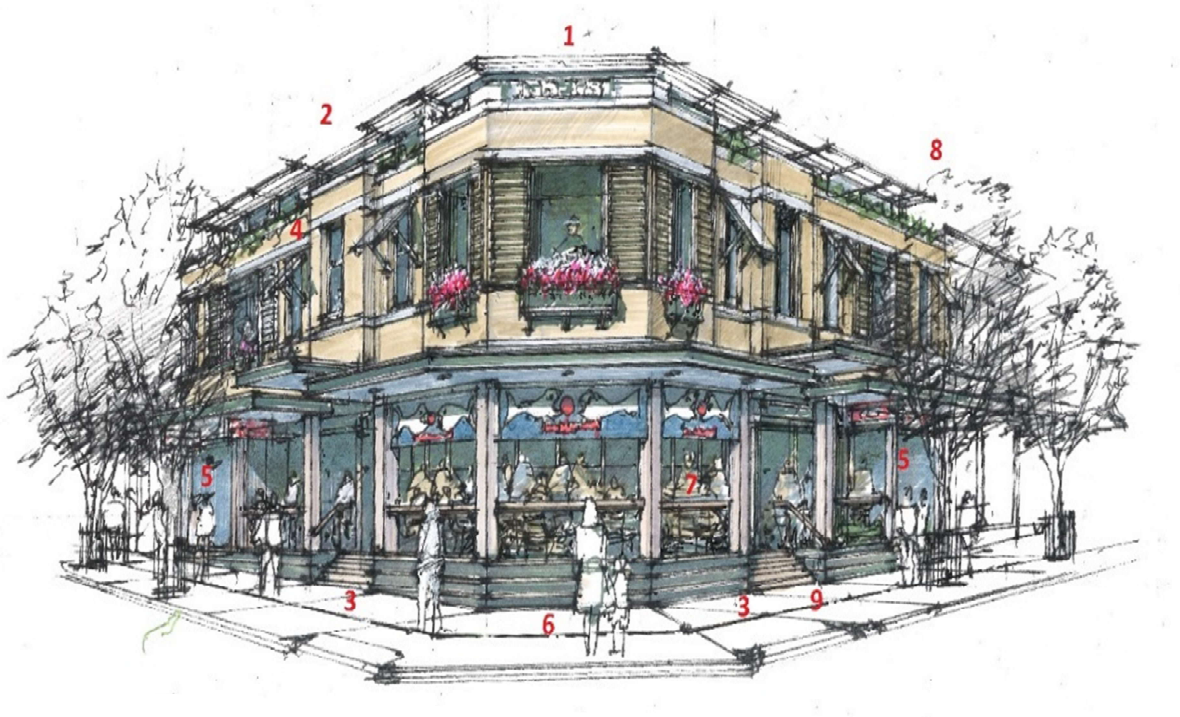
6.2.1 The following **figures 6.6, 6.7, 6.8, 6.9** and **6.10** show desired design outcomes. Design is encouraged to use elements shown in the key from the figures and where appropriate from existing development of good design.

6.2.2 **Figure 6.6** below shows a desired outcome for a generic splayed corner site in Albion Park Town Centre.

6.2.3 With splayed corners, a top level setback is encouraged around the building to follow the continuity of surface a splay creates.

6.2.4 Allowing the top level corner to come to the boundary can be considered on non - splayed corners.

Figure 6.6 - Albion Park Town Centre generic splayed corner site desired outcome



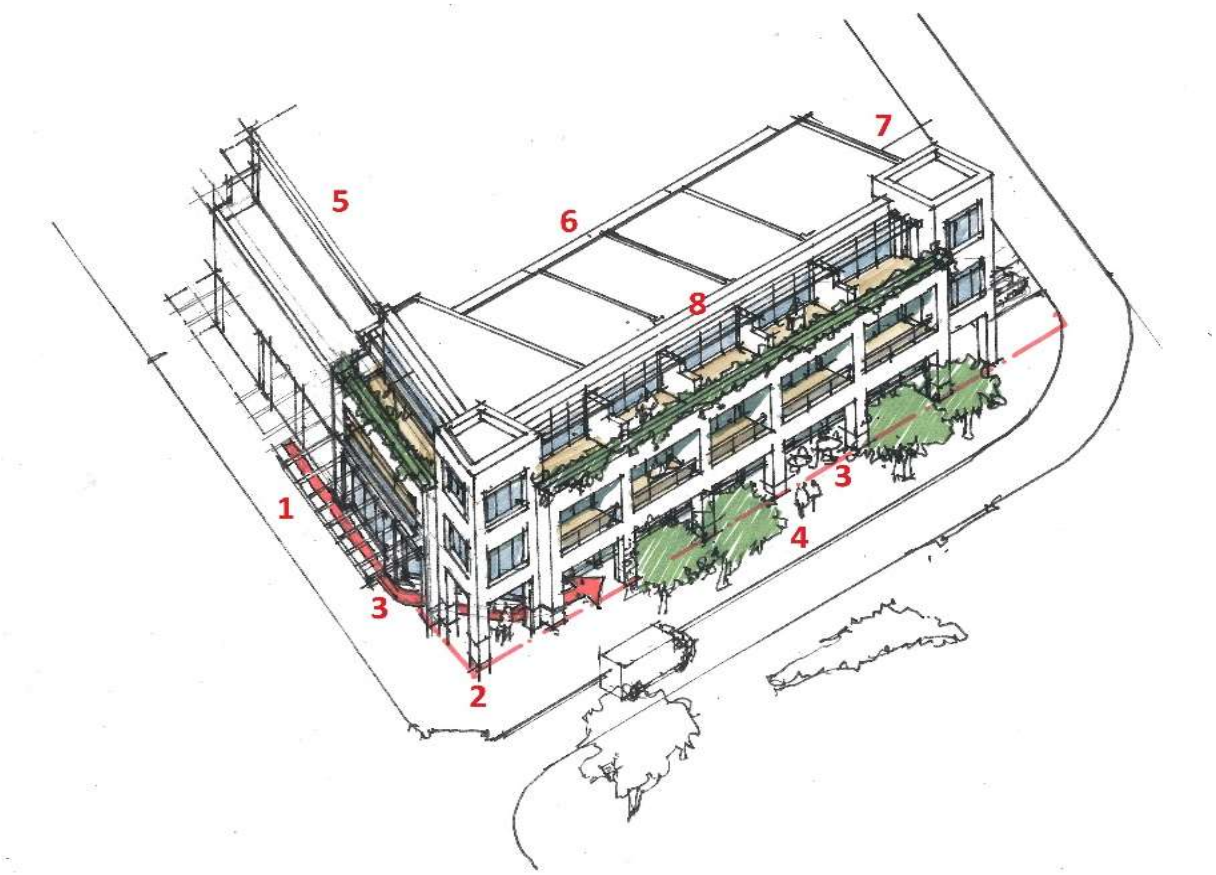
KEY

1.	**2.5m setback to top floor**
2.	**Eave articulated to create discontinuous skyline**
3.	**Articulate entry**
4.	**Planter box edge to upper terrace**
5.	**Signage and shopfront to edge of footpath**
6.	**Generous entry steps**
7.	**External seating to café**
8.	**Louvres and planter boxes encouraged**
9.	**Entry point to pedestrian ramp and access stair**

6.2.5 **Figure 6.7** below shows a desired outcome for a site on the corner of Tongarra Road and McGrath Lane opposite LR Mood Park.

It shows an emphatic corner treatment to the boundary for all levels and strong visual and physical connection to LR Mood Park.

Figure 6.7 - Desired outcome for site on the corner of Tongarra Road and McGrath Lane opposite LR Mood Park



KEY

1. **Street awnings**
2. **Corner articulation**
3. **Pedestrian cover**
4. **Council owned land**
5. **Adjoining site**
6. **Side setback to adjoining site as required**
7. **Rear setback to allow some surface retail parking**
8. **2 - 2.5m top floor setback with corner articulation**

6.2.6 Figure **6.8** below shows a desired outcome for narrow infill sites along Tongarra Road. The street setbacks required are between 0 and 2 metres. This drawing shows parts of the top floor façade coming to the front boundary with ground level street setback creating active space at ground level.

Figure 6.8 - Desired outcome for narrow infill site along Tongarra Road

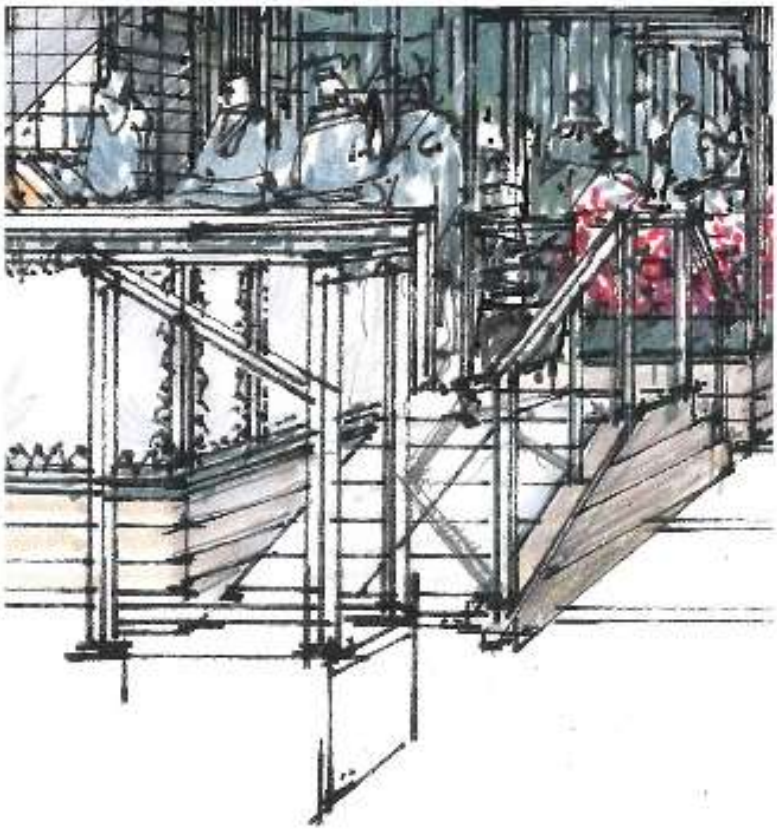


1.	**Eave of top level articulated to create a discontinuous skyline**
2.	**Planter box edge to upper terrace**
3.	**Timber painted shutters/louvres**
5.	**Flower boxes encouraged**
6.	**Varied awnings**
7.	**Narrow 5 – 7m frontages**
8.	**Residential entry point clearly articulated**

6.2.7 Sites with flood constraints may deal with any floor level requirements via an external access ramp within the property.

6.2.8 **Figure 6.9** below shows an example of an external access ramp running parallel with the property frontage, to a raised floor level.

Figure 6.9 – Example of an external access ramp to a raised floor level



6.2.9 **Figure 6.10** below shows a suggested desired outcome for shop top housing on an infill site. Balconies and roof setbacks are integrated with a more modern building design.

Figure 6.10 – Desired outcome for shop top housing on infill site



ADVICE

Colours and materials

6.2.10 Rustic materials such as wooden cladding of a variety of types and finishes and exposed concrete should be used which complements public domain treatments including street furniture. Black steel edging should be used to create strong building definition and to complement other materials used. Development should provide individual interpretations of colours/materials requirements in order to add diversity and variety to the town centre. This includes mixed residential/commercial development and development on laneways. See **Figure 6.11** below for examples of colours and materials.

Figure 6.11 – Colours and materials in Albion Park Town Centre









Tenancy frontages

6.2.11 Existing lot widths in Albion Park Town Centre vary markedly. Along Tongarra Road there are contiguous groups of narrow lots just above and below the 10 metre width. Development of these lots must have tenancy frontages consistent with these lot widths.

6.2.12 Other areas along Tongarra Road have lot widths closer to 20 metres and above. Development of existing lots with widths 20 metres or more must accommodate two separate tenancy frontages. Development of lots with widths above 30 metres should accommodate more than two separate tenancy frontages, no greater than approximately 15 metres in width. This may be varied on merit, depending on existing lot configuration and development proposed.

Setbacks other than on Tongarra Road

6.2.13 Ground and second storey front setback should be 0 to 2 metres from the front boundary.

6.2.14 Front setback at third storey will generally be increased by 2.5 metres unless the required local context plan (see section 6.1.39) successfully demonstrates a lesser setback is justified.

6.2.15 Side and rear setbacks will be determined by the required local context plan.

6.2.16 Existing setbacks for minor redevelopment of smaller buildings should be maintained to provide variation and character to the streetscape.

6.2.17 Other than the elements described in the building perspective drawings and under the heading Awning, balconies and verandahs, no building elements will protrude beyond the outer face of the building wall. This may be relaxed on side or rear walls for elements such as air conditioning units.

ADVICE

Tongarra Road building setbacks

6.2.18 These will accord with the **figure 6.12** below; with the exception of the south west corner and north east corner of Terry Street/Tongarra Road which will be 2 metres) and the south

NOTE: Recommendations for nominal building setback lines have been developed in response to a number of factors including:

1. **Available existing and post road widening setbacks between the property boundary and street**
2. **The need to accommodate finished floor levels of developments given flood requirements**
3. **The need for street tree planting and other landscape treatments to be accommodated within or immediately adjoining the central pedestrian pathway due to likely conflict with underground services**
4. **Urban design considerations to provide improved street edge definition**
5. **The ability to provide for north facing outdoor spaces on the southern side of Tongarra Road, thereby encouraging opportunities for outdoor alfresco dining.**

east corner of Terry Street/Tongarra Road which will be as per development approval D504/2008 (minimum 1.8 metres) or 2 metres.

6.2.19 The nominal building line has been determined at a general setback of 2.0m from the current building line or, where resumption is to take place, the revised front boundary line. This distance would assist to create additional space within the verge, as well as assisting in the future design of buildings to achieve finished floor levels above the 1:100 flood line. The use and treatment of this area would need to be addressed through appropriate development advice to ensure its compatibility with the public areas.

6.2.20 Properties on the intersection of Terry Street and Tongarra Road should provide a strong physical definition to the corner, as currently exists. The nominal building line in this area would generally be zero, with widening to 2m to the western lot boundary of 143 Tongarra Road. Further to the east of this intersection, buildings should generally be set back to 2m to create a consistent setback along the street frontage.

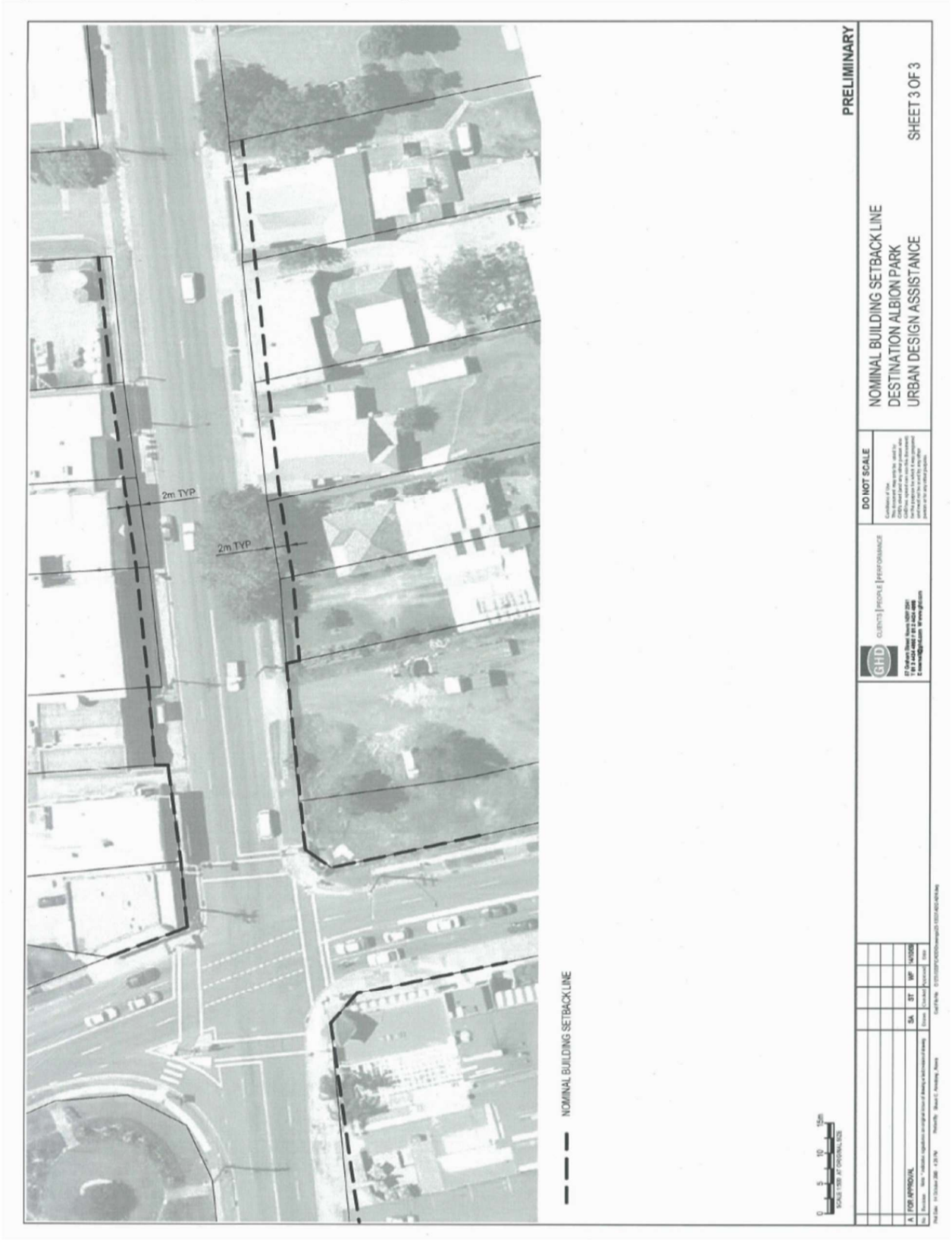
6.2.21 Front setback at third storey will generally be increased by 2 to 2.5 metres unless the required local context plan (see section 6.1.39) successfully demonstrates a lesser setback is justified.

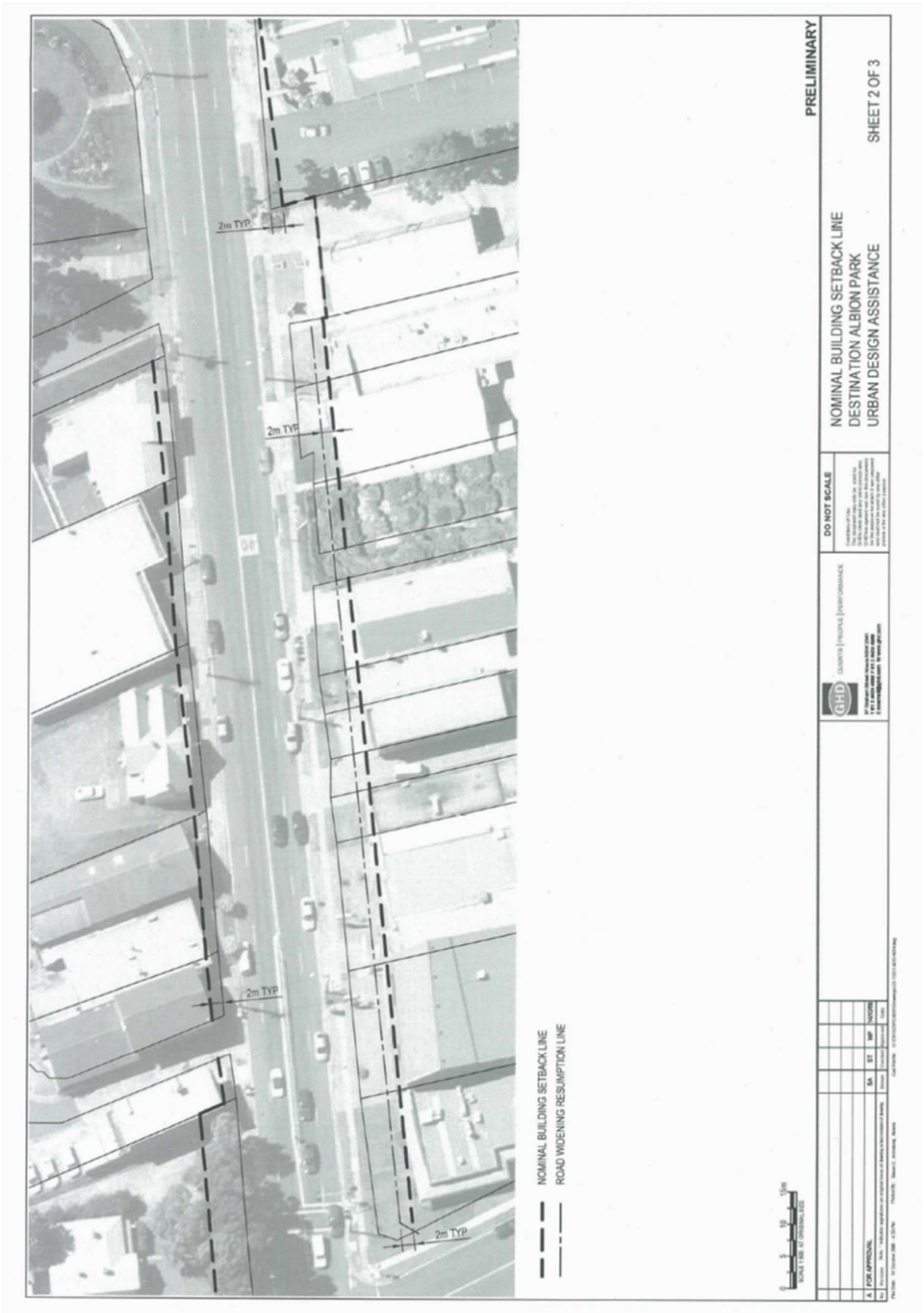
6.2.22 Side and rear setbacks will be determined by the required local context plan.

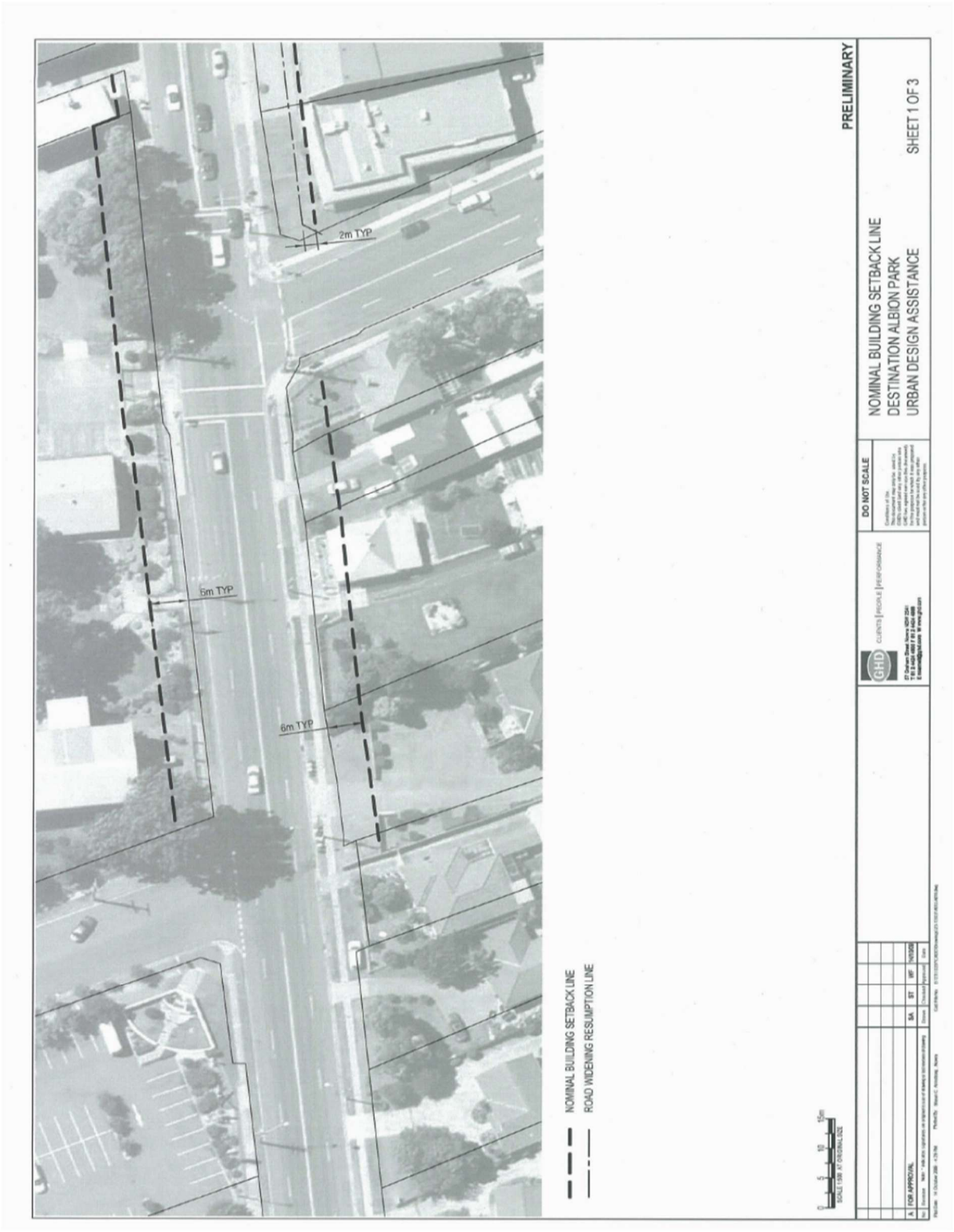
6.2.23 Existing setbacks for minor redevelopment of smaller buildings should be maintained to provide variation and character to the streetscape.

6.2.24 Other than the elements described in the building perspective drawings and under the heading Awning, balconies and verandahs, no building elements will protrude beyond the outer face of the building wall. This may be relaxed on side or rear walls for elements such as air conditioning units.

Figure 6.12 - Tongarra Road building lines from east to west




2m TYP
2m TYP
2m TYP
2m TYP
NOMINAL BUILDING SETBACK LINE
ROAD WIDENING RESUMPTION LINE
PRELIMINARY
DO NOT SCALE
NOMINAL BUILDING SETBACK LINE
DESTINATION ALBION PARK
URBAN DESIGN ASSISTANCE
SHEET 2 OF 3
A FOR APPROVAL



6.2.25 160 – 166 Tongarra Road building line is to be in line with the setback across Hamilton Road to the east.

Active and semi active frontages

6.2.26 **Figure 6.13** below indicates where active and semi active frontages are required. Please refer to active and semi active frontage provisions in section 6.1.

Figure 6.13 – Active and semi active frontages in Albion Park Town Centre



KEY

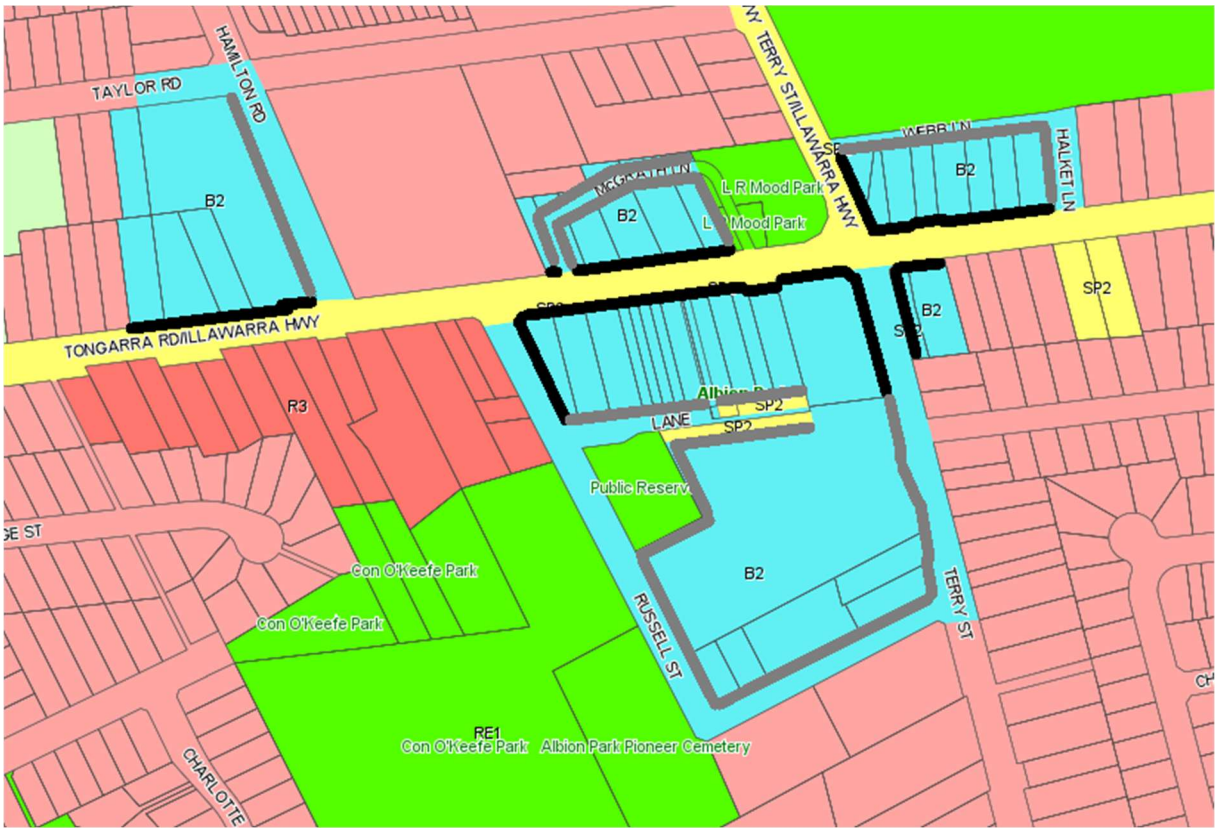
	Active frontages from LEP 2013
	Active or semi active frontages
	Active or semi active frontages both sides of lane

Awnings and verandahs

6.2.27 **Figure 6.14** below indicates awning/verandah requirements. Please refer to the awning/verandah provisions in section 6.1.

6.2.28 Verandahs must be contained wholly within private property including any post supports.

Figure 6.14 – Awning/verandahs in Albion Park Town Centre



KEY

	Post supported verandahs or consistent awning treatments **Consistent or varied awning treatments**

6.3 - Shellharbour Village Centre

Background

Shellharbour Village Centre (SVC) has a seaside village atmosphere and includes the B2 Local Centre zoned land and eastern adjoining foreshore area which wraps around an ocean cove. The cove contains a small boat harbour at its northern end.

The cove foreshore area is covered by a heritage conservation area and numerous items of heritage significance under LEP 2013. These are Little Park, its rotunda and trees, the breakwater/boat haven, the beachside tourist caravan park, Beverley Whitfield Pool, Cowrie Island and its fish processing area. Additionally, the foreshore area includes a shared use path, picnic/barbeque facilities and play equipment.

Addison Street is the centre's main street and runs north/east, south/west. Its high point is a slight knoll around the Mary Street intersection from where it slopes down slightly to the east, west and south. This topography provides good view lines and vistas into and out of the SVC.

The SVC is a well - established tourist centre with indoor and outdoor dining facilities and easy access to the adjoining foreshore. Its commercial and tourist offering will partner with the neighbouring Shell Cove Waterfront area to the south as a key regional tourist destination and economic hub.

The SVC has a mix of office, retail and residential development with varying architectural styles, including examples from the mid - 19th century to the end of the 20th century, on a largely intact 19th century port village layout. SVC evolved to a holidaying function and beyond to its modern state. There are numerous sites that are items of heritage significance under Local Environmental Plan 2013 (LEP 2013) in the SVC. The foreshore area is listed as a heritage conservation area in LEP 2013.

The SVC's primary trade area covers Shellharbour Village, Barrack Point, Barrack Heights, Blackbutt, Flinders and Shell Cove.

A secondary trade area includes the remainder of the Shellharbour Local Government Area (LGA). Despite not being anchored by a supermarket, the centre accommodates a broad mix of retail specialties and has a strong café and tourism culture which is an attractor for residents within the LGA and beyond.

The B2 Local Centre zoned area allows for an intensification and improved activation of business, retail, tourist development, mixed with medium density residential development where appropriate, to a maximum height of 15 metres.

Note: Please refer also to Section 6.1 for provisions that apply to all town centres

Design

Shellharbour Village Centre is a well established tourist centre with varying architectural styles, including examples from the 19th century to the end of the 20th century.

The existing prevalence of post supported verandahs has a unifying effect on the various building forms and streetscape and compliments the café and tourism culture.

The built form levers off these attributes by the use of post supported verandahs, louvres, shutters and passive roof forms.

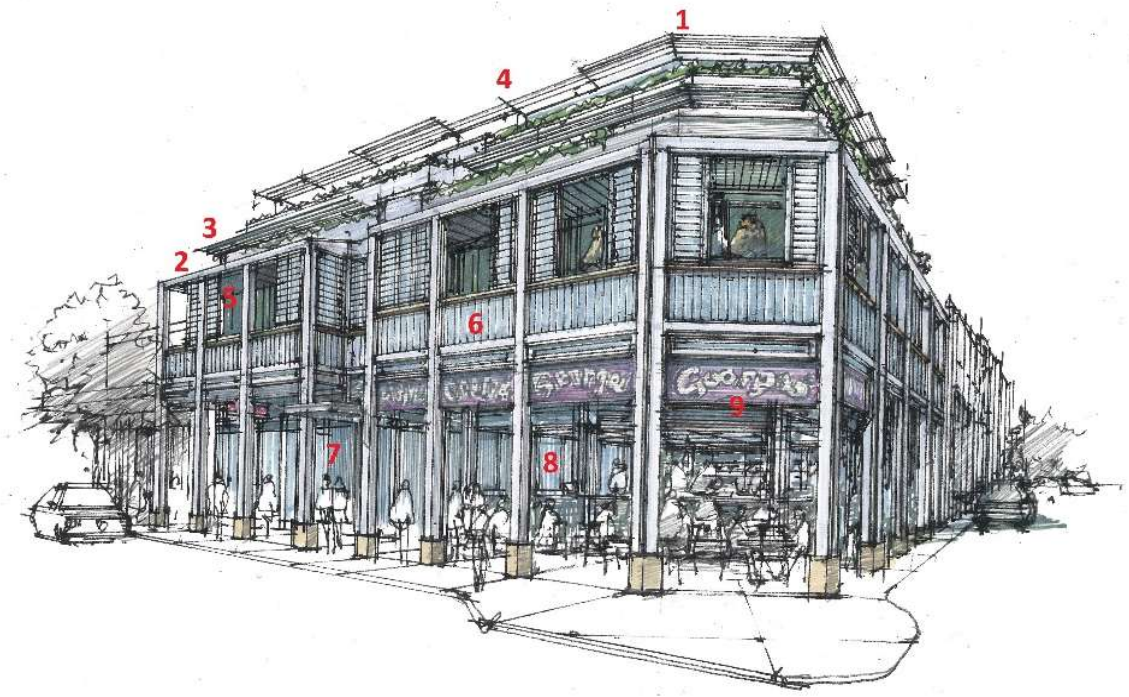
Buildings are articulated with historic elements by for instance the use of valances, consistent post spacing and balustrade design.

ADVICE

6.3.1 The following **figures 6.15, 6.16 and 6.17** show desired design outcomes. Design is encouraged to use elements shown in the key from the figures and where appropriate from existing development of good design.

6.3.2 **Figure 6.15** below shows a suggested desired four level outcome for a generic corner site in Shellharbour Village Centre.

Figure 6.15 – Desired outcome Shellharbour Village Centre corner site – four levels

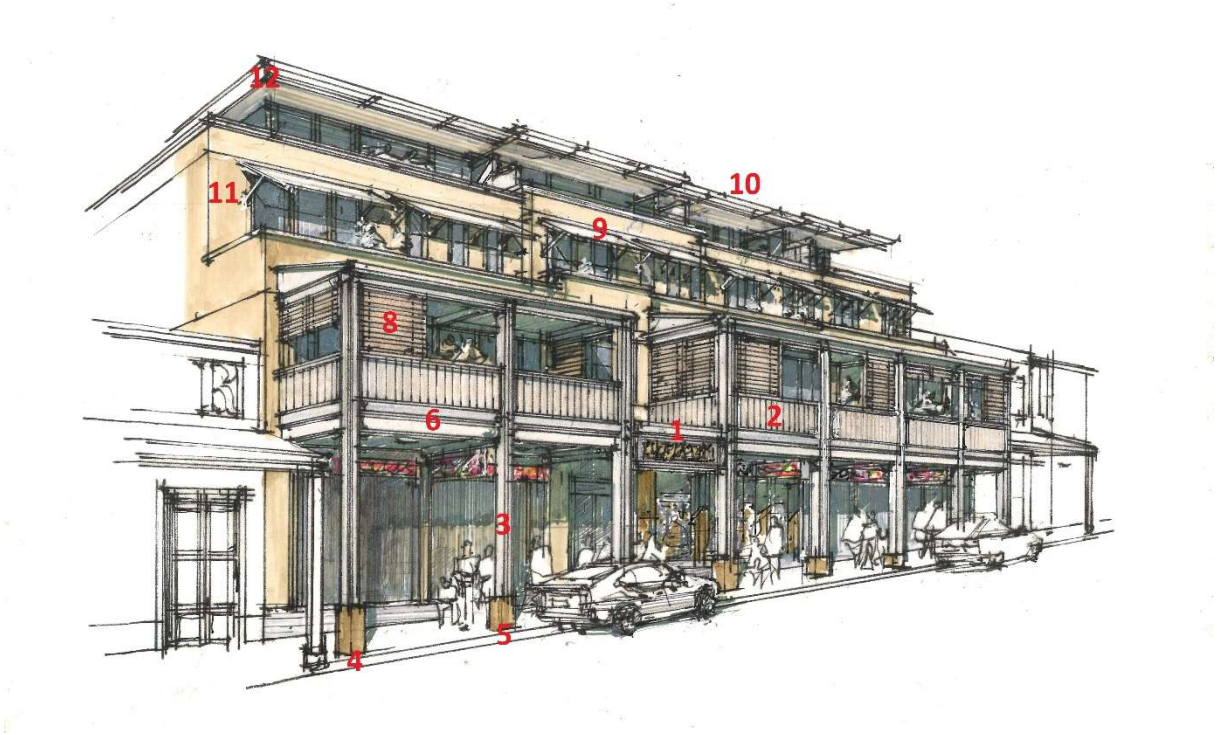


KEY

1.	Splay at corner
2.	2 - 2.5m setback for level 3
3.	4.5 - 5m setback for level 4
4.	Articulate skyline
5.	Encourage louvres and shutters
6.	Solid or semi solid balustrade
7.	Emphasise residential entry
8.	Setback ground floor to create restaurant seating at corner
9.	Create sense of enclosure with blinds/signage

6.3.3 **Figure 6.16** below shows a suggested desired four level outcome for a generic infill site in Shellharbour Village Centre.

Figure 6.16 – Desired outcome Shellharbour Village Centre infill site – four levels

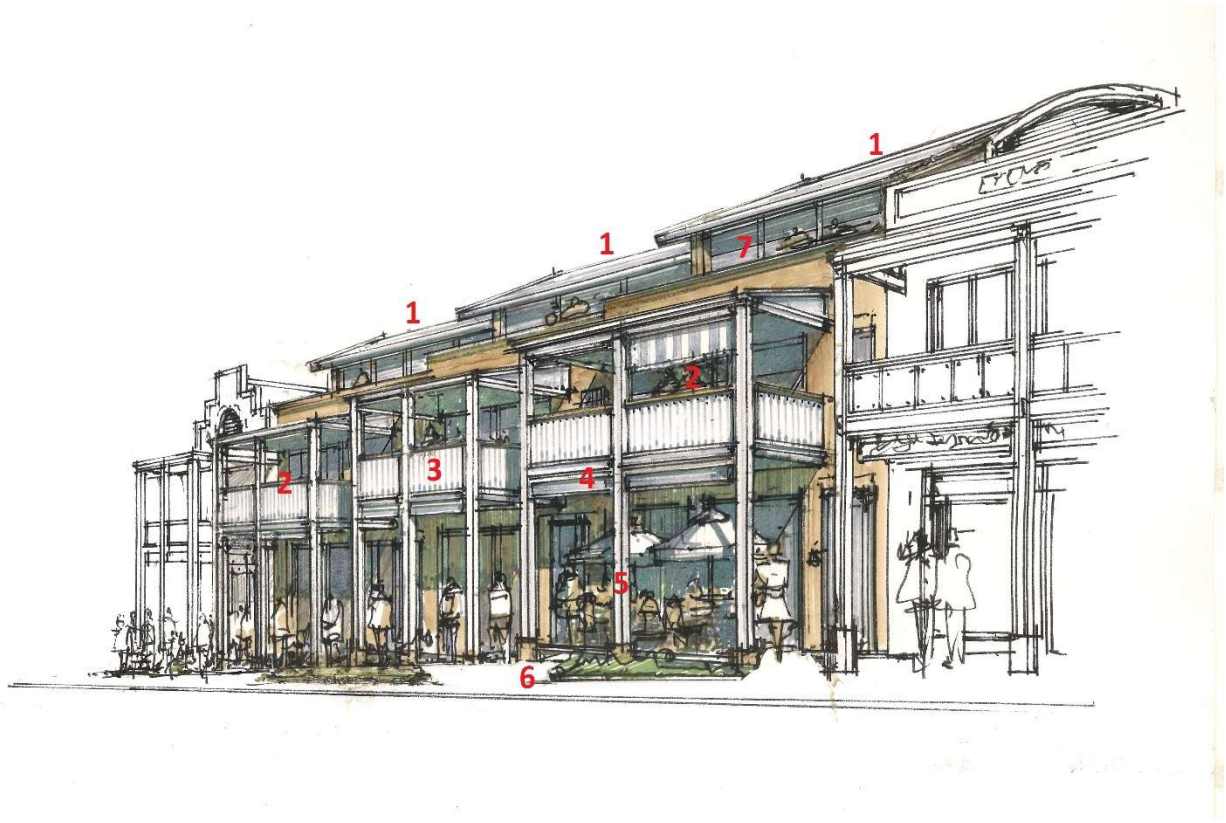


KEY

1.	**Break in verandah rhythm to emphasise residential entry point**
2.	**Solid balustrade**
3.	**Robust character to verandah posts**
4.	**Painted masonry to stone post bases**
5.	**Varying post base height to enable consistent post height along slope**
6.	**Valance element**
7.	**Consistent verandah post spacing**
8.	**Some privacy for balconies permitted**
9.	**Shading and vertical emphasis to windows**
10.	**6 – 8 metre rhythm on skyline – transparent at edge**
11.	**2 metre setback for third level**
12.	**4 metre setback for fourth level**

6.3.4 **Figure 6.17** below shows a suggested desired three level outcome for a generic infill site in Shellharbour Village Centre.

Figure 6.17 – Desired outcome Shellharbour Village Centre infill site – three levels



KEY

1. **6 - 8m grain stepping down slope to create 3 modules down site**
2. **Separate verandahs creating street rhythm**
3. **Solid balustrade**
4. **Valance element**
5. **Robust scale to verandah posts**
6. **Stone or painted masonry post bases**
7. **2m setback to level 3**

Colours and materials

6.3.5 Colours and materials must be soft whites, soft blues, soft greens and greys. Small single storey buildings may however choose to use brighter colours to add variation to the streetscape. Darker tones can be used to highlight and define architectural features such as windowsills, doors and details. Use of natural and rustic materials such as exposed brick, sandstone, bluestone and timber cladding, painted brick should be used. Visible side, rear elevations can be rendered/painted brick.

Figure 6.18 – Colours and materials in Shellharbour Village Centre



Roofing and building rectilinear form

6.3.6 Roofing must not be physically dominant over other building elements in the overall design. Building design must incorporate traditional rectilinear forms, including parapets, hip, gable or skillion roofs. If used, parapets must be the dominant roof element when viewed from the street or second storey of other buildings. For instance, any skillion roofing used behind parapets must slope towards the street frontage.

Tenacy frontages

6.3.7 Existing lot widths in Shellharbour Village Centre vary markedly. Along Addison Street, there are existing narrow lots around and below the 10 metre width. Development of these lots must have tenancy frontages consistent with these lot widths.

6.3.8 Other areas along Addison Street have lot widths over 10 metres and up to 60 metres. Development of existing lots with widths 20 metres or more must accommodate two separate tenancy frontages. Development of lots with widths above 30 metres must aim for more than two separate tenancy frontages, no greater than approximately 15 metres in width. This may be varied on merit, depending on existing lot configuration and development proposed.

Setbacks

6.3.9 Ground and second storey front setback should be 0 to 2 metres from the front boundary.

6.3.10 Front setback above any third level will be increased by at least 2 metres

6.3.11 Side and rear setbacks will be determined by the required local context plan. See section 6.1.39).

6.3.12 Existing setbacks for minor redevelopment of smaller buildings should be maintained to provide variation and character to the streetscape.

6.3.13 Other than the elements described under the heading Awning, balconies and verandahs, no building elements will protrude beyond the outer face of the building wall. This may be relaxed on side or rear walls for elements such as air conditioning units.

Active and semi active frontages

6.3.14 **Figure 6.19** below indicates where active and semi active frontages are required. Please refer to active and semi active frontage provisions in section 6.1.

Figure 6.19 – Active and semi active frontages in Shellharbour Village Centre



KEY

	Active frontages from LEP 2013
	Active or semi active frontages
	Active or semi active frontages both sides of lane

Post supported verandahs and awnings

6.3.15 **Figure 6.20** below indicates awning/verandah requirements. Please refer to the awning/verandah provisions in section 6.1.

6.3.16 Post-supported verandahs should extend 2.7 -3.0m from the front boundary over the existing footpath and be setback at least 600mm from the vertical face of Council's kerb and gutter.

Figure 6.20 – Awning/verandahs in Shellharbour Village Centre



KEY

	Post supported verandahs or consistent awning treatments
	Consistent or varied awning treatments

RE1 Public Recreation zoned land

To achieve the objective of maintaining views from the business area to coastal features:

6.3.17 Development must maintain clear lines of sight:

a. from beyond the eastern end of Addison Street to Cowrie Island and the cove of Shellharbour,

6.3.18 Development must maintain clear lines of sight:

a. from the eastern end of Darley Street to Cowrie Island, the cove of Shellharbour, the pool and Basset Point.

6.4 – Oak Flats Town Centre

Background

Oak Flats is situated on the south-western shores of Lake Illawarra and surrounded by Shellharbour City Centre to the south-east and Albion Park Rail to the west. The town centre is defined by Central Avenue, the main street running north – south. Located on Pioneer Drive to the south of Central Avenue is Oak Flats Railway Station and the Princes Highway. Key landmarks along the main street are the Oak Flats Library and a collection of local shops.

The Oak Flats Town Centre and surrounding suburban area was subdivided in 1926.

It is believed the design, contemporary with the layout of Canberra, was influenced by Walter Burley Griffin's plans.

With its distinctive road network and vistas the area exhibits strong association with the City Beautiful and Garden City Movements.

Knob Hill in the suburb's west features the city beautiful element of geometric or contour controlled road layout resulting in a circulatory road system.

Located on a high point, affording broad vistas, the wide and scenic Central Avenue main street has deliberate and purposeful alignment with views north over Lake Illawarra to Mt Kembla, and south to historic 'Dunster's Hill'. Grid layout of streets commemorates first commonwealth ministers. The regular dimensions of lots reflect the Garden Suburb Movement principles.

Side streets afford direct views to the escarpment and its hinterland.

The town centre is located at a midway point between the Oak Flats Railway Station and the lake foreshore. The B2 Local Centre zoning runs north - south spined by Central Avenue between Hopetoun Street in the south and Wentworth Street in the north. It has a land use mix of retail, including a supermarket, cafés, commercial and community facilities which includes the Oak Flats Library. The strip has many take away shops and restaurants however little outdoor dining.

Oak Flats' trade area generally includes the suburb of Oak Flats.

The B2 Local Centre zoned area allows for an intensification and improved activation of business, retail development, mixed with medium density residential where appropriate to a maximum height of 12 metres.

Note: Please refer also to Section 6.1 for provisions that apply to all town centres

Design

Oak Flats Town Centre with its wide main street, footpath trees and median trees has a boulevard feel. The main street and side streets are terminated by impressive escarpment and rural vistas, reinforcing a boulevard effect.

The built form levers off these attributes with prominent awnings, rectilinear emphasis and strong corner elements.

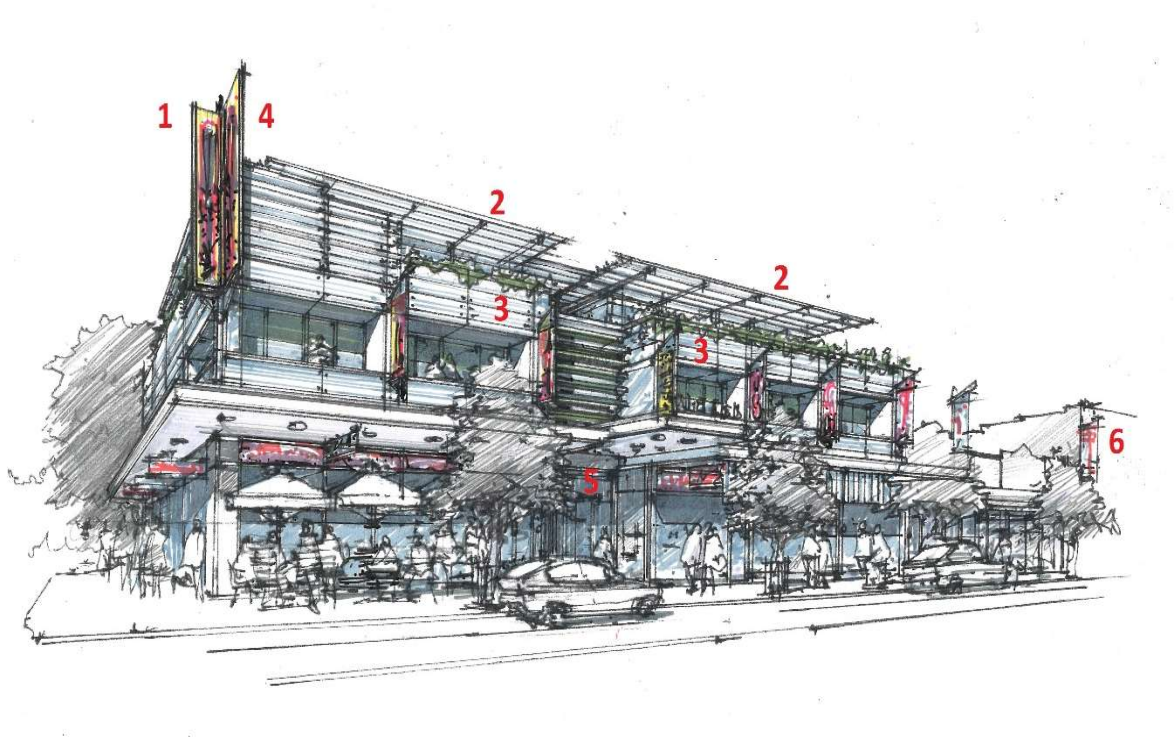
Vertical projecting signs are encouraged to create a unified, distinct signage theme. Being perpendicular to the building line, they can be visible at different angles and compensate for views to businesses being shrouded in parts, by median trees and footpath trees.

ADVICE

6.4.1 The following figures show desired design outcomes. Design is encouraged to use elements shown in the key from the figures and where appropriate from existing development of good design.

6.4.2 **Figure 6.21** below shows a suggested desired outcome for a generic corner site in Oak Flats Town Centre.

Figure 6.21 – Desired outcome Oak Flats Town Centre generic corner site



KEY

1.	**Corner element**
2.	**8 - 12m rhythm to skyline**
3.	**2 – 2.5m top floor setback**
4.	**No setback required at corner**
5.	**Clearly defined entry point**
6.	**Standardised signage element to existing buildings**

6.4.3 **Figure 6.22** below shows a suggested desired outcome for a generic infill site in Oak Flats Town Centre.

Figure 6.22 - Desired outcome for a generic infill site in Oak Flats Town Centre



KEY

1. **2 - 2.5M setback to top floor**
2. **Standardised identification signage to both new and existing buildings**
3. **Recessed balconies**
4. **Existing building**

Colours and materials

6.4.4 A unique, bold and varied colour palette is required along Central Avenue. Colours have been selected as a guide based on the existing bright trends along Central Avenue. The scheme is a range of complementary materials and colours aiming to achieve unique identities particularly for smaller scale buildings. Larger scale buildings should have more subtle or darker tones with potential for bright coloured highlights to emphasise and define architectural features such as windowsills, doors and details. The use of painted wood, coloured tiles and other materials is encouraged to reinforce individuality of buildings.

Figure 6.23 – Colours and materials in Oak Flats Town Centre



Tenancy frontages

6.4.5 Existing lot widths in Oak Flats Town Centre are relatively uniform along Central Avenue at 15 metres generally. Development must have 15 metre or less tenancy frontages. This may be varied on merit, depending on existing lot configuration and development proposed.

Setbacks

6.4.6 Ground and second storey front setback should be 0 to 2 metres from the front boundary.

6.4.7 Front setback at third storey must be increased by 2 to 2.5 metres unless the required local context plan (see section 6.1.39) successfully demonstrates a lesser setback is justified.

6.4.8 Side and rear setbacks will be determined by the required local context plan.

6.4.9 Existing setbacks for minor redevelopment of smaller buildings should be maintained to provide variation and character to the streetscape.

6.4.10 Other than the elements described under the heading Awning, balconies and verandahs, no building elements will protrude beyond the outer face of the building wall. This may be relaxed on side or rear walls for elements such as air conditioning units.

Maintaining scenic views

To achieve the objective of maintaining scenic views:

6.4.11 Any new structure or additions to a new structure is subject to a visual analysis by the proponent to minimise disruption or loss of street level views to escarpment/escarpment hinterland to the west, and grassed/forested hills to the south and distant escarpment views to the north. Measures to avoid disruption or loss of these views will include suitably designed awnings or excluding awnings, signage design, design of space within building setbacks, design of structures that over - hang space within building setbacks, any planting within the development site.

Active and semi active frontages

6.4.12 **Figure 6.24** below indicates where active and semi active frontages are required. Please refer to active and semi active frontage provisions in section 6.1.

Figure 6.24 – Active and semi active frontages in Oak Flats



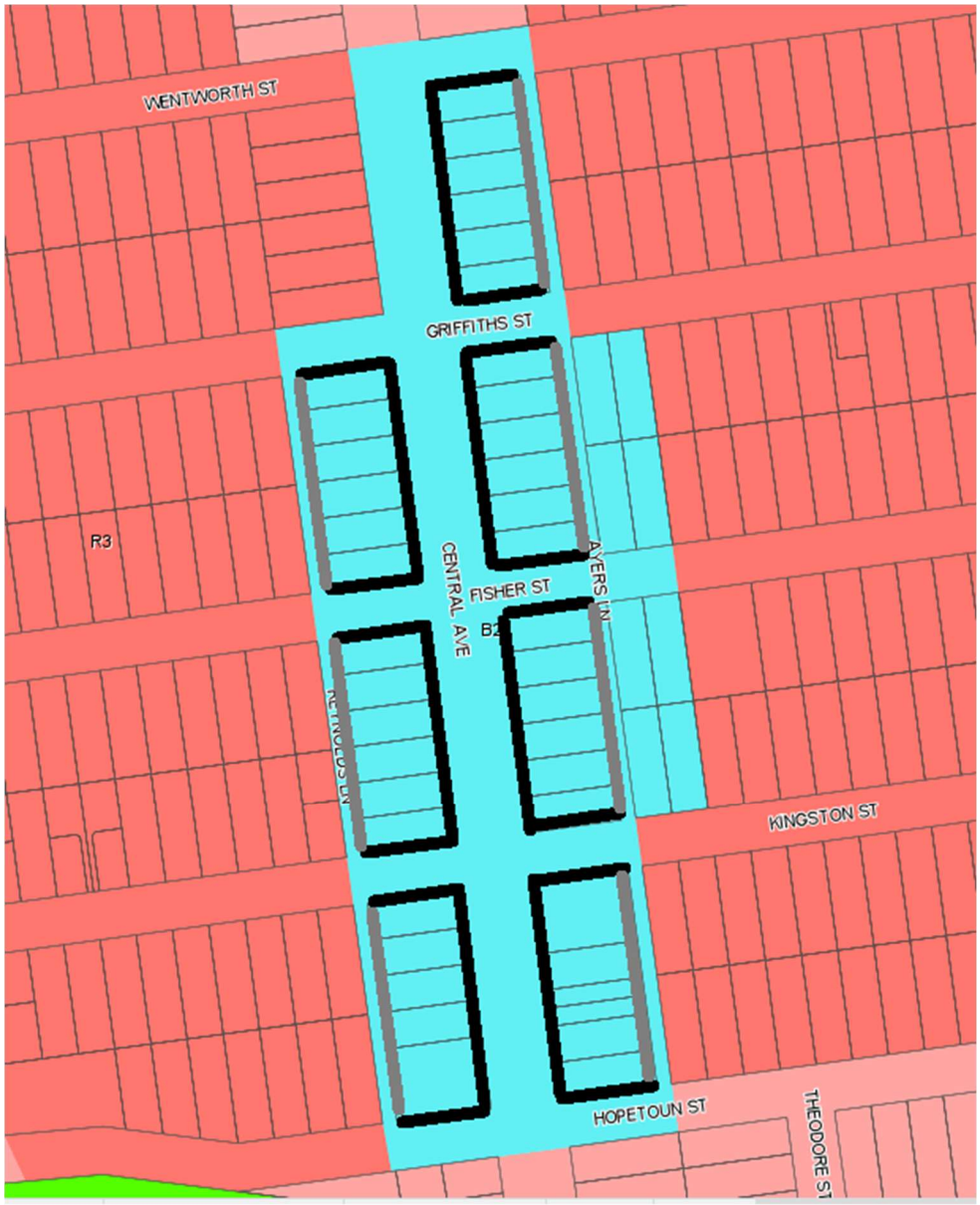
KEY

	Active frontages from LEP 2013 **Active or semi active frontages**

Awnings

6.4.13 **Figure 6.25** below indicates awning requirements. Please refer to the awning provisions in section 6.1. New awnings should not extend out beyond adjoining awnings or awnings in vicinity, on the same side of the street.

Figure 6.25 – Awnings in Oak Flats Town Centre



KEY

	Consistent awning treatments **Consistent or varied awning treatments**

6.5 - Warilla and Warilla Grove Town Centres

Background

The Warilla town centres are generally located along Shellharbour Road and comprise Warilla Town Centre, a strip centre spined by George Street, zoned B2 Local Centre, and to its north, Warilla Grove, an internalised shopping centre or mall, also zoned B2, separated from Warilla Town Centre by residential development.

Occupying the north - west and south-west corners of Shellharbour Road and Lake Entrance Road, opposite Warilla Town Centre is B5 Business Development zoning. On the north – west corner is the former Shellharbour Council administration/chambers building and adjoining business development to the north. Adjoining Warilla Grove to its north is business development zoned B5 Business Development.

Warilla is a relatively new suburb proclaimed in 1951. Services largely began to emerge in the 1960s with a library and post office established. Shellharbour Municipal Council moved its operations from Albion Park to Warilla in 1969, and Warilla Grove Shopping Centre opened in the 1970s.

Warilla is a strip retail centre, and prior to the development of Warilla Grove Shopping Centre, was the main retail and commercial centre in the LGA.

Warilla is a centre for local commercial services with the greatest concentration of office premises of any local centre in the council area.

Warilla includes a library, neighbourhood centre, senior citizens centre, surf club and RSL.

Warilla's trade area covers Lake Illawarra, Warilla, parts of Barrack Heights and Barrack Point. With no large supermarket in the south-east of the LGA, it is possible that Warilla is capturing some expenditure from Shellharbour Village due to easy access along Shellharbour Road. There is possibly some capture of expenditure from outside the LGA, via Windang.

The B2 Local Centre zoned area allows for an intensification and improved activation of business, retail development, mixed with medium density residential where appropriate to a maximum height of 12 metres.

The B5 Business Development zoned area allows for a mix of business and warehouse uses, shop top housing and bulky goods that require a large floor area. These areas should support and complement the B2 Local Centre zoned area. Many types of commercial are also permitted in the zone.

Note: Please refer also to Section 6.1 for provisions that apply to all town centres

Design

Warilla Town Centre is close to the beach and is characterised by palm tree street plantings.

The built form levers off these attributes to reflect a maritime and informal theme with seaside colours and lighter materials.

Massing and building elements borrow from the centre's existing mid to late 20th century suburban built form.

ADVICE

6.5.1 The following figures show desired design outcomes for Warilla Town Centre. Design is encouraged to use elements shown in the key from the figures and where appropriate from existing development of good design.

6.5.2 **Figure 6.26** below shows a suggested desired outcome for a generic corner site in Warilla Town Centre with ground and first level commercial and top level residential.

Figure 6.26 - Desired outcome Warilla Town Centre generic corner site – two commercial levels

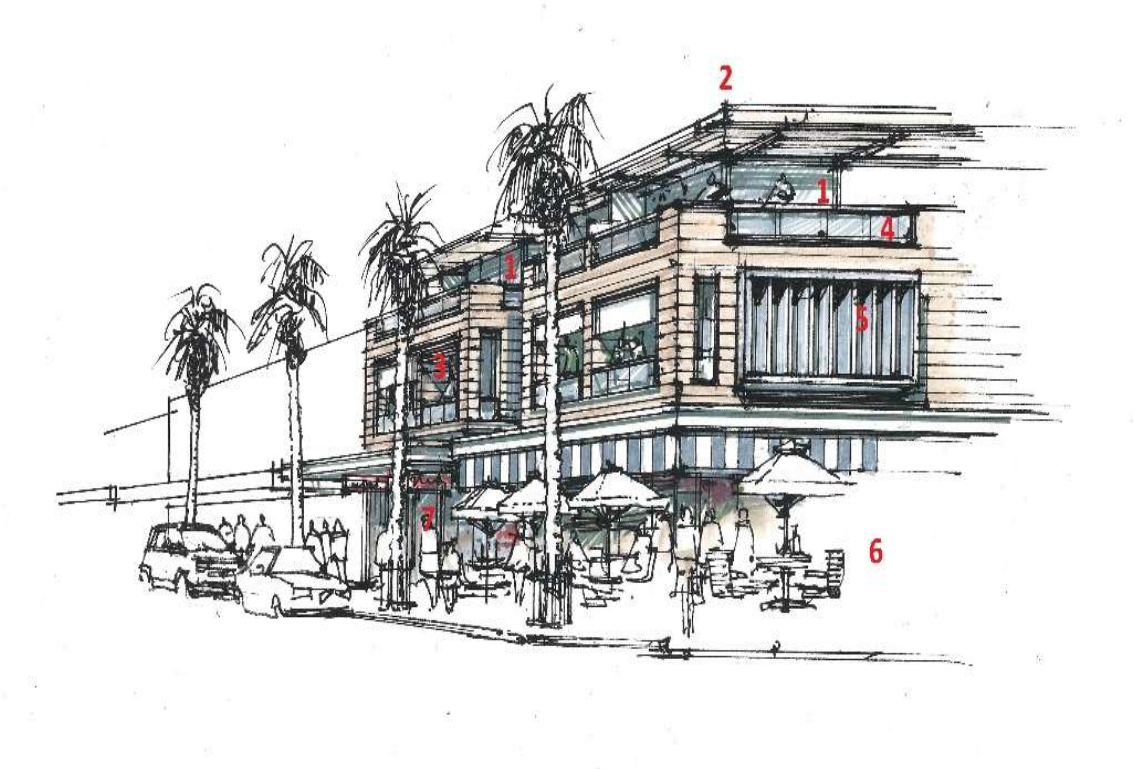


Key

1. **Fabric awnings to top floor**
2. **2 metre top floor setback**
3. **Clearly defined entry**
4. **Stainless steel railings**
5. **Sun control to commercial level – vertical on west and east – horizontal on north**

6.5.3 **Figure 6.27** below shows a suggested desired outcome for a generic corner site in Warilla Town Centre with ground level commercial and 2 levels of residential above.

Figure 6.27 - Warilla Town Centre generic corner site – one commercial level



KEY

1. **2 metre setback to level 3**
2. **6 – 9 metre rhythm to skyline**
3. **Recessed balconies**
4. **Encourage lighter materials such as timber and steel**
5. **Louvres on west**
6. **Encourage ground floor activities**
7. **Clearly defined entry**

Colours and materials

6.5.4 Rustic materials such as wooden cladding of a variety of types and finishes and exposed concrete should be used which complements public domain treatments including street furniture. Black steel edging should be used to create strong building definition and to complement other materials used. Development should provide individual interpretations of colours/materials requirements in order to add diversity and variety to both town centres. This includes mixed residential/commercial development and development on laneways.

6.5.5 The base palette acts as a suggestion tool to offer continuity throughout both centres. Rustic materials such as wooden cladding of a variety of types and finishes and exposed concrete are suggested and ideally correspond with any public domain specifications and furniture. Developments should be strongly encouraged to provide their own individual take and approach to complement these colour palettes in order to add diversity and variety to the town centres. The use of painted wood, coloured tiles and other materials which bring the architectural individuality of a place to life is encouraged.

6.5.6 In addition to the above colours and materials, coloured tiles can also be used at Warilla Grove.

Figure 6.28 – Colours and materials Warilla and Warilla Grove Town Centres



Warilla Town Centre tenancy frontages

6.5.7 Existing lot widths in Warilla Town Centre vary markedly. Along Shellharbour Road and George Street there are contiguous groups of existing narrow lots just above and below the 10 metre width. Development of these lots must have tenancy frontages consistent with these lot widths.

6.5.8 Most other lots along Shellharbour Road, George Street and Beverley Avenue have widths of 15 metres. Development of lots between 15 metres and 20 metres in width must have tenancy frontages the same as the lot width or less.

6.5.9 Lots over 20 metres wide must have more than two separate tenancy frontages, no greater than approximately 15 metres in width. This may be varied on merit, depending on existing lot configuration and development proposed.

Setbacks for Warilla Town Centre and for Warilla Grove's B2 zoned area (excluding the Warilla Grove mall site)

6.5.10 Ground and second storey front setback should be 0 to 2 metres from the front boundary.

6.5.11 Front setback at third storey and above will generally be an additional 2 metres unless the required local context plan (see section 6.1.39) successfully demonstrates a lesser setback is justified.

6.5.12 Side and rear setbacks will be determined by the required local context plan.

6.5.13 Existing setbacks for minor redevelopment of smaller buildings should be maintained to provide variation and character to the streetscape.

6.5.14 Other than the elements described under the heading Awning, balconies and verandahs, no building elements will protrude beyond the outer face of the building wall. This may be relaxed on side or rear walls for elements such as air conditioning units.

Warilla Town Centre active and semi active frontages

6.5.15 **Figure 6.29** below indicates where active and semi active frontages are required. Please refer to active and semi active frontage provisions in section 6.1.

Figure 6.29 – Active and semi active frontages in Warilla Town Centre



KEY

	Active frontages from LEP 2013
	Active or semi active frontages

Warilla Town Centre awnings

6.5.16 **Figure 6.30** below indicates awning requirements. Please refer to the awning provisions in section 6.1.

Figure 6.30 – Awnings in Warilla Town Centre



KEY

	Consistent awning treatments
	Consistent or varied awning treatments

Warilla Grove Mall

To achieve the objective of improving Warilla Grove Mall's edge activation and external linkages:

6.5.17 Any redevelopment of the existing Warilla Grove Mall should:

a. Enlarge existing pedestrian openings to buildings

b. Increase the number of pedestrian openings to buildings

c. Integrate pedestrian building openings with nearby places including Shellharbour Road, Queen Street, Keith Fletcher Park, the new Warilla Library and Beverley Avenue

d. Redesign spaces between building openings and nearby places to create safe, direct, easy to find and interesting passage.

e. Consider the creation of a flexible public space adjoining and west of the passage between the mall and Beverley Avenue. This space would be activated via a mix of permanent and temporary elements such as outdoor dining, markets.

f. Supplement the spaces with soft landscaping which assists in integrating the building openings with nearby places.

g. Include façade treatments which can include public art, transparent facades.

h. Include colours and materials such as wooden cladding with various types of finishes. Exposed concrete, coloured tiles should be used. Colours and materials should correspond with any public domain specifications.

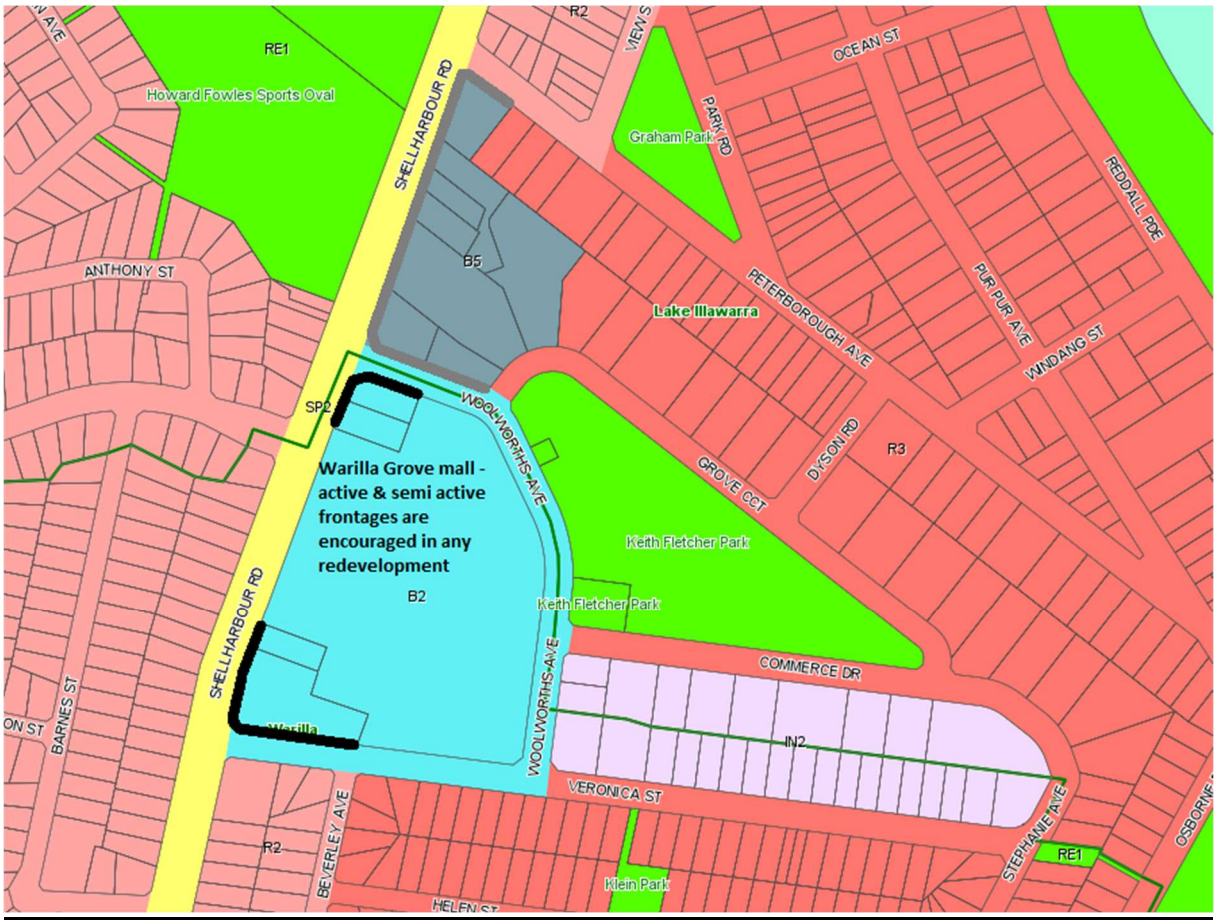
Figure 6.31 – Examples of suitable development for Warilla Grove Mall



Warilla Grove active and semi active frontages

6.5.18 **Figure 6.32** below indicates where active and semi active frontages are required. Please refer to active and semi active frontage provisions in 6.1.

Figure 6.32 – Active and semi active frontages at Warilla Grove Town Centre



KEY

	Active frontages from LEP 2013
	Active or semi active frontages

Warilla Grove awnings

6.5.19 **Figure 6.33** below indicates awning requirements. Please refer to the awning provisions in section 6.1.

Figure 6.33 – Awnings at Warilla Grove Town Centre



KEY

	Consistent awning treatments
	Consistent or varied awning treatments

6.6 – Albion Park Rail Town Centre - B2 Local Centre Zoned land south of Creamery Road

Note: Please refer also to Section 6.1 for provisions that apply to all town centres

ADVICE

6.6.1 Active frontages will be as per LEP 2013

6.6.2 Semi active or active frontages must be provided to Hobart Lane and Creamery Road

6.6.3 Front building line must be 0 to 2 metres

6.6.4 Third level setback an additional 2 metres

6.6.5 Consistent awning treatment must be provided to the Princes Highway and to Creamery Road

6.6.6 Varied awning treatment must be provided to Hobart Lane

6.6.7 Tenancy frontages to reflect existing tenancy frontages

6.7 - Shell Cove Boat Harbour Precinct

ADVICE

Development of the Boat Harbour Precinct at Shell Cove must accord with the state government concept plan approval (reference MP_0027). The approval provides for residential, commercial, retail, community facilities, hotel, dry boat storage, business park, open space and wetlands. See the Department of Planning and Environment's website.

6.8 - Outdoor dining

Outdoor dining applies to all seating areas on public footpath, public land and/or on private property where any food and alcoholic or non-alcoholic refreshments are served to patrons. Reference should be made to Council's Smoke Free Policy - Outdoor Areas. Reference should be made to the associated **Appendix 2** for approval/licensing requirements.

Objectives

1. To ensure that outdoor dining areas enhance the character and vitality of the locality.
2. To ensure outdoor dining areas are safe and accessible for customers and the public.
3. To ensure outdoor dining areas allow easy access to adjoining shops and facilities.
4. To ensure that pedestrian, vehicular access, parking and traffic flows are not disrupted.
5. To ensure outdoor dining areas are sympathetic to the existing and/or proposed future character of the locality.
6. To ensure there are no adverse impacts on adjoining and surrounding properties.

ADVICE

Location

6.8.1 Outdoor dining areas on a public footpath must be located away from the building edge to allow for unobstructed pedestrian movement along the front of shops adjoining the dining area.

NOTE: The intent of this requirement is to allow for continuous browsing in shop windows and uninterrupted entry and exit to adjoin shops. It also allows for people with visual impairments to use the building line for guidance.

NOTE: Where the footpath is too narrow for seating away from the building's edge, Council may consider the location of seating adjacent to the building provided the other development advices in this Section are met.

6.8.2 Outdoor dining areas must not encroach on the frontages of adjoining premises unless written consent is obtained from the adjoining premise and Council considers that the objectives of this Section can be satisfied.

6.8.3 Outdoor dining areas must be identified by appropriate markings on the footpath approved by Council.

Pedestrian flow, safety and convenience of patrons and public

6.8.4 Outdoor dining areas located on a public footpath or other public land:

a. must provide an unencumbered path of travel for pedestrians adjacent to the outdoor dining area with a minimum width of 2 metres

b. where an awning exists, the unencumbered pedestrian path of travel must utilise the existing awning

c. must be setback from the kerb by at least 0.8 metres to allow for safe and convenient opening of doors and unloading of vehicles

d. must be setback from an intersection kerb, left turning side only, by at least 2 metres from any intersection and 1 metre from any adjoining driveway to ensure clear vision and sight distances near driveways and intersections is maintained

e. must be setback from the building corners by at least 2 metres where the outdoor dining area is adjacent to the building

f. must be setback at least 0.5 metres from any adjoining premises door opening

g. must only provide the number and layout of chairs and tables that allow sufficient space for waiting staff and customers to comfortably move around and deter customers from moving furniture outside the approved area. At no time must the outdoor furniture be located outside of the approved and marked outdoor dining area. A distance of 2 metres between tables must be maintained, as measured from the table edge. This allows a maximum of one table and 4 chairs for every 2 metres in length

h. must provide for adequate queuing opportunities for people adjacent to bus stops and taxi ranks

i. must not allow street furniture (fences, heaters, planter boxes, garbage bins, bollards, traffic signs on poles, street lights, plants, advertised boards) on or protrude into the pedestrian area

j. will not be permitted in potentially hazardous areas such as unprotected elevated and steep areas unsuitable for furniture without adequate safety measures to Council's satisfaction.

NOTE: Where eating facilities are operated near Council street bins and a relocation of the street bin is required, the applicant will be charged for the relocation of the bin/s. Refer to Council's Fees and Charges available on Council's Website.

Delineation of outdoor dining area

6.8.5 The outdoor dining area must be clearly defined by the use of a suitable enclosure. Enclosures must be of metal or lightweight materials such as a metal frame with a fabric insert or other materials acceptable to Council. Colour/s and style of the enclosure must be sympathetic to the character of the area and have a minimum height of 600mm. The enclosure must have no sharp edges and any protruding feet must be contained wholly with the approved dining area.

6.8.6 Enclosures must be removed from the footway on closing each day unless they are wholly within the property boundaries or are approved permanent structures.

6.8.7 Enclosures must be kept to a minimum. Barricade fencing and solid obscuring screens are not permitted. Safety rails, bollards, and the like will only be permitted where required for safety reasons.

NOTE: Separate approval is required for any alterations to the ground surface of the public footpath and/or area. Where it is proposed to replace paving material, new material must match the existing or proposed paving treatment.

Parking

6.8.8 Outdoor eating areas located on public land do not require additional car parking. Outdoor eating areas on private land may require additional car parking in accordance with **Chapter 13**, Parking, traffic and transport.

Hours of operation

6.8.9 The hours of operation must not exceed the approved hours of operation of the associated restaurant. However, Council may choose to further limit the hours of operation in order to minimise the impact on surrounding land uses and residents.

Advertising & signage

6.8.10 One menu board containing the name of the restaurant/café and details of food/drink items for sale is permitted per establishment. This board may either be single board or "A" frame style and must be professionally designed and maintained.

6.8.11 This menu board, including any protruding feet, must be located wholly within the approved outdoor eating area so as to not disrupt pedestrian flows along the footpath.

6.8.12 Advertising may be permitted on approved umbrellas and boundary enclosures but not on other furniture, fencing or planter boxes. Any advertising must relate specifically to the business or products sold by the business. Advertising is restricted to 2 logos or names on the entire surface of an umbrella and 1 logo/name on an enclosure structure.

Umbrellas & other shade structures

6.8.13 Umbrellas must be firmly anchored and free of sharp protrusions. Preference is given to market style umbrellas offering generous shade protection. There must be at least 2 metres vertical clearance from where people walk to any overhead lights, awnings, window openings, umbrellas or similar fittings.

6.8.14 Colour/s and style of the shade structure must be sympathetic to the locality.

Furniture

6.8.15 Furniture colour must provide a suitable colour contrast between street furniture and the footpath.

6.8.16 All furniture must be removed from the public areas when the associated restaurant/food premises is closed.

6.8.17 Furniture used must:

a. be waterproof, weather resistant and of such a weight as to not be blown away in windy weather

b. be durable and robust to withstand heavy use and movement and have minimal moving parts and hinges

c. be practical, aesthetically pleasing and serviceable. In this regard, lightweight moulded plastic chairs are not considered acceptable

d. be easily stackable and stored away from the public area after hours of operation

e. have tables that are sturdy. In this regard, breakable glass table tops are not acceptable

f. tables must have a minimum height of 700mm clearance above the ground surface level to allow easy access for wheelchairs.

Reversible works

6.8.18 Outdoor dining within front setback areas may include paving and planting works and installation of removable shade structures provided that all works are easily reversible and do not disturb or damage existing heritage items.

Noise

6.8.19 Amplification of music, or similar, is not permitted within the outdoor dining areas.

Lighting

6.8.20 Any outdoor eating area licensed to operate outside daylight hours must provide adequate lighting to the Council's satisfaction to ensure the safety and amenity of patrons and the general public.

6.9 - Vehicle sales or hire premises (i.e. motor showrooms, machinery hire, boats etc.)

Objectives

1. To ensure that vehicle sales or hire premise developments do not unduly impact on the existing built character of the locality.
2. To ensure that each development can satisfactorily function within its designated site, in particular relating to on-site car parking, vehicle circulation and vehicle display areas.
3. To minimise the impact of developments on traffic flows on the road traffic network.
4. To ensure that new development does not compromise the effective and ongoing operation and function of roads.

ADVICE

Built form and streetscape

6.9.1 The building design must be of a high architectural standard so as to contribute to an attractive and cohesive streetscape and be compatible with surrounding development in that area.

6.9.2 Car parking and the designated display area must be clearly delineated with material suitable for the purpose. The incorporation of permeable surfaces for the display areas should be considered.

6.9.3 Developments fronting Princes Highway, Shellharbour Road and Lake Entrance Road should reflect an active main street quality with variation and articulation in the building façade and use of high quality materials and refined details.

Display and storage of vehicles and/or machinery

6.9.4 This display area must be of sufficient size to accommodate all vehicles/machinery which are for sale/hire. See **Figure 6.34** below.

6.9.5 Vehicles and/or machinery for sale/hire must be located only within the designated display areas.

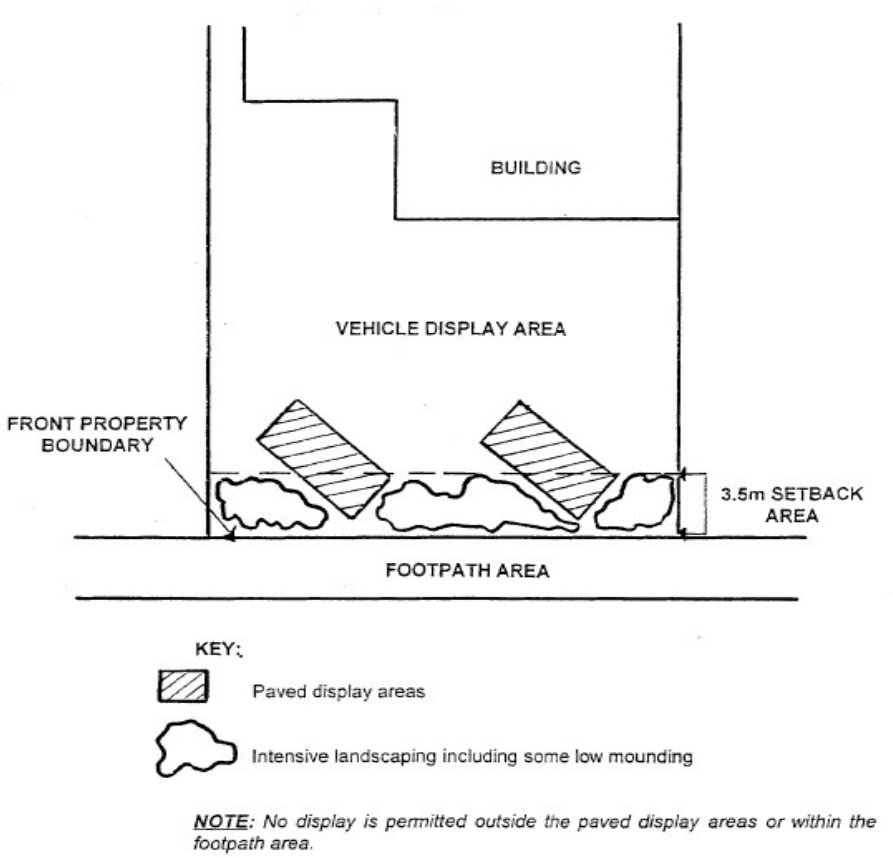
6.9.6 Limited display areas may be permitted in the 3.5m landscape setback from the primary street frontage. In this regard, the following design criteria will apply:

a. Vehicle display areas must be evenly distributed (not grouped) and must not occupy more than 25% of the total landscape frontage

b. The proposed display areas must be clearly defined by means of paving with raised kerbs. Paving materials must be semi-permeable

c. Access to the proposed display spaces must be provided directly from within the site.

Figure 6.34 - Vehicle display area



Vehicle and/or machinery delivery and storage

6.9.7 Deliveries must not cause traffic conflicts within or outside the property boundary.

6.9.8 The loading and unloading of vehicles and/or machinery on the street is not permitted. The application must demonstrate how vehicles and/or machinery storage areas pending display will be stored on the site.

Note: Applications must demonstrate how the proposal:

- **allows deliveries to and from the site without causing traffic conflicts within or outside the property boundary**
- **how vehicles/machinery will be stored on the site prior to being transferred to the display area**
- **where after sale servicing of vehicles is to be provided within the development, the traffic and parking calculations should consider this as a separate service from the premises**
- **where wash bays are to be provided, details of how the facility will not conflict with the operation of the site and how environmental factors have been incorporated into the design.**

Ancillary development

6.9.9 To avoid any impact of light spillage to any residential area, all lighting must be designed and installed so as to minimise spillage and glare. Lighting must be designed and installed to comply with AS 4282 - Control of the obtrusive effects of outdoor lighting.

6.10 - Signage at shopping facilities to deter use of plastic bags

Objective

To encourage the use of re – usable shopping bags and deter the use of plastic shopping bags

ADVICE

6.10.1 Signage must be installed in visually prominent positions in privately owned public car parks encouraging shoppers to use reusable shopping bags where:

- A new shopping facility with access to privately owned public parking is proposed;
- Alterations or additions to an existing shopping facility with access to privately owned public parking is proposed.

6.10.2 Such signage must where possible attach to buildings/structures in or adjoining parking area(s). It must have a maximum face of .36m2. If attachment to a building/structure is not possible, it can be free standing pole signage with a maximum height of 2 metres and maximum sign face of .36m2.

6.10.3 Such signage must include a brief message about environmental benefit.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 7 - SHELLHARBOUR CITY CENTRE COMMERCIAL DEVELOPMENT

These Shellharbour City Centre provisions apply to land within the city centre which is made up of 14 planning precincts under the Shellharbour City Centre Masterplan (**Figure 7.6**). These recognise and differentiate between the development pattern and function of each of the precincts within the Shellharbour City Centre Masterplan. The Masterplan is part of this DCP.

To inform development conceptualisation and assessment, reference should also be made to the associated **Appendix 3** for advice on:

- Block/Precinct Development Strategies which are required to precede DAs for large blocks, precincts and large sites
- DA requirements
- Public Domain works
- Site specific works
- Cultural requirements
- Site integration
- Place making
- Shellharbour City Centre Masterplan and its:
    - concept
    - planning/development principles
    - land use strategy
    - desired future character.

Objectives

1. To facilitate the land use strategy for the city centre identified in the master plan.
2. To facilitate implementation of public domain works.
3. To encourage appropriate uses throughout the city centre in accordance with the masterplan.
4. To provide development guidelines and advice to assist in the design and development of the city centre based on urban design concepts and principles contained in the masterplan.
5. To establish the intended future character of the city centre and to provide guidelines which will ensure all future development makes a positive contribution to the public domain and streetscape.
6. To provide performance-based objectives, guidelines and advice which will ensure that the city centre is developed in accordance with the masterplan.
7. To provide detailed site specific design guidelines and criteria to ensure each site within the city centre is developed in accordance with the aims of this plan.
8. To provide a framework for development and growth that responds to realistic market and community needs.

7.1 - Façade treatments

While recognising that the wide diversity of building types throughout the city centre will have quite different architectural expressions there is a need to provide some guidance for the development and design of building facades in order that a sense of unity and cohesion arises from the assemblage of buildings.

Objectives

1. To provide integrated facade treatments with a contemporary architectural theme which is composed of a variety of building types and forms by different designers but which will together form a coherent city centre.
2. To regulate the design of building facades in order to achieve a sense of design unity throughout the city centre.
3. To accommodate different land uses that will lead to differing architectural treatments.
4. To foster an understanding that each building facade is composed of elements (a base, a middle and a top) and to encourage the expression of these.
5. To ensure facades have a combination of horizontal and vertical elements to provide a balanced composition.

ADVICE

7.1.1 Refer to **Figure 7.1** below for examples for appropriate treatments for various building types.

7.1.2 Buildings should generally be of masonry appearance with generous shop windows to the street.

7.1.3 Windows above street level should be of vertical appearance or framed to emphasise verticality.

7.1.4 Building facades should be articulated to establish a strong vertical rhythm.

7.1.5 Buildings should provide a diversity and variety of form in long facades.

7.1.6 Building frontages are to be articulated into separate building frontages and bays, using shop front separations, attached columns and steps in the façade.

7.1.7 A balance of horizontal and vertical façade elements should be provided and relate to adjacent facades in the street.

7.1.8 Long facades should be subdivided with windows and other façade elements to provide a balanced composition.

7.1.9 Simple façade designs containing only horizontal or vertical elements are not supported.

7.1.10 Excessive lengths or heights of blank walls which are highly visible to any area of public domain (including streets, lanes and car courts) will not be permitted.

7.1.11 Excessive areas of curtain walled reflective glazing will not be permitted.

7.1.12 Air conditioning facilities must not be visible from the street.

Figure 7.1 - Façade treatments

RETAIL / MIXED



RESIDENTIAL / MIXED



SPECIAL SITE



BULKY GOODS / SUPPORT RETAIL



COMMERCIAL



SPECIAL SITE



7.2 - Pedestrian arcades and service access

Objectives

1. To encourage pedestrian access from major street frontage ensuring street vitality.
2. To encourage servicing from laneways thereby reducing impact on street frontages and pedestrian activity.
3. To enhance security and safety.

ADVICE

7.2.1 Pedestrian arcades are not permitted except where identified and approved on the Master Plan or Block/Precinct Development Strategy.

7.2.2 Service access is only permitted from service lanes.

7.3 - Roofs and roofscape

Roofs contribute to the notion of city centre in a number of ways. The size of the roof, its pitch, the materials used and additional rooftop elements (lift tower, stair towers, air conditioning plant etc.) can combine to differentiate the city centre from other parts of the LGA and can assist in the visual integration of the city centre.

Objective

1. To create a roofscape which reads from near and far as an interesting yet integrated component of the city centre.

ADVICE

7.3.1 Pitched roofs are desirable on small scale buildings. The pitch should be 25˚ minimum.

7.3.2 For larger buildings flat and low pitched roofs may be more appropriate. In this case the roof should be obscured from the street by a parapet.

7.3.3 Roofs must be silver or pale grey metal decking. Any type or profile is acceptable.

7.3.4 Lift tower, stair towers, air conditioning plants etc. are to be integrated into the design of the buildings.

7.4 - Building materials

The city centre is likely to be built from a range of materials. Some degree of regulation will be required to ensure that the city centre ties together and reads as a place.

Objective

1. To visually integrate the city centre by regulating the range, type and colour of materials used.

ADVICE

7.4.1 Refer to **Figure 7.2** below with the materials palette, considered appropriate for different building types and locations. Other materials and colours may well be acceptable and alternatives will be considered.

7.4.2 Large areas of glass or reflective surfaces are to be avoided.

7.4.3 Building materials used are to be of a high standard and quality.

7.4.4 A colour and materials palette based on the following should be submitted with development applications and advice sought from Council on materials and colours proposed for adjacent sites.

a. Retail and mixed use

i. Walls: painted or rendered masonry such as brickwork, blockwork, per cast panels.

ii. Roofs: grey metal deck, grey colorbond or similar. No tiles.

iii. Windows: upper floor aluminium or timber with a strong profile.

iv. Shop front: aluminium, steel or timber – refer to signage and verandah guidelines.

b. Bulky goods and secondary retail

i. Walls: painted or rendered masonry, tilt-up panels. No large curtain walled glazing areas.

ii. Roofs: grey metal deck grey colorbond or similar.

iii. Windows: aluminium or timber.

c. Residential and mixed use

i. Walls: mix of painted, rendered, face brickwork. (hardipanel, hardiplank or similar for upper floors/gable infills etc.)

ii. Roofs: grey to mushroom tiles or colorbond/metal roof.

iii. Windows: aluminium or timber with a strong profile

d. Commercial

   i. Walls: painted or rendered masonry, lightweight panels. No large curtain walled glazing areas.

   ii. Roofs: grey metal deck, grey colorbond or similar

   iii. Windows: aluminium or steel.

e. Icon buildings

   i. Walls: painted and rendered masonry, lightweight and tilt up panels. No large curtain walled glazing areas.

   ii. Roofs: grey metal deck, grey colorbond or similar

   iii. Windows: aluminium or steel.

Figure 7.2 - Building materials











7.5 - Solar access

Objective

1. To minimise the effect of overshadowing by providing sufficient setbacks to buildings over two levels (see **Figure 7.3** below).

2. To facilitate appropriate shade, solar access and glare control.

ADVICE

7.5.1 Design of buildings should minimise the effect of overshadowing on the following (see **Figure 7.3** below):

a. Public open spaces.
b. Residential private open space.
c. Adjacent residential dwellings requiring solar access to windows and collector panels.

Figure 7.3 - Solar Access to public space - building height / setback controlled to maximise solar access



7.5.2 The shadow diagram provisions in the residential **Section 3.9**, regarding solar access apply to commercial development.

7.5.3 The following provisions are suggestions which can contribute to BASIX compliance.

a. Design of window areas of building facades should take into consideration the façade orientation. Refer to **Figure 7.4** below.

b. North and west faces of the buildings should have appropriate shading devices.

c. North façade treatment should optimise winter solar gain opportunities.

d. West and east facades should protect window areas from direct summer solar gain.

e. Window areas should not generally exceed 50% for the east and west facades and 75% for the north and south facades.

f. Maximum window areas for upper floors should not exceed 50%.

g. Design dwellings so that main living areas are north facing, or oriented toward the primary outlook and aspect, for example street frontage or courtyards.

h. Locate living spaces and open spaces to maximise access to sunlight.

i. Provide south facing units with alternative orientation to ensure the provision of solar access.

j. Locate non-habitable rooms such as laundries, bathrooms and kitchens in the southern parts of the buildings, unless the primary outlook and / or aspect are in a southerly direction.

k. Provide adjustable shading devices for shading and glare control.

l. Ensure windows are of adequate size and proportion to maximise access to natural daylight.

m. Use reflected light from light coloured walls and ceilings.

Figure 7.4 - Maximum window areas for upper floors must not exceed 50% - glazed areas should be protected from direct sun



7.6 - Building height

ADVICE

7.6.1 Building heights need to comply with the relevant LEP provisions.

7.6.2 Any parapet or parapeted gable needs to be within the LEP height limit unless it can be demonstrated it meets the LEP criteria for an architectural roof feature.

7.6.3 This Section illustrates general building heights for the city centre, see **Figure 7.5** below. Principal features of this plan are:

a. a general height limit of 3 storeys

b. potential for an extra floor in significant locations and where the urban form of the city may be celebrated

c. potential for a landmark building to 6 storeys immediately south of the city square and the civic precinct.

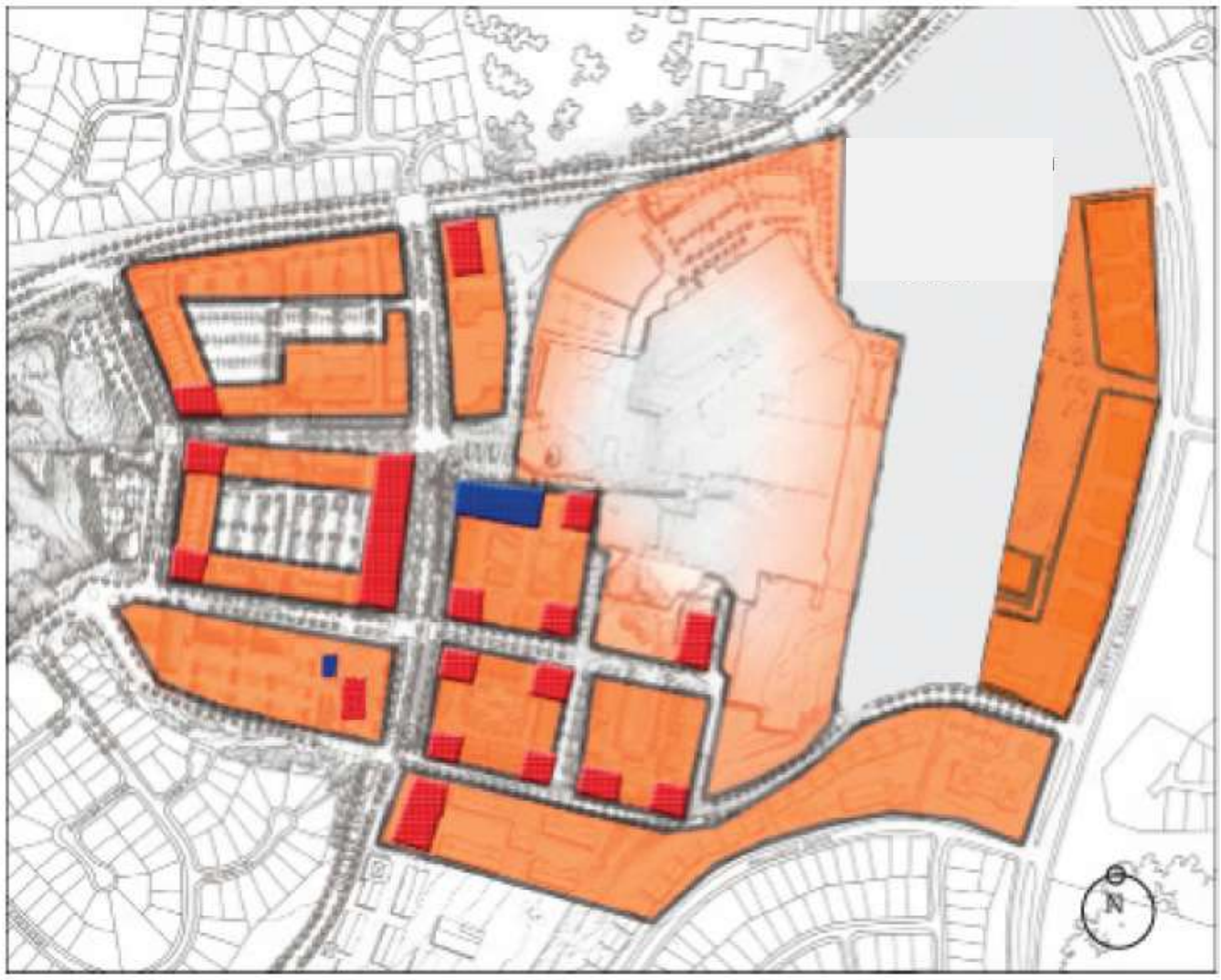
7.6.4 Corner elements can be higher than buildings except in precinct E and/ or where shadowing is unacceptable.

NOTE: Building height will also be limited by excavation cost for basement parking and demand.

NOTE: Precise heights and envelopes will need to be justified in Precinct Development Strategies or DAs.

NOTE: Building heights should be a little flexible where steep slopes occur in order that basement and semi basement levels are not counted as floors. This particularly so on Minga Avenue and College Avenue west near Cygnet Avenue.

Figure 7.5 - Building height



3 storeys

4 storeys

6 storeys

7.7 - Public domain implementation

ADVICE

7.7.1 As part of development consents for subdivision or other development involving the creation of new road(s) or lane(s), the developer will construct public lanes, roads, footpath paving, pedestrian weather protection.

7.7.2 As part of development consent for subdivision or other development the developer will:

a. construct footpath paving to the development's lane or road frontage and construct pedestrian weather protection

b. negotiate with the consent authority, construction of other public domain elements, including works on the carriageway.

Note: Public domain elements include but are not limited to:

- entry or gateway features
- landscaping/street trees
- squares, plazas (including those in private ownership), areas in front of building setbacks
- footpaths - street furniture, weather protection, paving
- carriageways and lanes
- traffic control measures
- public parking areas and large private parking areas
- pedestrian amenity measures
- signage for non-commercial purposes e.g. speed limit, transport/directional information and any commercial signage in the public domain (this will require licensing by Council)
- bike routes and facilities
- parks, open space and their embellishments
- sidewalk eating areas
- bus and taxi facilities
- public art
- lighting

Concepts/principles/provisions for public domain will be derived from this DCP and the Shellharbour City Centre Masterplan. Public domain provisions may apply to private domain.

7.8 - Master Plan Precincts

The Shellharbour City Centre comprises a number of sites or precincts which each have their own development pattern and function within the Master Plan. It is important to recognise and differentiate between each of these sites/precincts in terms of their existing development form and the proposed structure under the Master Plan and to identify the objectives and development strategies/principles for each of the sites. Note that some precincts overlap. See **Figure 7.6** below.

The City Centre has been divided into 14 precincts:

- Precinct A: Stoney Range bulky goods site
- Precinct B: City Park
- Precinct C: Lake Entrance Rd & Main St
- Precinct D: Central - Main St & Cygnet Ave
- Precinct E: Future Civic Precinct - Shellharbour City Hub
- Precinct F: Shellharbour Square northern car park, Aldi & KFC
- Precinct G Main Street - Memorial Dr & Lamerton Cres.
- Precinct H: The Hilltop - College Ave & Lamerton Cres. (vacant)
- Precinct I: College Ave and Benson Ave
- Precinct J: Existing Shopping Centre
- Precinct K: Existing Council Administration Offices and car parking
- Precinct L: Benson Basin
- Precinct M: Eastern Residential - Wattle Road
- Precinct N: School and aged care site

Figure 7.6 - Masterplan precincts



The Precinct boundaries are generally based on logical development patterns or extension options. Main Street Precinct overlaps a number of Precincts and forms the key spine tying together each of the sites within the City Centre in order to create an integrated and vibrant centre.

For each precinct, a strategy for future development is required which addresses the existing development on the site and the development potential and design objectives stated in this Section.

The strategy for each precinct relates to the overall principles and objectives of the masterplan.

Note that a precinct development strategy (PDS) can combine overlapping precincts.

7.9 - Precinct A: Stoney Range bulky goods

Precinct A is located at the western end of Shellharbour City Centre fronting onto Lake Entrance Road, adjoining the Harrison Park. The Precinct incorporates a range of land uses including a large hardware store, supermarket, a range of bulky goods retail stores, fast food restaurant and service station. In addition, a strip of residential dwellings front onto Cygnet Avenue. See **Figure 7.7** below.

Objectives

1. Allow for continued use of the site for bulky goods retail development.
2. Provide for possible residential development on the western and southern edges of the site.

Figure 7.7 - Precinct A



7.10 - Precinct B: Harrison Park (formerly City Park)

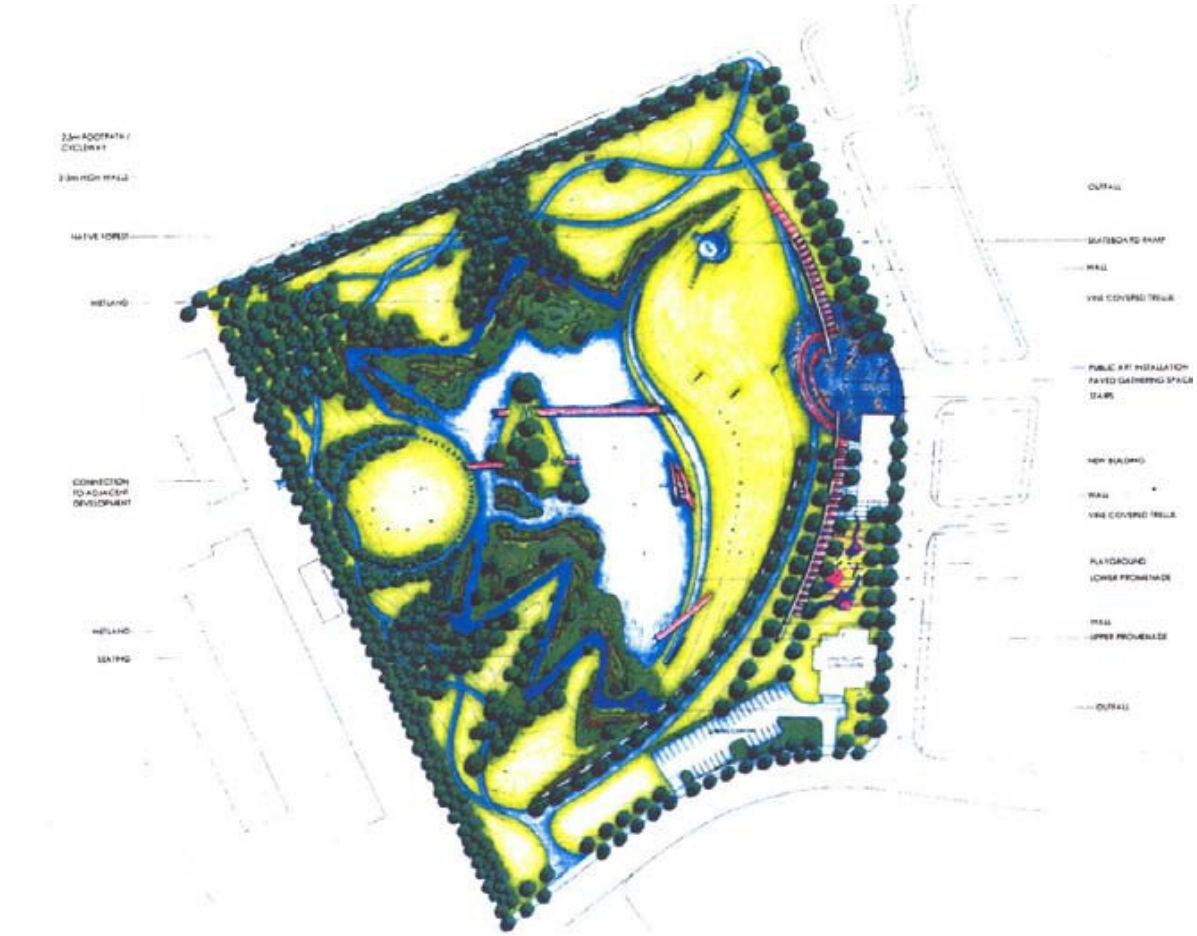
The objective of Harrison Park is to provide an area for recreation within the city centre site. See **Figure 7.8** below.

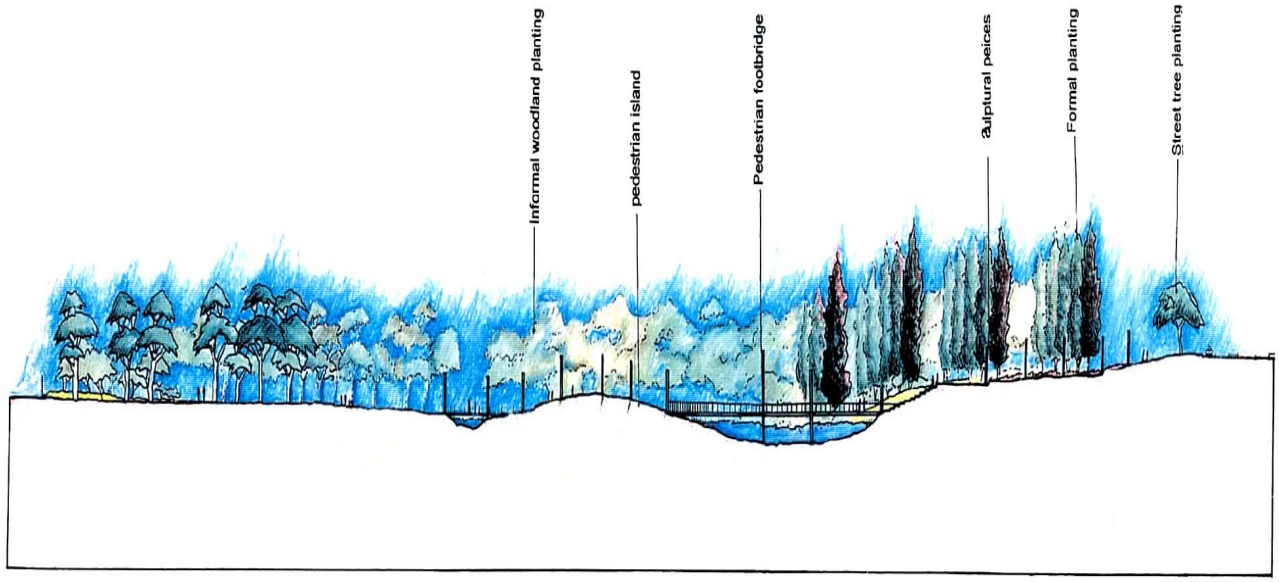
Objectives

1. Create different personalities for different parts of the park - a formal recreation/cultural edge, a natural wetland/lake system and a passive area of park/bush land.
2. Structures for different activities incorporated into park design (natural grass amphitheatre, lookout, sculpture garden, walking paths, nature trail, etc).
3. A large wetland/lake with a hard edge to the city side, a bird refuge island in the lake, and a natural wetland habitat on the southern and western edges.
4. Skate park, basketball courts and play areas to be part of the recreation edge.
5. Allow for the staged development of the park over time.
6. Allow for a formalised meeting space at the end of Memorial Drive which marks the transition from the street into the park and which will support a war memorial.
7. Provide for a future arts centre within the Park.

This precinct will be subject to separate Master Plan in the future. This should effectively form a Precinct Development Strategy for this area.

Figure 7.8 - Precinct B plan and section





7.11 - Precinct C: Northern Landcom

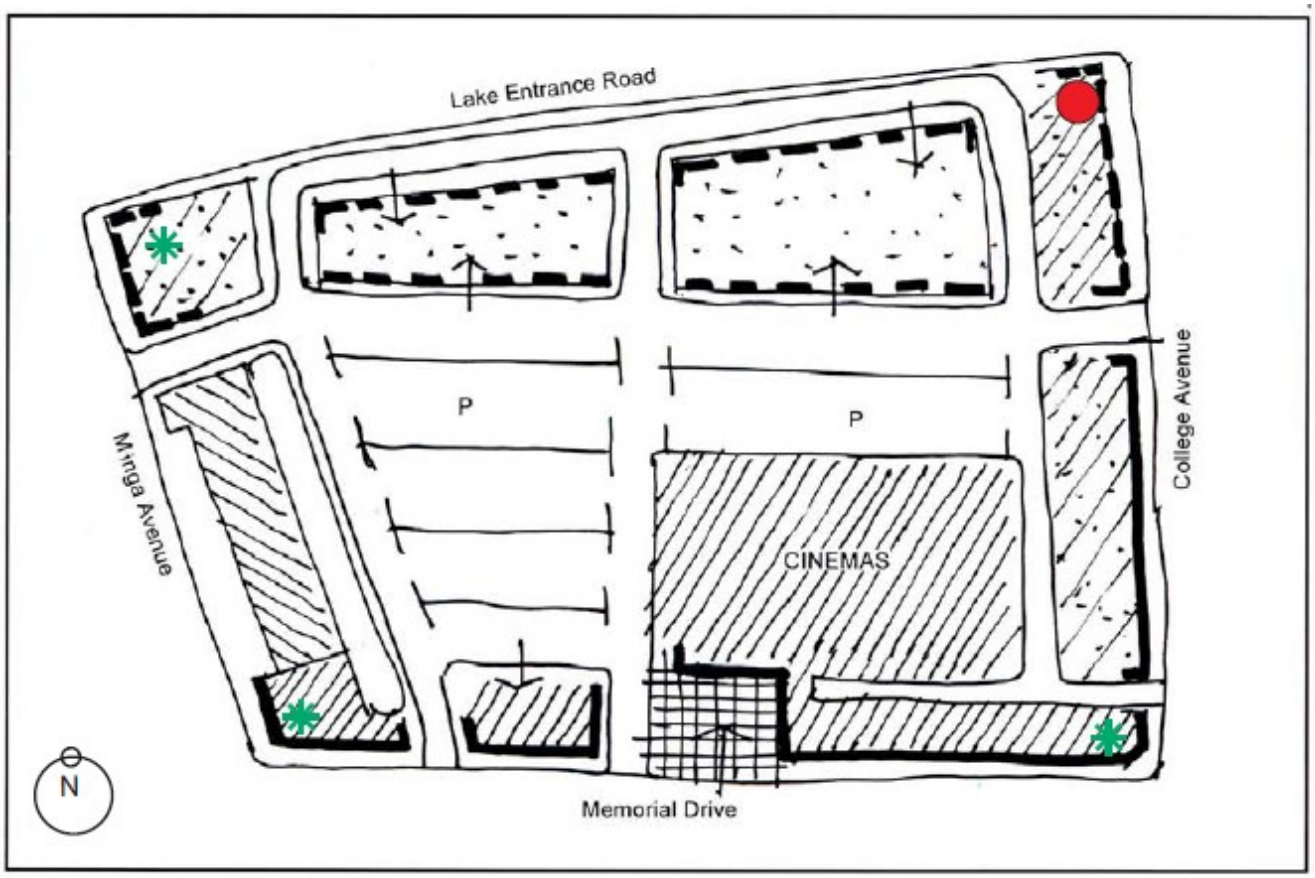
Precinct C is one of the key new development sites within the City Centre. Located at the northern end of the City Centre is fronts onto Lake Entrance Road, College Avenue, Memorial Drive and Minga Avenue. A cinema complex is located on Memorial Drive and a number of commercial/retail shops on College Avenue. See **Figure 7.9** below.

Objectives

1. Memorial Drive to support a mix of retail, commercial and entertainment uses which generate high levels of pedestrian activity.
2. College Avenue to support a mix of showroom and commercial uses which will enliven the street and create a gateway /entry to the City Centre yet not generate significant on street parking.
3. Locate bulky goods retail uses along highly visible locations adjacent to Lake Entrance Road with access from service road.
4. Mixed use and residential development along the Minga Avenue frontage, appropriate to the Harrison Park frontage.
5. Central block car parking areas.
6. Wide footpaths with awnings and verandahs; café/restaurants spilling out onto footpaths.
7. Cinema forecourt/public space on Memorial Drive to provide an intimate pedestrian space which connects to adjoining land uses.
8. Ensure development (especially residential) accounts for future mid-block multi-level parking.

A development strategy has been prepared and approved by Council for this precinct and is largely built out. Refer to height provisions in this Chapter/related **Appendix 3** for building height requirements of this precinct.

Figure 7.9 - Precinct C



LEGEND

- Active Frontage
- Semi-active Frontage
- Entry
- Public Place
- Retail / Entertainment
- Residential / Mixed Use
- Bulky Goods
- Retail / Showroom / Commercial
- P Parking (incl. future multi level parking)
- Focal Point
- Entry Gateway Feature

7.12 - Precinct D: Central - Memorial Drive/Cygnet Avenue

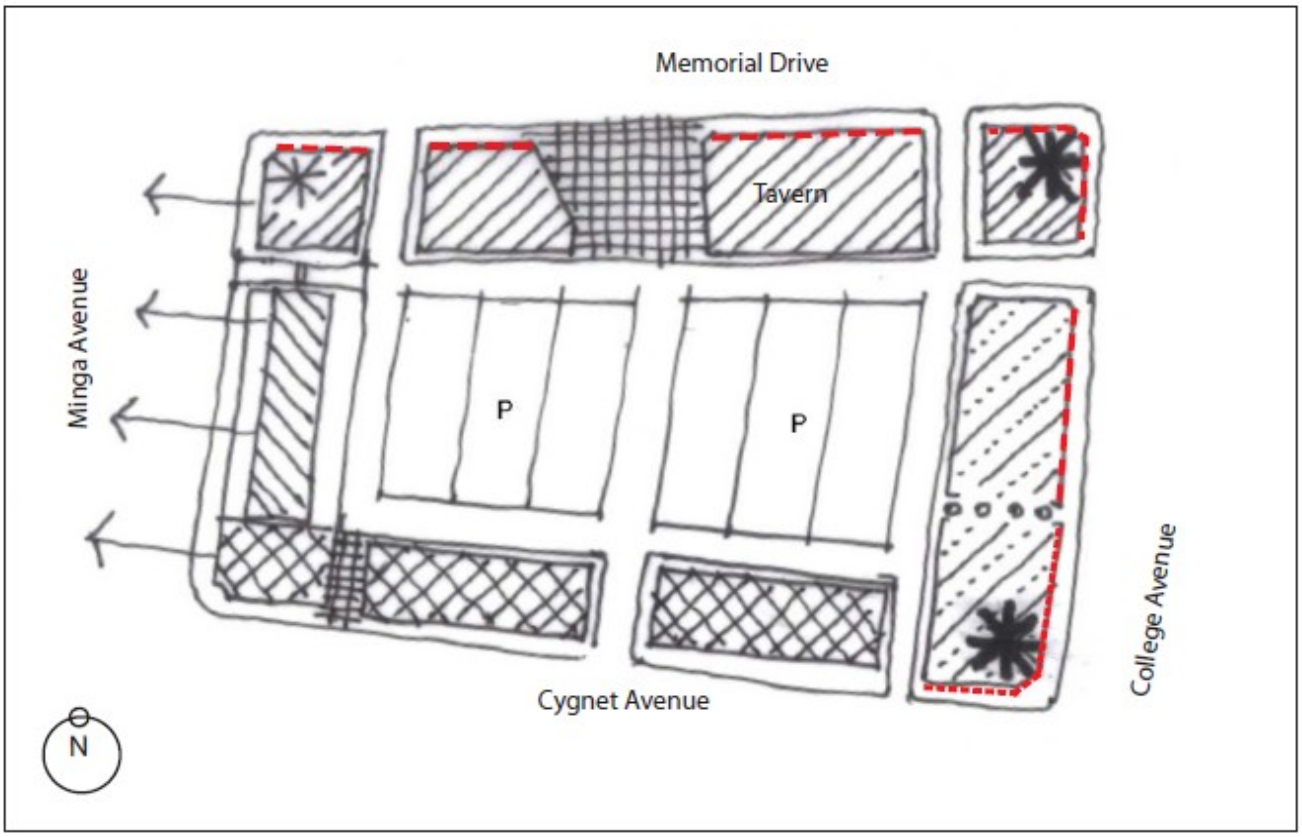
Precinct D is located on the southern side of Memorial Drive. College Avenue, Cygnet Avenue and Minga Avenue form the other boundaries for the precinct.

Precinct D is a key development site within the City Centre which is proposed to be the location for mixed-use development and has an existing pub. See **Figure 7.10** below.

Objectives

1. Memorial Drive to support a mix of retail, commercial and entertainment uses which generate high levels of pedestrian activity.
2. College Avenue to support a mix of, showroom, secondary retail and commercial uses which will enliven the street.
3. Mixed use and residential development along the Minga Avenue frontage.
4. Central block car parking areas.
5. Wide footpaths with awnings and verandahs.
6. Café/restaurants spilling out onto Memorial Drive footpaths.
7. A mix of retail, commercial, secondary retail, showroom and uses to Cygnet Avenue.
8. Building height generally 2-3 storey to the street (except on Minga Avenue where steep slope may allow for apparently taller buildings but still 3 storeys to rear lane, and College Avenue where buildings to 4 storeys are appropriate to accommodate the uneven slopes on either side of the street).
9. Ensure development (especially residential) accounts for future mid-block multi-level parking.

Figure 7.10 - Precinct D



LEGEND

- Focal Point
- Predominantly Retail/Entertainment
- Predominantly Residential
- Residential / Mixed Use
- Public Place
- Retail/Showroom/Commercial/ Residential
- P — Parking (incl. future multi level parking)
- Active Frontage

7.13 - Precinct E: future civic and cultural precinct

Precinct E is located at the southern end of the City Centre and has frontage onto Cygnet Avenue and College Avenue. The site is undeveloped and has a significant change in level from College Avenue sloping down Cygnet Avenue. A small creek channel dissects the site north-south along the western boundary. See **Figure 7.11 and 7.12** below.

Objectives

1. Provide for civic, cultural and community development on the perimeter of the City Centre particularly on Cygnet and College Avenue.
2. Provide extensive street planting to enhance the public domain.
3. Provide on-site parking for civic, cultural and administration purposes.
4. Create a community hub for community development, information, education, recreation and Council business.
5. Construct new Council chamber and civic auditorium up to 6 storeys (from College Avenue/Cygnet Avenue).
6. Create a small civic square at the corner of Cygnet and College Avenues.
7. Address buildings to Cygnet and College Avenues.
8. Create, over time, a vital civic/cultural precinct with galleries, museums, theatre, auditoria, Council chambers, Council administration and a city space providing library, museum, customer and sessional services.
9. Provide Porte cocheres in vicinity of Cygnet/College corner.
10. Prepare Precinct Development Strategy to explore fully future site opportunities.
11. Minimise permanent vehicular access points to the Precinct (preferably 1 only). Other access points should be temporary to facilitate staged development of the Precinct.
12. Explore vehicular access options in PDS i.e. existing roundabout at west of site on Cygnet Avenue, Gadu Lane extension.
13. No vehicular access to College Avenue.
14. Landscaping between Precinct E development and properties to south:
    a. to not cause greater shadowing than the Civic Precinct's buildings/structures on properties to south (this may necessitate pruning/lopping)
    b. provide a visual screen between users of parking in Precinct E and buildings and properties to south
    c. provide ground level visual permeability within Precinct E
15. Lighting of Precinct E must not encourage use of Precinct E after hours.
16. Encourage passive surveillance between car park and buildings during opening hours.
17. Consider the re-alignment and re-prioritisation of intersection of Minga & Cygnet Avenue to enable right turns from east to north. Under this arrangement the east to north movement becomes the major through movement and the western approach becomes the side street.
18. Ensure that shadowing is no greater than that indicated on the **Figure 7.12** titled, Winter Solstice Precinct E Shadow.

Figure 7.11 - Precinct E plan

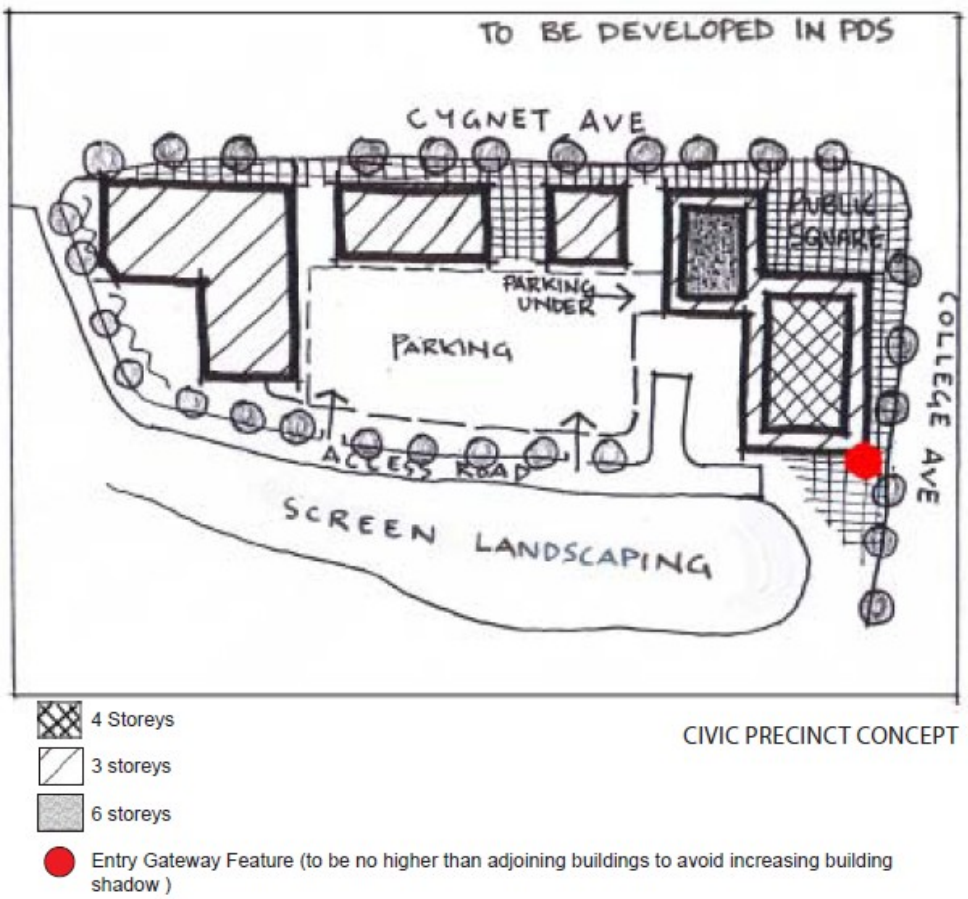
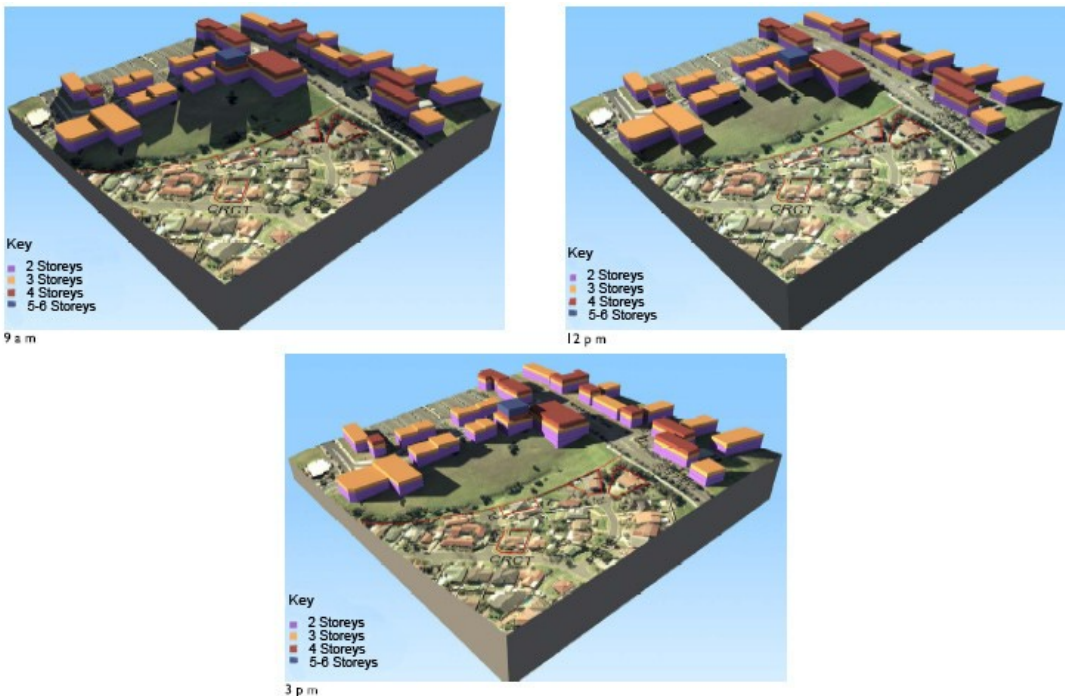


Figure 7.12 - Precinct E winter solstice shadow



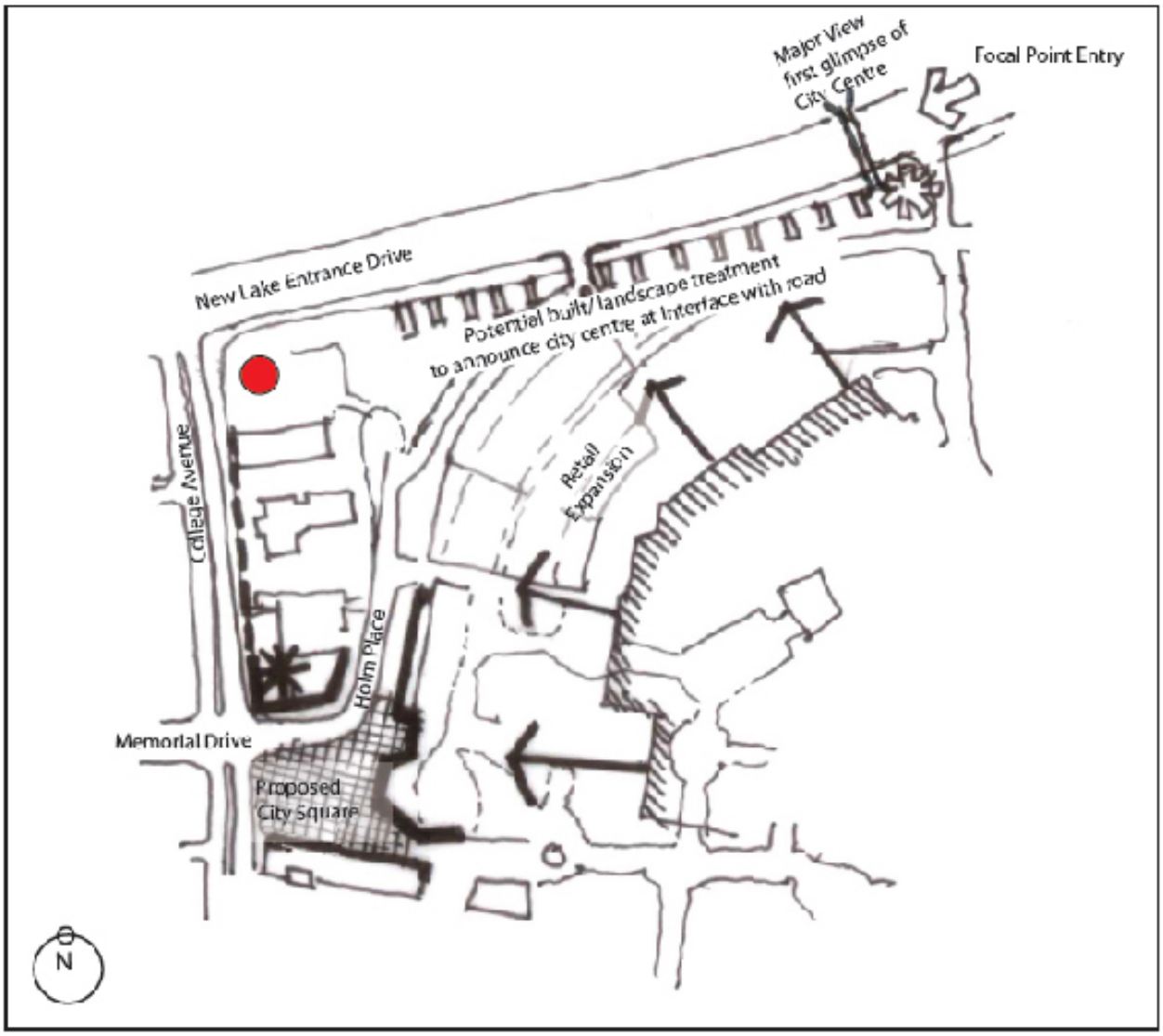
7.14 - Precinct F: Stockland Shellharbour northern car park, Aldi and KFC

Precinct F, fronting Lake Entrance Road, College Avenue and Lamerton Crescent, currently contains the main at-grade car park and pedestrian entrances to Stockland Shellharbour. An Aldi supermarket, a number of small retail and commercial outlets and a fast food outlet, are located on the western edge of the precinct with access off Holm Place. A bus stop is located at the north eastern corner of the precinct with existing bus routes passing through the car park often resulting in conflict with the car park users. The area is also highly visible from Lake Entrance Road. See **Figure 7.13** below.

Objectives

1. Allow for potential future expansion of shopping centre, retail and/or car parking area (perhaps with multideck parking).
2. Provide an attractive edge treatment to Lake Entrance Road which may include landscaping/screening and built semi-active frontages.
3. Ensure vehicle - pedestrian movement through the site is maintained.
4. Design buildings on the upper main street (Memorial Drive) frontage to make the change of level between main street and the shopping centre car park and shopping centre entrances more accessible.
5. Buildings along main street/City Square to be broken into a series of vertical elements to create a vertical street rhythm.
6. Promote active frontages to generate activity on street level.
7. North façade/edge treatment of built form around main street public space should address the distant view.
8. Emphasis (height and detail) of building corners.
9. Buildings to have a defined parapet, cornice or roof element; provide a sense of enclosure and definition to the surrounding streets and public spaces to contain the space and add to the urban experience.
10. 2 - 3 storey development on city square and allow for future option of taller buildings (up to 6 storeys), behind on the south side.
11. Future development of sites fronting College Avenue should seek to address the street and create a gateway/entry to the City Centre.

Figure 7.13 - Precinct F



LEGEND

- Active Frontage
- Semi-active Frontage
- Public Place
- Focal Point
- Entry Gateway Feature

7.15 - Precinct G: Main Street

The Main Street Precinct extends from the Harrison Park through to the potential connection point into Stockland Shellharbour Shopping Centre. Main Street extends along Memorial Drive and into the proposed City Square.

The objective of this Precinct is to create a vibrant and active main street with a mix of retail, commercial and entertainment uses and to create a seamless integration between the new development on Memorial Drive and Stockland Shellharbour. See **Figure 7.14** below.

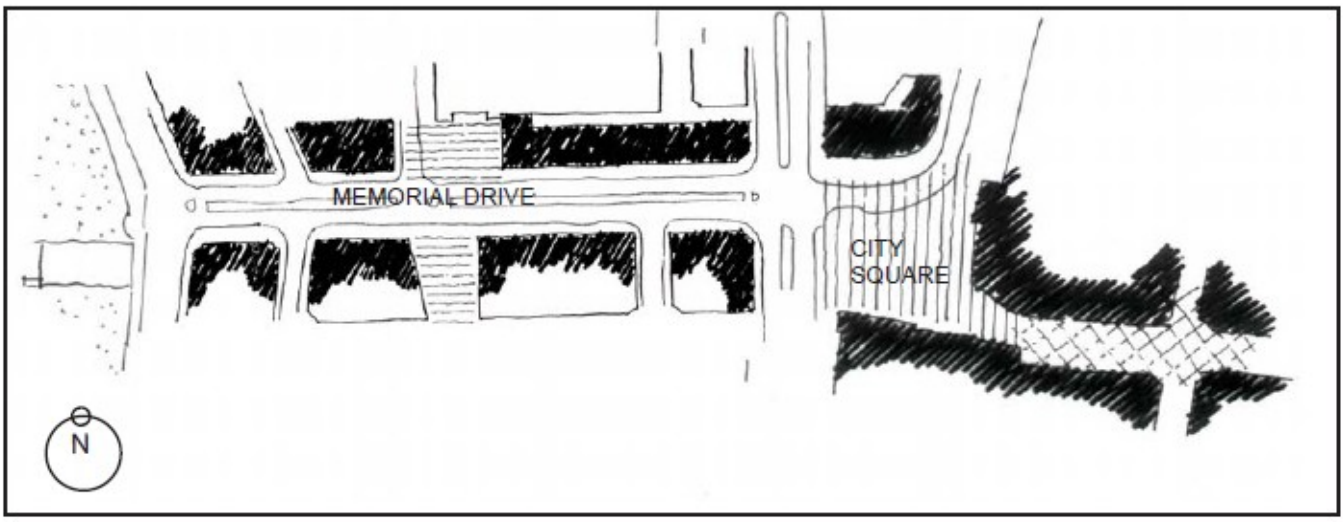
The Precinct can be separated into two identifiable areas:

- Upper Main Street: the section of Lamerton Crescent east of College Avenue to the Shopping Centre.
- Lower Main Street: the new section of Memorial Drive west of College Avenue.

Objectives

1. Wide public footpaths (5 metres) with pedestrian shelter.
2. 'Lower Main Street' to be wide (25 metres) with central planted median with two travel lanes, two parallel short term parking lanes and wide footpaths, creating a boulevard feel.
3. 'Upper Main Street' to continue planting theme along footpaths continuing the boulevard feel and to form a public pedestrian shareway at the eastern end integrating Lamerton Crescent into a new key entry point into Stockland Shellharbour Shopping Centre.
4. Ensure public spaces are adequately scaled to recognise the relationship between the pedestrian and buildings.
5. Provide a new entry point into the Shopping Centre which represents an extension of Main Street.
6. A diversity of building types and styles but with a common vocabulary.
7. Buildings to be broken into a series of vertical elements to create a vertical street rhythm.
8. Emphasis (height and detail) on building corners.
9. Buildings to have a defined parapet, cornice or roof element.
10. Provide a sense of enclosure and definition to the Main Street and public spaces to contain the space and add to the urban experience.
11. 2, 3, 4 storey development with potential for increased height (up to 6 storeys) south of city square.
12. A mix of entertainment, retail, cultural and commercial uses with opportunities for residential apartments above.
13. High quality design and finish to development along Main Street (Memorial Drive).
14. Ensure good pedestrian and vehicle access along Main Street (Memorial Drive).
15. Provide bus stops and taxi ranks in the vicinity of Lamerton Crescent/Memorial Drive and College Avenue intersection.

Figure 7.14 - Precinct G



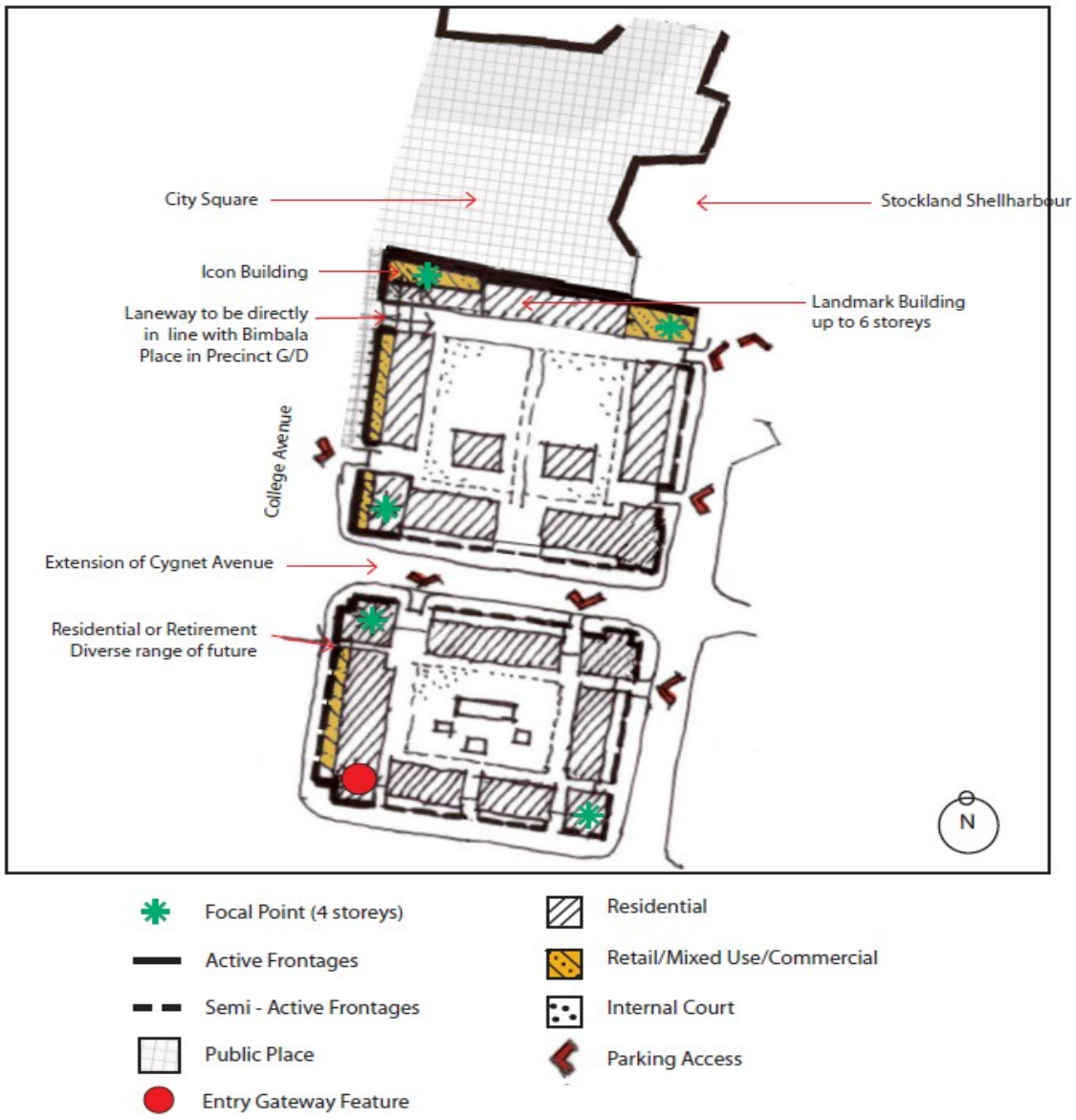
7.16 - Precinct H: vacant site

Precinct H is the highest point in the City Centre and is surrounded by College Avenue, Lamerton Crescent/Main Street and Benson Avenue. It is a key site linking Stockland Shellharbour Shopping Centre and the Main Street. See **Figure 7.15** below.

Objectives

1. A mix of entertainment, retail, residential, retirement and commercial uses.
2. Diversity of building types and styles but with a common vocabulary.
3. Buildings fronting the City Square to be broken into a series of vertical elements to create a street rhythm.
4. Emphasis (height and detail) of building corners.
5. Buildings to have a defined parapet, cornice or roof element.
6. Provide a sense of enclosure and definition to the surrounding streets and public spaces to contain the space and add to the urban experience.
7. Promote active frontages to generate activity on street level.
8. 2 - 3 storey development on City Square frontage and allow for future option of taller buildings (up to 6 storeys) on the south side.
9. Provide for road connection across the site (east-west) connecting Cygnet Avenue and South Road for use by the general public, of a width consistent with the leg of Cygnet Avenue to the west, as part of the redevelopment of Precinct H.
10. Provide for on-site retail/commercial/entertainment, parking at grade.
11. Provide for central block and/or internalised parking and access from Lamerton Crescent, College Avenue and extended Cygnet Avenue.
12. Ensure good pedestrian access is provided across the site and through to the City Square.

Figure 7.15 - Precinct H



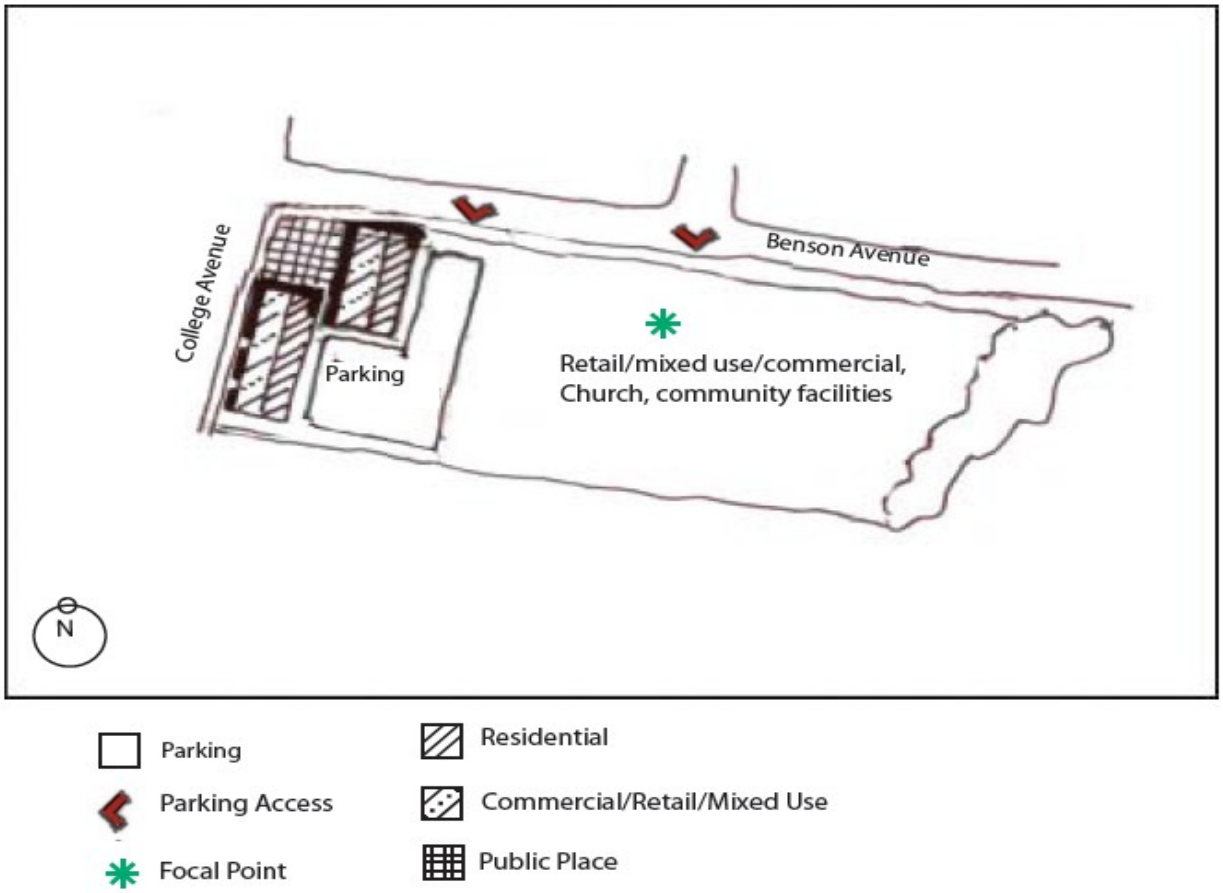
7.17 - Precinct I: Civic Video site

Precinct I is located on the corner of College Avenue and Benson Avenue. Part of the precinct contains a small commercial development with the remainder being undeveloped. See **Figure 7.16** below.

Objectives

1. To support a mix of church and community facilities, retail, commercial and mixed commercial/retail/residential uses which will enliven the street.
2. Buildings should front the street with car parking at the rear.
3. Provide a sense of enclosure and definition to the street.
4. Future access road to the eastern portion of the precinct should be opposite Lamerton Crescent.
5. Consider future quasi-public space on N-W corner of the site with redevelopment.
6. Create focal point on the vista south from Lamerton Crescent.

Figure 7.16 - Precinct I



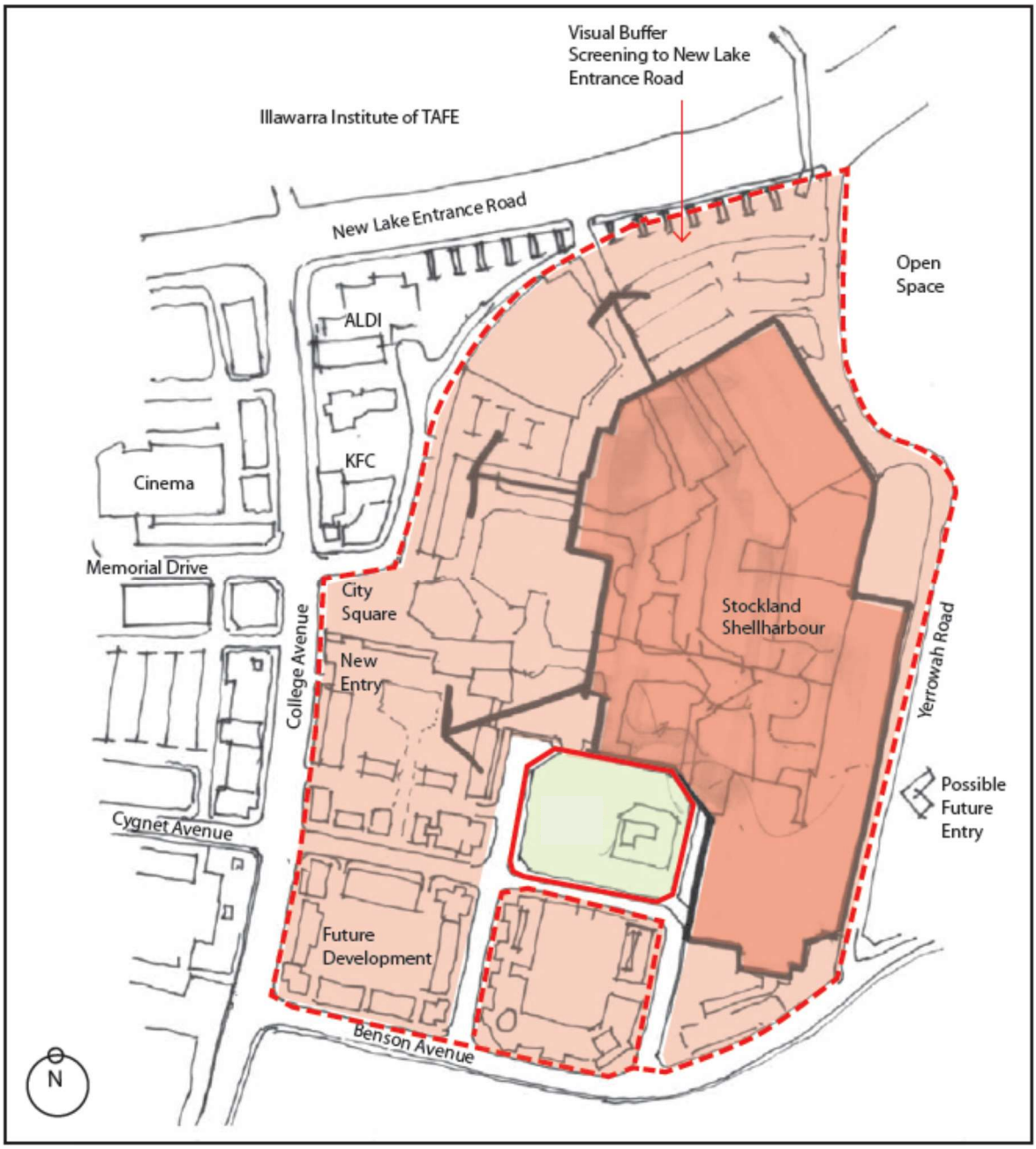
7.18 - Precinct J: existing Stockland Shellharbour shopping centre

The Stockland Shellharbour Precinct incorporates the shopping centre. Stockland also own site H which will permit expansion to the west and connection/integration with Memorial Drive. See **Figure 7.17** below.

Objectives

1. To provide for revitalisation and expansion of Stockland Shellharbour shopping centre.
2. Create a new entry point into the Shopping Centre to connect from Memorial Drive via the City Square.
3. Further investigation to be undertaken into the provision of more formalised public domain space connecting the Village Green with a proposed future eastern entry point into the shopping centre.
4. Improve the appearance of the eastern façade of the centre, when viewed from the east, with an attractive edge, if and when expansion of the centre occurs in this direction.
5. Upgrade Yerrowah Road between Benson Avenue and Lake Entrance Road to allow for future public transport route (subject to negotiations).
6. Ensure any future building extensions provide semi-active frontages onto access roads where possible.
7. Ensure that buildings fronting New Lake Entrance Road provide an attractive contribution to the townscape from that road.

Figure 7.17 - Precinct J



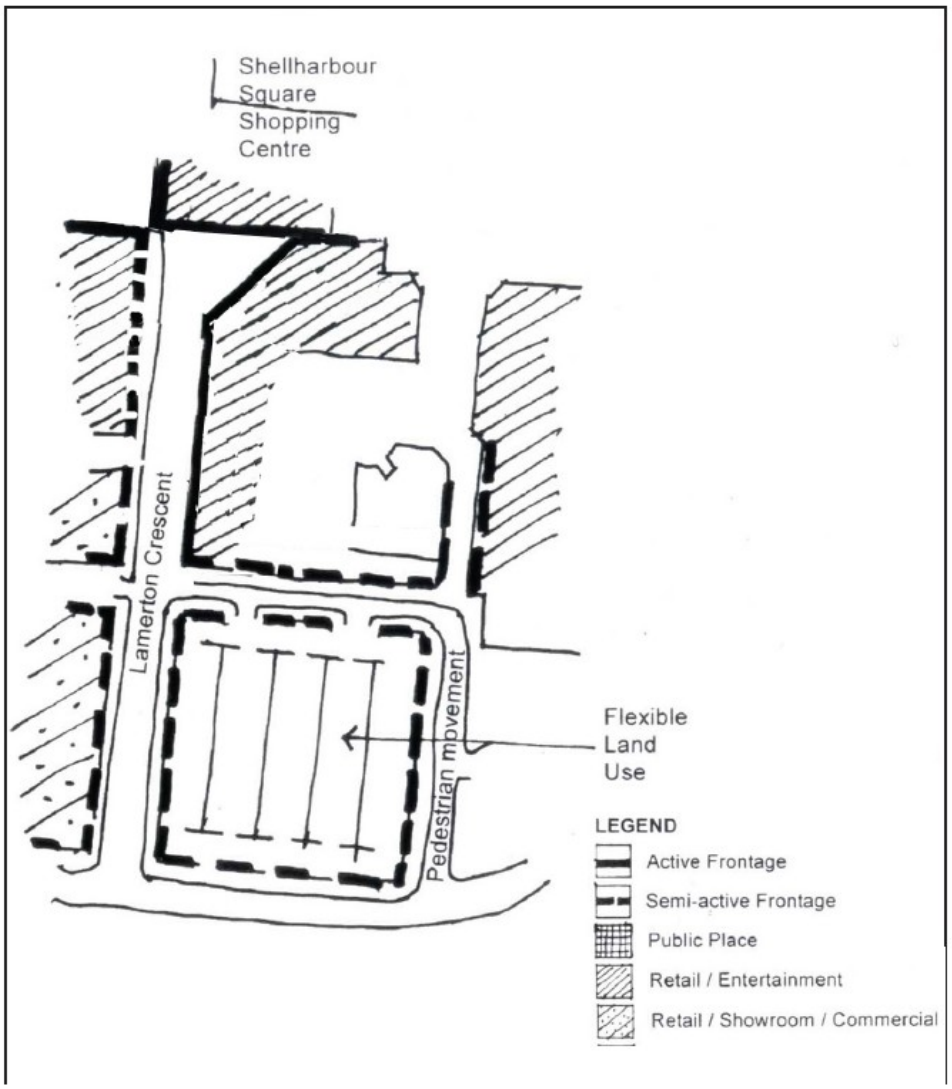
7.19 - Precinct K: Council administration building and car park

Precinct K currently contains the Shellharbour City Council Administration building, plaza and the car park which services both the Council building and the shopping centre. The Council building is a 4 storey building surrounded by an open plaza on the northern and eastern sides with access also from Lamerton Crescent and South Road. See **Figure 7.18** below.

Objectives

1. To provide for future revitalisation and expansion of the shopping centre and/or expansion of offices.
2. Provide a mix of retail, residential and commercial uses.
3. Provide an active built frontage to the remnant portion of Lamerton Crescent.
4. Provide adequate car parking areas on site.
5. Provide potential for mixed use residential throughout this precinct particularly to the south.

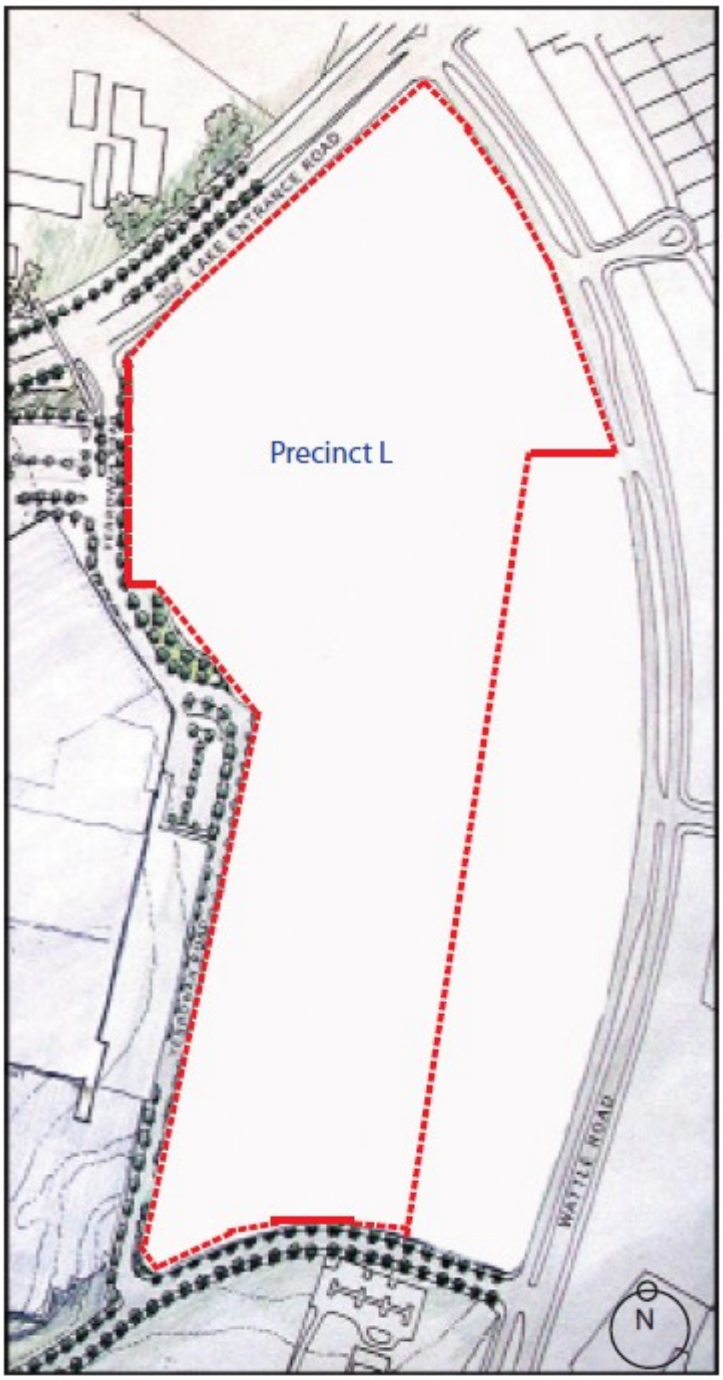
Figure 7.18 - Precinct K



7.20 - Precinct L: Benson Basin

To provide for sporting facilities on part of the site and other uses as provided for in LEP 2013. **Figure 7.19** below.

Figure 7.19 - Precinct L



7.21 - Precinct M: eastern residential

Precinct M is located at the eastern edge of the City Centre on Wattle Road. The site is primarily undeveloped with only a small portion of residential development located at the southern end.

Objectives

1. Provide for future residential development including senior's living/senior's facilities.
2. A mix of housing types and styles within a co-ordinated framework (possibly retirement living).
3. Extensive street planting on edges and continuation of avenue planting along Wattle Road.
4. The provision of a limited palette of front fence types to contribute to the character of the public domain.
5. Development to front both Wattle Road and internal access road.
6. On-site parking for residential development.
7. Provide east-west thru-site pedestrian/cycle connection with potential eastern access to Stockland Shellharbour.

A Precinct Development Strategy for Precinct M was approved by Council on 15-5-12. See Council's website.

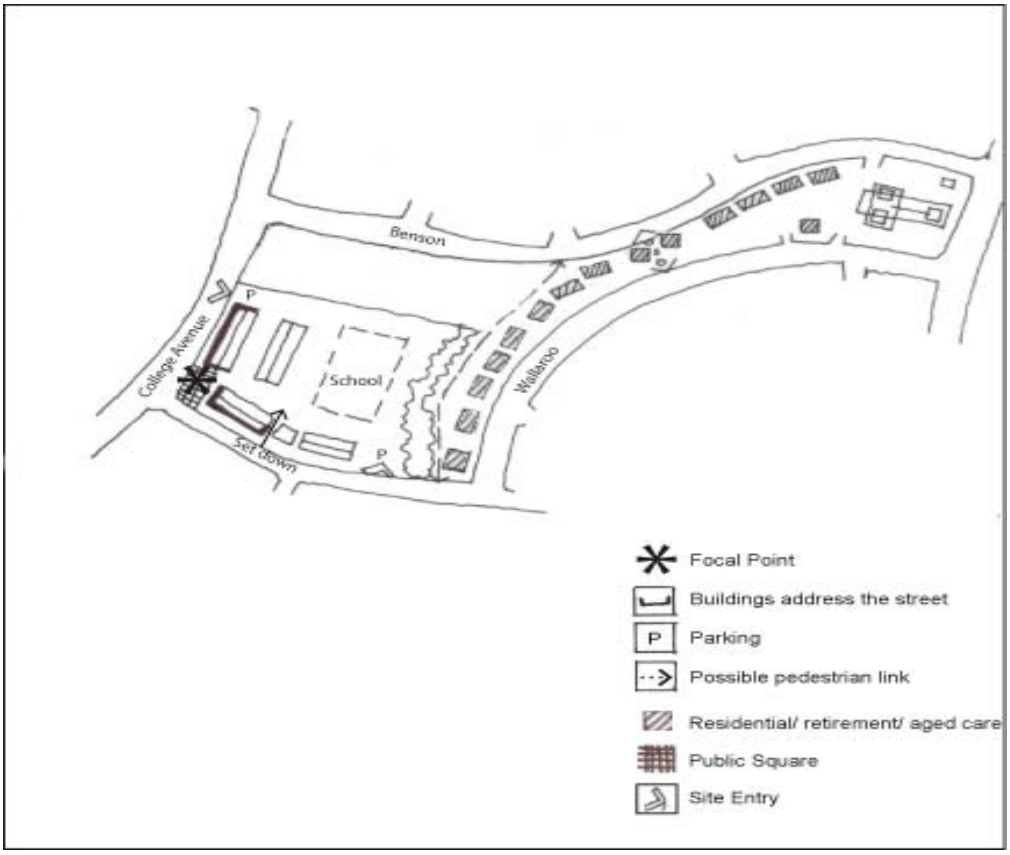
7.22 - Precinct N: school and aged care site

A large portion of Precinct N is developed with a primary school, preschool, aged care village and church. It is proposed that the land north of the primary school be developed for a high school and church and the land east of the age care village support further residential development. See **Figure 7.20** below.

Objectives

1. Provide internalised parking and access to the school from College Avenue and Glider Avenue for school site.
2. Ensure good pedestrian access is provided across the site.
3. Provide key corner element on College Avenue frontage as a landmark (axis/focal point to College Avenue).
4. provide retirement housing/aged care between Benson Avenue and Wallaroo Drive and integrated with the local residential community and the city centre.

Figure 7.20 - Precinct N



NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 8 – CENTRE – BASED CHILD CARE FACILITIES

State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 (the SEPP) determines that a consent authority must take into consideration the state government's Child Care Planning Guideline (CCPG) when assessing a development application (DA) for a centre-based child care facility.

For development applications for centre-based child care facilities please refer to the State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 on the NSW legislation website and the CCPG on the Department of Planning and Environment website.

In addition, where a SEPP does not provide controls to adequately assess a development application, relevant chapters of this DCP will need to be considered such as Chapter 13 Parking, Traffic and Transport.

The SEPP provides for certain development to be complying development.

The SEPP and CCPG also provide the circumstances where development will need the concurrence of the regulatory authority (NSW Secretary of Education).

Refer to the SEPP and CCPG for DA information requirements, in addition to the DA requirements on Council's website.

Child education and care services, their providers and supervisors must obtain any approvals/licences from the Department of Education. Application and notification forms can be found on the Department of Education website.

NOTE: Where a centre based child care facility is located on bush fire prone land, the development is an integrated development under the Environmental Planning & Assessment Act and a Bushfire Safety Authority is required from NSW Rural Fires Service.

NOTE: For further information, see also:

1. **Legislation relevant to centre based child care facilities & licensing requirements**
2. **Building Code of Australia**
3. **AS/NZS 4486.1 Playground Equipment**
4. **Food Act 2003**
5. **Council's Food Premises Code**

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 9 - INDUSTRIAL DEVELOPMENT

The objectives and development advice of this Chapter apply to industry, warehouse, vehicle sales or hire premises, service stations and other developments permitted on industrial zoned land including ancillary uses that serve the day to day needs of workers in surrounding developments.

Objectives

1. To create high quality industrial areas with building and site design that are both functional and aesthetically pleasing, along with appropriate landscaping and open space areas within each site, to contribute positively to the visual character of the locality especially as seen from the street.
2. To minimise the visual and environmental impact of development on the adjoining residential, rural residential and other sensitive receiving environments.
3. To ensure that ecologically sustainable development principles are integrated into all industrial developments.
4. To ensure industrial development is designed to create a pleasant working environment and to cater for the needs of persons working within these areas.
5. To ensure that industrial buildings near residential and other sensitive areas can accommodate a range of industrial uses without unacceptable impacts on the amenity of those areas.
6. To ensure that new development does not compromise the effective and ongoing operation and function of roads, especially classified roads.
7. To ensure new development, including signage structures, does not constitute a safety hazard to aviation operations.
8. To minimise and regulate activities that have a negative impact on the environment and to ensure such activities are not detrimental to public health.
9. To ensure infrastructure and service requirements of the proposed and anticipated future users, including for example landfills, parking, waste, loading, storage, recycling etc, are facilitated.

9.1 - Building lines and setbacks

ADVICE

Front building lines

9.1.1 Industrial development must be setback:

a. 7 metres plus 1/2 building height for sites with frontage to a main road

b. 5 metres plus 1/2 building height for all other sites.

9.1.2 Variation to the building setback may be considered for lots in the airport operational areas that adjoin airport runways as taxiways, and for parapet walls on other lots to a minimum of 5 metres. Justification for the variation must be submitted with the DA. Each proposal for variation will be determined on its merits.

Secondary building line

9.1.3 Where an industrial building has a frontage to more than one street, the setback from the secondary street must be 4 metres minimum.

Side & rear boundary setbacks

9.1.4 Side and rear boundary setbacks of buildings will be assessed on the merits of the application and subject to the requirements of the BCA. Where the site adjoins a public reserve, such as active or passive open space, a side/rear boundary setback may be required to enable landscaping between the building and public reserve so as to screen the development.

Car parking and fencing setbacks

9.1.5 Car park areas and fencing of industrial development must be setback (see **Figure 9.1** below):

a. 4.5 metres (minimum) from the front boundary where the site has frontage to a main road

b. 3.5 metres (minimum) from the front boundary where the site has frontage to other roads

c. 4 metres (minimum) from a secondary boundary for corner allotments.

9.1.6 Fencing may be allowed within the setback areas where it is predominantly open style, decorative, black/dark grey in colour and does not exceed 1.8 metres in height.

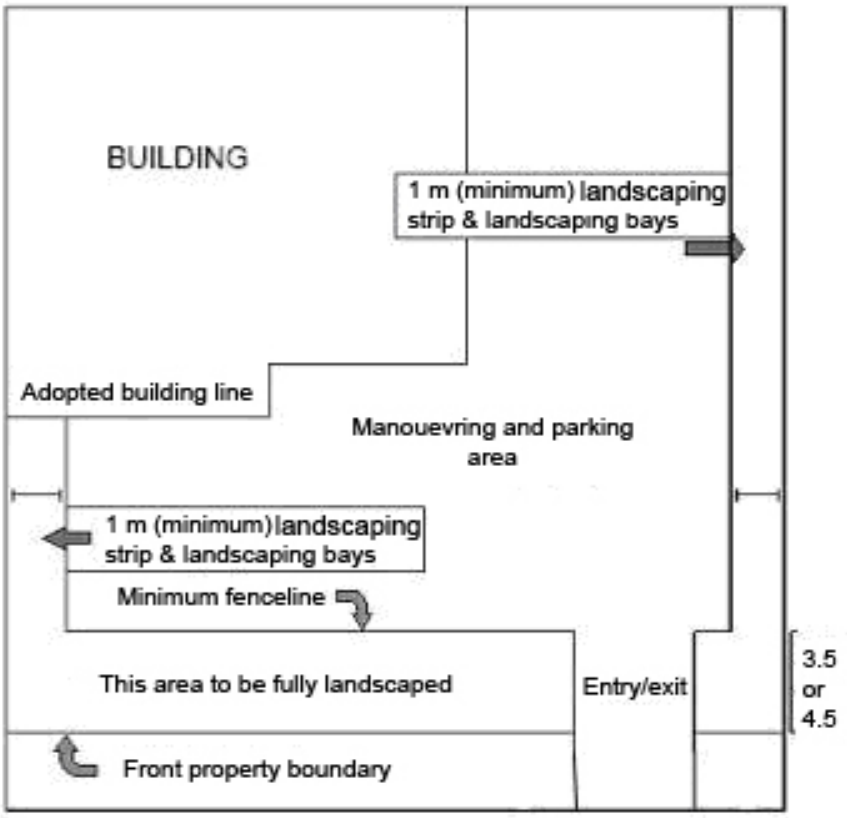
9.1.7 Car parking, access driveways and manoeuvring areas must be setback one metre (minimum) from the side boundaries.

9.1.8 Vehicle display areas associated with motor showroom developments may on merit encroach into the front landscaped setback areas.

Landscape in setback area

9.1.9 The area between the property boundary and the setback requirements for car parking, fencing and manoeuvring areas must be landscaped.

Figure 9.1 - Industrial development setback requirements



Note: area between the front property boundary line and fence shall be landscaped

9.2 - Design

ADVICE

Built form and design

9.2.1 All elevations and roof surfaces are to be constructed predominantly in masonry, textured pre-cast concrete panels or metal cladding. Where the building elevation is visible from a public place or road, metal cladding must not be the dominant building material.

9.2.2 Building design must incorporate variation in parapet design, roofing heights and treatments.

9.2.3 Low-reflective roof surfaces are mandatory. Reflective materials such as mirror glass, colorbond TM white or off-white metal colours will not be permitted. The reflectivity index for glass used externally in the construction of a building (as a curtain wall or the like) must not exceed 20%.

9.2.4 Development, which is free standing or abutting adjoining buildings, must avoid large, blank wall surfaces when viewed from a public place or a residential area. Substantial elevations must be articulated by either structural variation and/or a blend of external finishes and colours and decorative elements.

9.2.5 All roof mounted plant/equipment must be designed and screened in a manner that complements the building.

9.2.6 The design and siting of development on land adjoining land zoned for open space and/or riparian areas must have regard to the visual and functional opportunities of the location.

9.2.7 The main entry to the building must be easily identifiable and directly accessible from the street.

Design to minimise nuisance

9.2.8 Major openings in buildings and all areas where work may be conducted outside the building must be located away from the nearest sensitive land uses.

9.2.9 Industrial buildings sharing a common side/rear boundary with residential areas must minimise potential impacts by:

a. screening parking and storage areas

b. providing a buffer of at least 3 metres in width where the building wall has no openings and 6 metres where the building wall has openings

c. maximising the distance of potential noise sources away from residential areas

d. providing effective acoustic screening to areas where work could be conducted outside the building including waste collection

e. noise emitting services such as air conditioning equipment, pumps and ventilation fans are located as far as is practical from residential areas.

NOTE: Acoustic screens may serve the purpose of any required buffer or visual screening, if appropriate.

9.2.10 Buffers, referred to above, along boundaries must comprise tall trees and shrubs including a mix of fast growing pioneer species and mature stock of slower growing permanent species, which will form a complete visual screen of a minimum of 4 metres in height within 3 years of planting.

9.2.11 Industrial buildings fronting residential areas must present a high quality façade and locate all on-site activity, storage of vehicles, goods and materials, and servicing to the rear of the site.

9.3 - Site elements

ADVICE

Waste storage areas

9.3.1 Industrial developments must provide the physical infrastructure for the management of waste generated during the operational life (including future users) of the development. It must be demonstrated that the dimensions/area of waste storage areas are adequate to store waste pending collection for a range of likely future users of the development. Waste management and associated infrastructure must comply with the requirements of **Chapter 15**, Waste minimisation and management.

9.3.2 The siting of recyclables and landfill waste storage areas must consider where and how waste will be placed for collection.

9.3.3 Waste storage areas should be located within the industrial building / industrial unit. Where external storage areas are proposed, the following requirements apply:

a. where any materials or products are to be stored outside buildings, details must be provided with the development application.

b. external storage areas not be visible from any public areas.

c. in the case of development applications which do not include buildings, screen walls and/ or landscaping or other approved screen devices must be erected in order to effectively prevent the use of the land being viewed from a public road, nearby public reserve, or from residential developments.

d. screening devices must be designed to harmonise with any existing or proposed landscaping. Landscaping should be used to break up large expanses of screen walls. Full details of screening devices must be shown on the architectural plans including materials, setbacks and dimensions.

e. screen walls must incorporate finishes which match or are compatible with external finishes of the industrial building elsewhere on site. Screen walls must be constructed of robust building materials. Lightweight construction using metal sheeting, lattice or similar materials is not acceptable.

f. any materials to be stored that can impact water quality must be covered or runoff water must be treated.

Parking & Access

9.3.4 All parking must be provided off-street and must be appropriately line marked. Parking areas must be easily accessible and adequately identified at the entrance to the development.

9.3.5 All loading and unloading must take place within the loading docks for each building. Where practical, loading facilities or vehicular entries to buildings must not be provided on any street elevation. Where such facilities can only be provided to street frontages, they must be screened by suitable landscaping.

NOTE: Designated car parking areas are not to be used for storing vehicles under repair, waste bins or for any other storage function.

Landscape

9.3.6 Landscaping must complement the scale and bulk of the industrial development and make a positive contribution to the streetscape.

9.3.7 Tree planting in the landscape frontages must achieve a canopy spread over 50% of the site frontage and/or car parking areas within 5 years of planting.

9.3.8 Existing trees that already contribute to these requirements should be retained.

Gates

9.3.9 All gates must be located behind the designated landscape area.

9.3.10 Where possible, gates must be of a sliding type in order to prevent problems relating to access to and within industrial developments and vehicle sight distance.

9.3.11 Where swinging gates are installed, gates must not swing towards the roadway nor restrict access to any part of the development, including car parking spaces, manoeuvring areas, general access to/from the property and sight distance.

9.3.12 Where driveways are located on a main road, gates must be indented from the front boundary with a minimum length of 6 metres so as to provide an area for vehicles when the gates are closed. This length may need to be increased depending on the use of the building/s and/or the type of vehicles that will access the development.

Fencing

9.3.13 Fencing should be designed to provide adequate security for industrial developments without detracting from the development and streetscape.

9.3.14 Side and rear boundary fencing must not exceed 2.5 metres in height.

9.3.15 The location of the front fencing will be dependent upon the type of fencing.

9.3.16 The preferred style of side/rear boundary fencing is either galvanised chain wire with a coloured PVC coating or galvanised steel/aluminium tube fencing or a combination of masonry and aluminium tube fencing.

9.3.17 Galvanised chain wire, untreated or coloured metal, wooden or barbed wire fencing will not be permitted as fencing in front of the adopted building line or where visible from a public place.

9.3.18 Fencing must not restrict the function of existing and proposed overland flow paths.

Lighting

9.3.19 The design of outdoor lighting poles and fixtures must be visually unobtrusive during daylight.

9.3.20 Bollard lights and wall mounted lights may be used at entrances to buildings and in setbacks along street frontages.

9.3.21 Choice of material for poles should be related to other building materials.

9.3.22 The design of internal lighting and spotlighting must ensure no adverse impact on approaching vehicles in terms of glare, blinding effects or driver confusion.

9.3.23 All lighting must comply with AS 1158 - Lighting for Roads and Public Spaces and AS 4282 - Control of the obtrusive effects of outdoor lighting.

9.4 - Strata subdivision and use approvals

ADVICE

Consent for the use of individual units

9.4.1 As well as obtaining development consent for the erection of the industrial building, the consent of Council is required for the specific use of each individual unit before the unit can be occupied. Consent may be sought as a combined development application along with the industrial building, or sought via a separate application.

Multi-unit industrial developments/strata subdivision

9.4.2 Each unit in the development must be numerically identified in the development application.

9.4.3 Each unit must have its own amenities.

9.4.4 All activities must be carried out within the building.

9.4.5 Each unit must have its own waste storage area.

9.4.6 Dimensioned signage envelopes for each unit are to be detailed on the architectural drawings. Siting and area of the signage envelopes must comply with the signage requirements of **Chapter 10**, Advertising and signage.

9.4.7 Where strata subdivision is proposed, consideration is to be given to whether landscaping, access areas and car parking spaces should be included in the Strata Plan of subdivision as common property. The subdivision certificate will not be issued until an Occupation Certificate has been issued for the development.

9.5 - Noise & vibration

ADVICE

9.5.1 Where it is considered that a development may have an adverse noise impact on nearby noise sensitive land uses or adjoining properties, an acoustic assessment undertaken by a qualified acoustic consultant must be submitted to Council with the development application. Refer to **Chapter 31** on Acoustic Protection.

9.5.2 Where it is considered that a development may have an adverse vibration impact on nearby residential areas or adjoining properties, an assessment of vibration by a qualified consultant must be undertaken and submitted to Council with the DA.

9.6 - Hazardous goods & materials

ADVICE

9.6.1 Where a development involves the storage and/or use of dangerous goods, full details of the quantities and types of goods and chemicals are to be submitted with the development application, together with the storage locations, mediums and the use intended for the goods and chemicals. The requirements of *State Environmental Planning Policy No. 33 - Hazardous and Offensive Development* must be complied with.

9.7 - Land in vicinity of airport

ADVICE

9.7.1 Development in the vicinity of the airport must comply with the requirements of **Chapter 32**, Airport and environs development.

9.8 - Recycling & waste management

ADVICE

9.8.1 All industrial developments must consider adopting more environmentally friendly processes into their daily operations such as the recycling of waste and/or products produced on site.

9.8.2 Developments which consume high volumes of water in their operation must incorporate recycling initiatives in the operation of the plant to reduce the demand on water.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 10 - ADVERTISING AND SIGNAGE

Objectives

1. To ensure that signage:
   a. is compatible with the desired amenity and visual character of a locality
   b. provides effective communication in suitable locations
   c. does not threaten the safety of pedestrians or traffic
   d. is of high quality design and finish which achieves a high level of design quality in terms of its relationship to the architectural design of the buildings and streetscape character of a particular locality
   e. is in proportion with and does not dominate the host building regarding its size and location.
2. To reduce the proliferation of advertising signs and structures through the rationalisation of advertising signs by the use of common directory pylon signs for multi-occupancy developments and by limiting the number of signs that may be erected on any one building or site.
3. To ensure that advertising signs do not affect the amenity of any surrounding residential locality from light spillage impacts associated with illuminated signs.
4. To ensure that the use of corporate logos, colour and illumination schemes are compatible with the architectural style of the host building and does not cause any significant adverse visual impact upon the surrounding streetscape character of the locality.
5. To ensure signage allows equal advertising rights.

NOTE: This Chapter of the DCP supplements the provisions of SEPP 64 and hence all proposed signage must be designed in accordance with the requirements of SEPP 64 in addition to the advice outlined in the Chapter.

NOTE: See definitions at end of Chapter and also SEPP 64 definitions for terms used.

10.1 - Signage that will not be considered

ADVICE

10.1.1 The following signs will not be considered for any development approval:

   a. roof or sky advertising signs.
   b. building wrap advertising signs.
   c. signs fixed to telegraph or light poles.
   d. advertising signs on structures attached to vehicles, including trailers, shipping containers or other items that promote the business and parked or displayed in public areas for promotional reasons.

e. variable message board signs (other than those used by an authorised authority for road traffic and road safety purposes).

f. signs fixed to trees, telegraph or electricity poles.

10.1.2 Signs that impact on the safety of the travelling public by:

a. obscuring or interfering with road traffic signs and signals or the view of oncoming vehicles or pedestrians

b. obscuring or interfering with the view of a road hazard or an obstruction

c. giving instructions to 'stop' or giving other directions, which could be confused with traffic signs

d. including variable messages or intense lighting which could impair drivers' vision or distracts drivers' attention

e. locating in places where drivers require greater concentration, such as at major intersections, pedestrian crossings or merging and diverging lanes.

The below **Figure 10.1** illustrates signage that is both appropriate and not appropriate.

Figure 10.1 - Appropriate and inappropriate building façade signage



10.2 - Exempt development

ADVICE

Exempt development in residential zones

10.2.1 Where a lawful home business or home occupation is operating, one business identification sign is permitted to be erected without development consent, either as:

a. a wall sign having an area not exceeding 1.5m²

b. a freestanding sign no higher than 1.5 metres with a maximum face area of 1.5m².

10.2.2 Where a business is located in a residential zone (e.g. neighbourhood shops or health consulting rooms), to be exempt development the following applies:

a. not more than two signs are erected

b. a wall sign having an area not exceeding 1.5m²

c. a freestanding sign no higher than 2.5 metres with a maximum face area of 1.5m².

10.2.3 To be exempt development, signs must be finished in colours that blend in with the streetscape and the building/land to which they are proposed.

10.3 - Land uses and advertising/signage

ADVICE

Exhibition homes in residential zones

10.3.1 A maximum of one business identification pylon sign will be permitted at the main entry per exhibition home with a height of not more than 2.5m with a maximum face area of 1.5m².

10.3.2 One wall sign having a maximum area of 1m² is permitted per exhibition home.

10.3.3 The location, type, colours and design of signs are not to adversely affect the amenity of the area and any adjoining/adjacent occupied dwellings.

10.3.4 All signs must be located wholly within the property boundary and setback a minimum of 1.0m from the front boundary.

10.3.5 Flag poles and illuminated signs are not permitted.

10.3.6 All signage and structures (including any slab and/or footings) must be removed and the site rectified when the exhibition home/village ceases to operate.

Commercial zones

10.3.7 The total sign area on a building must not exceed 8m² or 10% of the area of each elevation (including windows), whatever is the greater. Despite this, signs must always relate to the size/dimensions of the building.

10.3.8 Where the building is painted in corporate colours, signage is required to be substantially less than 10% of the wall area.

10.3.9 The maximum coverage of any window by a sign attached or painted on is calculated as 20% of each window. No sign or paint may cover the entire face of each singular window. Window signage will be included in the calculation of 10% of the elevation. However, for lifestyle graphic advertising structures greater than 20% of the window area, a merit based assessment will be required on a case by case basis.

10.3.10 Corporate colours are permitted on buildings with the consent of Council when they complement the architecture and do not overpower the building and will be considered as signage. Where corporate colours are used on buildings, signage which covers 10% of the elevation will not be accepted. Such signage is required to be substantially less than 10% of the elevation. Strong colours that do not relate to the streetscape (e.g. fluorescent colours) will not be accepted.

10.3.11 Free standing signs, with the exception of menu board signs are not permitted in outdoor eating areas. The structure must not protrude into the pedestrian path and must be in accordance with the outdoor dining provisions in this DCP.

10.3.12 Signs suspended under an awning must be erected in a horizontal position at right angles to the building façade. There must be a minimum clearance of 2.65m between the base of the sign and the footpath.

10.3.13 Multiple Occupancy Identification Signs

a. The total combined display area of all signage on the land must not exceed 20% of visible wall area.

b. Not more than one business identification sign is permitted at the entrance to each occupied unit.

c. All signage visible from a public place must be of a complementary and consistent size, shape and style throughout the development.

d. Where multiple unit developments are to be identified at the street frontage, this must be done through the use of one pole or pylon sign (including a directory board) not exceeding 7m above ground level.

e. Up to two signs are permitted per unit on the awning and the first floor, with only one sign above the awning.

Industrial zones

10.3.14 The maximum sign display area of any window is 20% of each window. This will be included in the calculation of the sign area being a maximum of 10% of the area of each elevation.

10.3.15 Signs suspended under an awning must be erected in a horizontal position at right angles to the building façade. There must be a minimum clearance of 2.65m between the base of the sign and the footpath.

10.3.16 Corporate colours are permitted on buildings with the consent of Council when they complement the architecture and do not overpower the building and will be considered as signage. Where corporate colours are used on buildings, signage which covers 10% of the elevation will not be accepted. Such signage is required to be substantially less than 10% of the elevation. Strong colours that do not relate to the streetscape (e.g. fluorescent colours) will not be accepted. Stripes or other repeated patterns that do not respect the architecture will not be accepted.

10.3.17 Multiple Occupancy Identification Signs:

a. the total sign area on a building must not exceed 10% of the area of each elevation (including windows). Despite this, signs must always relate to the size/dimensions of the building.

b. freestanding pole signs will not be permitted unless there are exceptional site circumstances.

c. one pole or pylon sign may be provided at the front of the complex and must not exceed seven (7) metres in height, must not exceed a display face area of 2.5m², be of uniform shape, size and presentation and incorporate the street number.

NOTE: Freestanding, multiple occupancy identification signs and any wall signs will be included in the calculation of the sign area being a maximum of 10% of the area of each elevation.

10.3.18 For freestanding buildings:

a. One (1) freestanding sign is permitted with a maximum height of seven (7) metres and a maximum display face area of 2.5m². Note: Small signs will be included in the calculation of the sign area being a maximum of 10% of the area of each elevation.

   Signs on each side of the building may not be appropriate and will be considered on merit.

b. Maximum of two signs are permitted which identify the business.

c. The total sign area on a building must not exceed 10% of the area of each elevation (including windows). Despite this, signs must always relate to the size/dimensions of the building. Where the building is painted in corporate colours, signage is required to be substantially less than 10% of the wall area.

d. The maximum coverage of any window by an attached sign or paint is 20% of the window. This will be included in the calculation of the sign area being a maximum of 10% of the area of each elevation.

On heritage items and/or conservation areas

10.3.19 Signs on heritage items or within heritage conservation areas must be discreet and must complement the heritage item and or area. The architectural characteristics of a building must always dominate.

10.3.20 Installation of the signage must not damage the fabric of the heritage item.

10.3.21 Signs must be placed in locations on the building or item which would traditionally have been used as sign areas. If the building or item has no such locations, signs will usually be considered inappropriate.

10.3.22 Materials and colours for new signage must be sympathetic to the character of the heritage item or conservation area, and be of a painted surface finish. Fluorescent and iridescent paints used for signs are not allowed.

10.3.23 Heritage lettering styles, fonts and other ornamentation must be appropriate to the architectural style of the item or area.

10.3.24 Illuminated signs will not be approved in any instance.

10.3.25 Moving signs are not allowed.

10.3.26 Signage must not break or protrude above an historic parapet or roof-line of a building.

10.3.27 Signs on buildings and/or land adjoining a heritage item or heritage conservation area must not adversely impact on the heritage item or heritage conservation area.

Rural and environmental management zones

10.3.28 A maximum of two business identification signs are permitted. Generally, this will involve one double-sided freestanding sign and one sign located on the building depending on the streetscape.

10.3.29 The signs must not detract from scenic vistas from public roads and places. The location, type, colour, design and size must not detract from the character of the area.

10.3.30 For freestanding signs, the separation between the ground and the lowest point of the sign must be 2m to reduce the bulk of the sign. Variations will be assessed on their merits.

10.3.31 The maximum sign display area of each sign must be 1.5m².

10.3.32 Unless otherwise agreed to in writing by Council, illuminated signs will only be permitted to operate during those times when an approved business is open for trading, e.g. petrol stations, motels, hotels and refreshment rooms. Illuminated signs will, in many areas, be incompatible with the landscape values of the countryside and therefore be prohibited.

Open space/recreation zones

10.3.33 The maximum sign display area of a sign must be 1.5m².

10.3.34 Sponsorship signage may be considered on case by case bases. The advertisement or advertising structure must not visually dominate the open space area and must not be visible to the public from outside the boundary of the open space area.

Child care centres

10.3.35 The type and size of business identification signs shall generally be limited according to the **Table 10.1** below.

Table 10.1 - Sign size

Type of sign	Size of sign
Flush wall sign	1m²
Pole / pylon sign	2m²

10.3.36 A maximum of two (2) signs noted above shall be permitted.

10.3.37 A free standing sign shall not exceed 2m above ground level.

Service station and vehicle sales or hire premises (i.e. motor showrooms, machinery hire, boats sales)

10.3.38 The maximum height of the pole or pylon sign must be 7 metres for sites located within a business or industrial zone.

10.3.39 The maximum height of the pole or pylon sign in a rural zone must not be higher than the finished level of the underside of the roof canopy.

10.3.40 Only one pole or pylon sign is permitted in any zone.

10.3.41 The display face area of the pole or pylon sign must include a display of the current fuel pricing for a service station operation.

10.3.42 Where there are multiple franchisees on the parcel of land containing a service station and/or vehicle sales or hire premises, the display face area must be rationalised and coordinated to ensure the objectives of this Chapter are achieved.

10.3.43 The face of the pole or pylon sign must not exceed 2.5m².

10.3.44 The location, type, colour, design and size must not detract from the amenity and character of the area to which it relates.

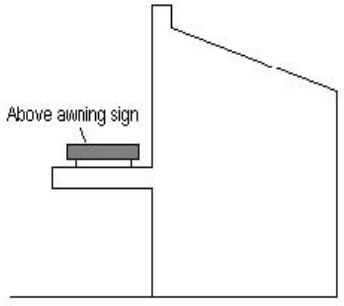
10.3.45 The location and design of signs (including their illumination) is not to adversely affect the amenity of adjacent development and the character of the locality and is not to obstruct any traffic lights and traffic signs.

10.4 - Definitions

In addition to the definitions below, other definitions referring to signage can be viewed in Shellharbour LEP 2013 and SEPP 64

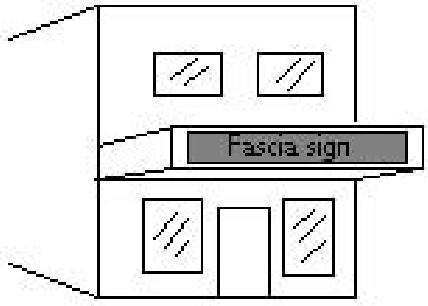
Above awning sign – A sign attached to the upper side of an awning (other than the fascia, return end or wall sign)

Figure 10.1 - Above awning sign



Awning fascia sign - An advertisement attached to the fascia or return of an awning.

Figure 10.2 - Awning fascia sign



Banner sign - A soft plastic/canvas/polycanvas material bearing letters and numbers and/or pictures, visible from a public place. Banners are usually fixed to a solid frame or posts. This includes Blade signs.

Corporate colours - Is the total or partial of the building walls in one or more colours that identify a business. This is a form of signage.

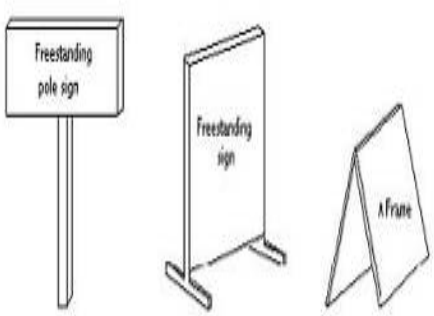
Drop awning sign - An advertisement displayed on a roll down blind, or the like secured to the awning of a building;

Flagpole sign – A tall staff or pole on which a flag or banner is raised for advertising purposes.

Floodlit sign - An advertisement illuminated by any external light source.

Freestanding sign - A portable, freestanding advertisement that is displayed on an A-frame and freestanding signs.

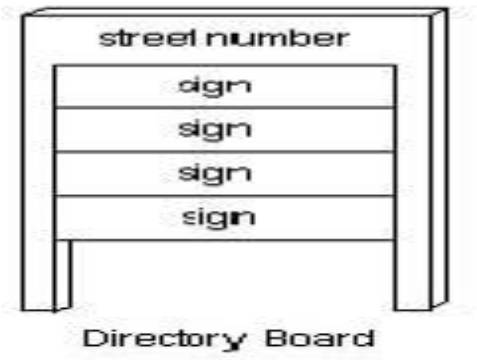
Figure 10.3 - freestanding signs



Lifestyle graphic sign – A sign or advertisement placed on a window or any other part of the building that displays graphics or symbols as a poster style which enhances an awareness of the building or business.

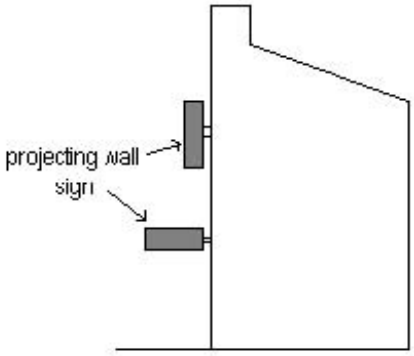
Multiple occupancy business identification sign - A sign containing a list of businesses or people occupying a shared tenancy or premises (i.e. a directory board)

Figure 10.4 - Multiple occupancy business identification sign (directory board sign)



Projecting wall sign - A sign attached to the wall of a building (other than the transom of a doorway or display window) and projecting more than 300mm from the wall.

Figure 10.5 - Projecting wall sign



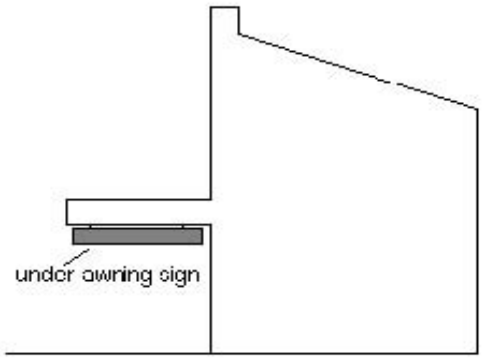
Sign display area - the area of one side of a sign which includes lettering, symbols and background around lettering and any embellishment which forms an integral part of the sign, but does not include the sign structure itself or flat colour areas of blank walls. Where more than one side of the sign display area is visible from any view, the entire area visible should be calculated. (Note: a 'Sign Structure' means a structure used or to be used to support a sign.)

Sign structure - A structure used or to be used to support a sign.

Top hamper sign means a sign attached to the transom of a doorway or display window of a building.

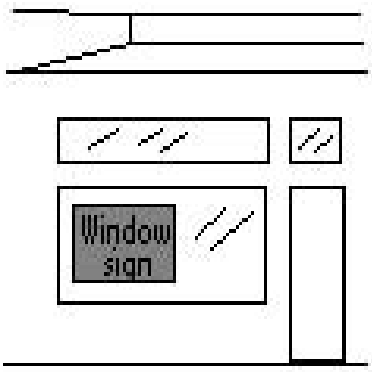
Under awning sign means an advertisement attached to the underside of an awning (other than the fascia, return end or wall sign).

Figure 10.6 - Under awning sign



Window sign means an advertisement attached to, or painted on, the shop window.

Figure 10.7 - Window sign



NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 11 - TELECOMMUNICATIONS AND RADIO COMMUNICATIONS

This Chapter and associated **Appendix 4** applies to the construction of telecommunications and radio communications infrastructure (including broadcasting infrastructure covered by the *Telecommunications Act 1997* and the *Radio Communications Act 1992.*

Telecommunications and radio communications facilities include telecommunications towers, masts and antennas, base stations, satellite-based facilities, radio communications transmitters and their supporting infrastructure and ancillary development.

New telecommunications and radio communications infrastructure require Council consent unless it is exempted by legislation such as the *Commonwealth Telecommunications (Low Impact) Determination 1997* or is classified as exempt or complying development in *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* and *State Environmental Planning Policy (Infrastructure) 2007*.

This Chapter and associated **Appendix 4** of the DCP relates to facilities that require development consent.

Low-impact facilities as described in the *Commonwealth Telecommunications (Low-impact Facilities) Determination 1997* are exempted from State and Territory planning and environmental laws and therefore do not require Council's development consent, except low impact facilities that are proposed within a Heritage Conservation Area.

This Chapter and associated **Appendix 4** does not apply to:

a. cabling

b. exempt development

c. temporary emergency services.

Objectives

1. To ensure telecommunications and radio-communications facilities are designed to minimise the public's exposure to electromagnetic radiation (EMR) and are restricted to locations where EMR levels are consistent with or below the nationally adopted exposure threshold criteria.
2. To ensure telecommunications and radio communications infrastructure adopt principles of good urban design.
3. To ensure telecommunications and radio-communications infrastructure is visually compatible with surrounding development in the locality and any heritage buildings or Heritage Conservation Areas.
4. To minimise any potential significant adverse amenity impacts upon the locality.

ADVICE

11.1 Refer to **Appendix 4** for information on relevant legislation/industry codes of practice, siting and checklist.

11.2 As part of a carrier's consultation obligations, Council requires a written submission demonstrating compliance with the relevant Sections of the *Australian Communications Industry Forum (ACIF) Code* and the objectives and guidelines contained in this Chapter/associated A**ppendix 4** of the DCP prior to their installation. A carrier is as defined in the *Telecommunications Act 1997*.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 12 - BANK STABILISATION: RIVERS, LAKES, ESTUARIES, OTHER WATER BODIES

Objective

1. To promote healthy aquatic and terrestrial ecology, accounting for flooding and coastal processes

ADVICE

12.1 The design of foreshore protection options proposed in or near an estuary or any other tidal waterway, must align with the basic guiding principles and requirements that are described in the Environmentally Friendly Seawalls - A Guide to Improving the Environmental Value of Seawalls and Seawall-lined Foreshores in Estuaries, 2009 (CMA and DECC 2009). This publication is available on the Office of Environment and Heritage website

12.2 The guiding principle requirements identified in Advice 12.1 above are applicable to any upgrades or repairs to existing bank stabilisation structures, new bank stabilisation work and any work that will disturb the foreshore. Any such work requires development consent. Refer to **Appendix 5** for Development Application information.

PART 3 - PROVISIONS APPLYING TO VARIOUS TYPES OF USES

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 13 - PARKING, TRAFFIC AND TRANSPORT

Objectives

1. On-site parking facilities, loading and unloading areas and manoeuvring areas for all vehicles likely to access the development must meet user requirements and allow the development to satisfactorily function within the site without adversely affecting surrounding land uses.
2. Vehicular movements to and from the site must not adversely impact on the safety or operations of the road system.
3. On-site parking facilities must be designed to be easily accessible and to minimise risk of crime to property and persons while ensuring the parking facilities integrate with the aesthetics and amenity of the locality.
4. Pedestrian and cyclist access to and within the site must be designed to be convenient, accessible and safe.

13.1 - Numerical parking requirements

ADVICE

Minimum parking requirement

13.1.1 **Table 13.1** below states the minimum car parking requirement that a development must provide. Compliance with the numerical standards of **Table 13.1** below does not mean an automatic approval as the planning objectives must be satisfied.

13.1.2 The proposed parking provision for mixed use developments must be supported by a parking and traffic study.

13.1.3 For activities / uses not covered in the table, the parking requirement will be assessed on the merits of the application and must be supported by a parking and traffic impact and a needs study.

Shortfalls in parking provisions

13.1.4 Car parking generated by a development must generally be accommodated within the development site. A shortfall in available parking on the site cannot be accommodated as on-street parking or as off-site parking on another location.

13.1.5 Notwithstanding Advice 13.1.4 above, parking may be accommodated on-street, in non-residential development scenarios where a parking study demonstrates:

a. full on-site parking is provided for the development for the majority of operating hours

b. sufficient availability of on-street parking without creating adverse impacts on surrounding uses

c. granting any on–site parking concession allows reasonable future on-street parking capacity for potential future development that may apply for use of this provision of the DCP.

13.1.6 Notwithstanding Advice 13.1.4, a commercial development that cannot accommodate the required number of car parking spaces within the bounds of its development site may be levied a contribution in accordance with Council's *Section 94 Contributions Plan* if the development is located within a specific area where this charge applies.

Calculation of parking requirements

13.1.7 Where the amount of parking required is not a whole number, the number of spaces required will be rounded up to the nearest whole number. For example, where the car parking requirement has been calculated as 9.3 spaces, the required number of spaces is 10 spaces.

13.1.8 Where a proposal includes a mix of different types of activities within the development, the total spaces required is determined by cumulative parking requirements of the development as a whole. The parking requirement for each activity of the development is added together and rounded upwards to the nearest whole number. A reduced number of on-site parking spaces may be considered where a traffic and parking study can demonstrate that the peak parking demands of individual components of the development do not coincide or where common usage reduces total demand.

13.1.9 Parking requirements for staff / employees refers to the maximum number of employees or staff, including manager/owner/directors, on the site at any one time during peak operating period, with provision for overlap where shifts are involved.

13.1.10 The parking requirements listed in the table relate to new development. An 'historical' deficiency may arise where an existing lawful development provides inadequate on-site parking based on current parking requirements for the development. The parking requirement calculated will be on the proposed additional floor area and / or change of use in accordance with the relevant provisions in the table.

13.1.11 Bicycle parking and storage/facilities may be required where not indicated in the table below and above the numerical requirement indicated in the table below. This will be assessed on merit.

Table 13.1 - Minimum parking requirement

Land use	Minimum Parking Requirement
Commercial Premises	
Office / Business Premises	1 space / 40m^2 gross floor area + 1 courier / service car parking space (minimum) A concession may be granted where it can be demonstrated that on street parking is not restricted.
Exhibition homes	3 spaces / exhibition home
Retail Premises	
Retail shop	1 space / 35m^2 gross floor area
Neighbourhood shop	1 space / 35m^2 gross floor area + 1 space / staff on the site at any one time during peak period; a minimum of 4 parking spaces must be provided
Supermarket / Regional centre	1 space / 20m^2 gross floor area + 1 bicycle and 1 motorcycle space per 25 car parking spaces after the first 25 car parking spaces

Land use	Minimum Parking Requirement
Video / DVD stores	A traffic and parking study will need to be prepared and submitted for shopping complexes / regional centres 6 spaces / 100m^2 gross floor area + 1 space / staff present on the site at any one time
Drive-in liquor stores	1 space / staff + service area for unloading / loading These spaces / area to be exclusive of customer service and queuing driveway. Driveway length from entry point to service area a minimum 30m. Driveway to have one-way circulation and minimum 2 lanes. Entry / exit driveways should be separate.
Bulky goods premises	1 space / staff + 1 space / 45m^2 gross floor area (minimum) ***Note:*** *Parking demand can vary for different types of bulky goods retail stores and additional parking may be required. Comparisons must be drawn with similar developments in similar locations.* + provision for cars with trailers, where applicable
Motor showroom & Wrecking yards	1 space / staff + 1 space / 200m^2 of site display area for customer parking, with a minimum of 2 spaces provided + suitable manoeuvring area on site for the loading / unloading of vehicles + additional parking for any workshop or servicing facility (refer *Automotive Workshop* below)
Garden centres / Plant nurseries	1 space / 45m^2 of display (indoor & outdoor) and retail area + 1 space / staff + provision for cars with trailers
Licensed club	15 spaces / 100m^2, minimum, of licensed internal floor + outdoor areas. Outdoor areas that are ancillary to the internal floor area, such as small smoking areas, are not included in the total licensed area. + 1 space / staff + whichever is the greater for any Auditorium / Function / Conference room of 1 space / 3 seats, or 1 space / 4m^2 patron area + provision for service / delivery vehicles + provision for taxi / bus / coach set down / pick up facilities, where applicable + overflow parking area, where applicable A traffic and parking impact and needs study must be prepared and submitted. Comparisons will need to be drawn with clubs having similar characteristics in similar locations.

Land use	Minimum Parking Requirement
Reception Function Centre	Whichever is the greater of 1 space / 4m^2 customer area (both indoor & outdoor) + 1 space / staff present on the site at any one time, or 1 space / 3 seats+ 1 space / staff present on the site at any one time
Food & Drink Premises	
Restaurant	1 space / 4m^2 customer area (both indoor & outdoor) + 2 space / 3 staff present on the site at any one time
Take-away food outlets	
Developments with no on-site seating for the consumption of food	1 space / 1m^2 customer waiting area + 2 space / 3 employees + 1 space for home delivery service vehicle, where applicable
Developments with on-site seating	Whichever is the greater of 1 space / 5 seats (internal seating & external seating) + 2 space / 3 employees, or 1 space / 2 seats (internal seating) + 2 space / 3 employee
Developments with on-site seating and drive through facilities	Whichever is the greater of 1 space / 3 seats (internal seating & external seating) + 2 space / 3 employee + queuing area of at least 8-12 car lengths within the drive through facility measured from the pickup point, including an area for at least 4 car spaces for cars queued from ordering point, or 1 space / 2 seats (internal seating) + 2 space / 3 employees + queuing area of at least 8-12 car lengths within the drive through facility measured from the pickup point, including an area for at least 4 car spaces for cars queued from ordering point. Exclusive area for queuing of cars for a drive through facility is required. The capacity of the drive through must not disrupt car parking and manoeuvring operations or extend onto the street.
Motor vehicle services	
Service station	1 space / employee present on the site at any one time + additional parking for any ancillary retail facility, with a minimum of 1 car parking space. Refer to *Retail* parking requirements. + additional parking for any restaurant facility. Refer to *Restaurant* parking requirements. + additional parking for vehicle workshop & service bay. Refer to *Automotive workshop* parking requirements below. + adequate provision for holding area & finishing area for any car wash & associated cleaning facilities.

Land use	Minimum Parking Requirement
Automotive workshops	
All automotive workshops including auto electrician's workshops, auto-mechanical and body repair workshops, auto spare parts, auto accessories & tyre fitting outlets	Whichever is the greater of 1 space / 30m^2 gross floor area + 1 space / employee + provision for service / delivery vehicles + area on site for the loading / unloading of goods and, where applicable, vehicles, or 4 spaces / service or work bay + 1 space / employee + provision for service / delivery vehicles + area on site for the loading / unloading of goods and where applicable, vehicles.
Tourist & Visitor Accommodation	
Bed & Breakfast	2 spaces for dwelling + 1 space / guest room; stack parking for guest parking is not permitted
Hotel	As per *Club (licensed)* parking requirements + 1 space / accommodation unit + 1 space for any resident manager / care taker
Motel	As per *Hotel* + parking for any public restaurant. Refer to *Restaurant* parking requirements
Guest houses / Holiday cabins	1 space / accommodation unit + 1 space / resident manager / caretaker + 1 space / employee
Serviced apartments	1 space / 1-2 bedroom apartment 1.5 spaces / 3 bedroom apartment + 1 space / resident manager / caretaker + 1 space / employee
Industries	
Warehouse Used solely for the storage of goods / materials pending their wholesale and distribution, but from which no retail sales are made.	1 space / 300m^2 gross floor area + 1 space / employee + 1 truck parking space where it is anticipated that trucks will be accommodated on site + additional parking for any ancillary showroom. Refer to *Bulky goods retail stores / showroom* parking requirements.
Self-storage facility	1 space / employee, with minimum of 2 spaces where on site office + 4 spaces / 100 units, or part thereof, with a minimum of 2 spaces in a convenient location + additional space for any resident caretaker / other + additional parking area where trailers / trucks are available for hire

Land use	Minimum Parking Requirement
Industry Provision should be made for all likely future users of the development. Inadequate on-site car parking and / or manoeuvring area may limit the type of future use of the building/s or site.	Whichever is the greater of 1 space / employee + additional parking for visitor / customer, where applicable + additional parking for any ancillary office and / or retail floor area. Refer to *Office* and / or *Retail* parking requirements, or 1 space / 70m^2 gross floor area + additional parking for visitor / customer, where applicable + additional parking for any ancillary office and / or retail floor area. Refer to *Office* and / or *Retail* parking requirements, or 3 spaces / industrial unit + additional parking for visitor / customer, where applicable + additional parking for any ancillary office and / or retail floor area. Refer to *Office* and / or *Retail* parking requirements.
Health Services Facilities **Professional consulting rooms**	1 space / consulting room + 1 space / other employee + 2 spaces / health care professional for clients / patients with a minimum of 3 visitor parking spaces + 1 space for any permanent resident of the dwelling Stack parking for full time practice staff may be considered, on merit.
Medical Centre	Whichever is the greater of 1 space / health care professional + 1 space / other employee + ambulance space + 3 visitor spaces / health care professional or, 4 spaces / 100m^2 gross floor area + 1 ambulance space
Hospital	+ 1 space / staff with designated parking space + 2 spaces / 3 other employees + 1 space / 3 beds for visitors + 1 ambulance space + 1 bicycle and 1 motorcycle space per 25 car parking spaces after the first 25 car parking spaces A traffic and parking impact and needs study must be prepared and submitted. Comparisons should be drawn with similar developments in similar locations.
Veterinary surgery	1 space / veterinarian + 1 space / other employee + 2 spaces / veterinarian for clients

Land use	Minimum Parking Requirement
Educational Establishments	
Child care centres/pre-schools	+ 1 space / employee + 1 space / 10 licensed children places, for parents and visitors. + additional parking where a residential dwelling comprises part of the overall development on the site; the dwelling component shall provide 2 car parking spaces, of which one is enclosed (i.e. garage) and located behind the building line One parking space must be a designated space for persons with a disability. Stack parking may be considered, on merit, for full-time employees only.
Schools	1 space / staff present on site at any one time during peak period + 1 space / 10 Year 12 students, where applicable + 1 space / 100 enrolled students for visitor parking, with a minimum of 4 visitor spaces + set-down / pick-up area, with length for at least 8 cars + area for buses as appropriate + area & facilities for bicycle storage + adequate provision for all vehicles likely to access the site
School Hall	+ Additional parking may be required where hall is also used by the public as a place of assembly. Parking in association with use of hall must be conveniently located for users of the hall. Refer to *Places of Assembly* below. A departure may be supported where it can be demonstrated that the times of peak demand for the school and school hall use do not coincide.
Tertiary Institutions/Adult Education	1 space / staff + 1 space / 3 students + area & facilities for bicycle storage + adequate provision for all vehicles likely to access the site + service delivery vehicle parking A parking impact and needs study may be required and comparisons made with similar developments in similar location.
Other type of educational establishment	Parking impact and needs study required and comparisons should be drawn with similar developments in similar location.
Other Land Uses **Funeral chapel / parlour / mortuary**	Whichever is the greater of 1 space / 3 seats + 1 space / staff + adequate provision on-site for all vehicles likely to be required to access the development or, 1 space / 10m^2 gross floor area + 1 space / staff

Land use	Minimum Parking Requirement
	+ adequate provision on-site for all vehicles likely to be required to access the development
Residential Development	Note: Please refer to **Chapter 4** for visitor parking requirements for dwellings on battleaxe lots.
Dwellings	2 spaces per dwelling, one of which must be behind the building line and must be at least 900mm from the side boundary. It is desirable that at least 1 space is enclosed (as a garage) behind the building line. Stack parking is permissible where the lot fronts the street. A stack parking space is counted as one parking space. Stack car parking must comply with the cross fall, longitudinal grades and dimension requirements for an open car space.
Dual Occupancy	2 spaces with a minimum of 1 enclosed space located behind the building line per dwelling. A carport is not considered an enclosed space. + 1 visitor car parking space for lots located within a bulb, or part thereof, of a cul-de-sac, the head of a T or Y shaped no-through road. Visitor parking must not be located forward of the building line. Stack parking is permissible only where both lots front the street. A stack parking space is counted as one parking space. Stack parking is not permissible on properties located in the bulb of a cul-de-sac, the heads of a Y or T shaped road or which utilise part or the full length of a battleaxe type driveway or access handle or on classified roads. Stack car parking must comply with the cross fall, longitudinal grades and dimension requirements of an open car space.
Multi-Dwelling Housing & Shop-Top Housing & Residential Flat Buildings & Mixed Use Development	<u>Resident parking</u> 1 space / one bedroom dwelling & 1.5 space / two + bedroom dwellings with a minimum of 1 enclosed space located behind the building line per dwelling. A carport is not considered an enclosed space. Stack parking will be considered on merit and only in multi-dwelling housing and residential flat buildings. Where a double garage is to accommodate the parking requirements for more than 1 dwelling, an internal dividing wall is required. <u>Visitor parking</u> 0.25 space / one bedroom dwelling 0.5 space / two + bedroom dwellings Visitor car parking must be provided as open car parking. Visitor car parking cannot be satisfied by stack parking Visitor car parking must not be located within 2 metres of the primary (front) or secondary boundary. Exception to visitor car parking - For multi-dwelling housing developments that do not have a shared common driveway, visitor parking is not required where:

Land use	Minimum Parking Requirement
	• Torrens title subdivision is proposed; and • each lot / dwelling has full street frontage: and • each dwelling has a double garage and separate driveway. The numerical requirements for both the resident and visitor car parking spaces are added together, then rounded up or down to provide the total number of car parking spaces required for the overall development. Visitor car parking spaces must not be replaced with resident car parking. For example, an eight dwelling (with 2+ bedrooms) development each with a double garage will require 12 resident and 4 visitor car parking spaces. The 16 resident car parking spaces being proposed do not negate the need for the 4 visitor car parking spaces. The above car parking rates are for the residential component of shop top housing only. The car parking requirement for the commercial component must also be satisfied.
Housing for Seniors & People with a Disability	Parking requirements for residents, employees and visitors are specified in *State Environmental Planning Policy (Housing for Seniors & People with a Disability) 2004*. Additional parking may be required for 'self-contained dwellings' component of a development as follows: • 2 visitors parking spaces / 7 self-contained dwellings for developments comprising of 9 or more self-contained dwellings • + 1 space / 2 person to be employed in connection with the development • + 1 space for any manager
Group Homes [6 or more bedrooms] where development consent is required. Refer *State Environmental Planning Policy (Affordable Rental Housing) 2009*, *State Environmental Planning Policy (Infrastructure) 2007* , *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*	1 space / 3 beds + 1 space / staff + 1 space suitable for a mini-bus, where applicable

Land use	Minimum Parking Requirement
Places of Assembly	
Places of worship – church, church hall	1 space / designated person / manager / staff + Whichever is the greater of
Place of public entertainment – theatre, stadium, public halls & meeting rooms	1 space / 4m^2 assembly space + 1 bicycle and 1 motorcycle space per 25 car parking spaces after the first 25 car parking spaces + provision for taxi / bus / coach set down / pick up facilities, where applicable + adequate provision for on-site loading, unloading and manoeuvring of all vehicles likely to be required to access the development, or 1 / 5 seats + 1 bicycle and 1 motorcycle space per 25 car parking spaces after the first 25 car parking spaces + provision for taxi / bus / coach set down / pick up facilities, where applicable + adequate provision for on-site loading, unloading and manoeuvring of all vehicles likely to be required to access the development. ***Note:*** *Alternatively, car parking requirements may be determined by Council following the completion and submission of a parking impact and needs study. Comparisons must be drawn with other similar developments in similar locations.*
Community / Civic facilities	1 space / employee + 1/40m^2 gross floor area + 1 bicycle and 1 motorcycle space per 25 car parking spaces after the first 25 car parking spaces + provision for taxi / bus / coach set down / pick up facilities, where applicable + adequate provision for on-site loading, unloading and manoeuvring of all vehicles likely to be required to access the development. ***Note:*** *Alternatively, car parking requirements may be determined by Council following the completion and submission of a parking impact and needs study by the applicant. Comparisons must be drawn with other similar developments in similar locations.*
Recreation facilities	***Note:*** *A recreational facility, particularly a regional and / or mixed-use facility, may require a parking impact and needs study to be submitted in support of the proposal. Comparisons must be made with similar developments in similar locations.*
Bowling club - where a licensed club does not exist	30 spaces for the first green + 15 spaces / additional green
Dance studio	1 space / employee + Whichever is the greater of 1 space / 15m^2 floor area

Land use	Minimum Parking Requirement
	+ additional parking may be required where classes are run 'back-to-back' to accommodate the 'over-lap' period between classes., or 1 space / 2 students (based on maximum number of students in a class) + additional parking may be required where classes are run 'back-to-back' to accommodate the 'over-lap' period between classes. Basic car parking requirement may be reduced if a set-down/pick up drive through area is provided. The set-down/pick up area must not disrupt car parking manoeuvring and must be of sufficient length so cars do not extend onto the street. The exclusion of reception, office and amenities from floor area calculations will be considered on merit by Council.
Gymnasium	1 space / employee + Whichever is the greater of 1 space / 20m^2 gross floor area + additional parking may be required where classes are run 'back-to-back' to accommodate the over-lap period between classes, or 1 space / 2 students (based on maximum possible number of students in a class) + additional parking may be required where classes are run 'back-to-back' to accommodate the over-lap period between classes. The exclusion of reception, office and amenities from floor area calculations will be considered on merit by Council
Indoor cricket /netball/soccer courts	1 space / employee + 15 spaces / court
Indoor recreational / amusement facility	1 space / employee + Whichever is the greater of 1 space / 30m^2 gross floor area (excluding reception/ office/store/food preparation/serving areas), or 1 space / 4 seats + 2 / party room (where applicable)
Squash courts / tennis courts / bowling alley / table tennis / snooker	1 space / employee + 3 spaces per court or alley or table
Swimming pools	1 space / employee + Whichever is the greater of 7 spaces per swimming lane, or 8 spaces per 60sq.m pool (water) area, or 1 space / 2 students (based on maximum possible number of students in a class) Where classes are proposed, details of class type, class size, class duration and frequency are required. Classes run 'back-to-back' may require additional parking to accommodate the over-lap period between classes.

Land use	Minimum Parking Requirement
Aquatic centre	Parking impact and needs study required where the Centre proposes a range of uses and / or proposes to hold sub-regional / regional events.

13.2 - Access & design

ADVICE

Car parking dimensions and grades

13.2.1 The minimum dimensions required for a single car space are: Length x width

a. 5.5m x 2.6m - open car space

b. 5.5m x 2.9m - car space abuts one wall

c. 5.5m x 3.1m - car space enclosed both sides by buildings or walls

d. 6.1m x 2.5m - parallel parking

The above dimensions are based on an access aisle width of 7.0m. For each 0.4m reduction in the aisle width, there must be a 0.1m increase in the car space width. The dimensions for car parking spaces for people with a disability must be in accordance with relevant Australian Standards.

13.2.2 The maximum allowable longitudinal grade and cross fall for an open car parking space is 5% and 6.25%respectively. A longitudinal grade and cross fall of 3% is recommended for a car space for people with a disability.

Car parking dimensions for a child care centre

13.2.3 The minimum width of an open car space provided for a child care centre must be a minimum of 3.1m. Car parking dimensions for designated staff parking in accordance with the above may be considered by Council.

Garage dimensions for residential development

13.2.4 The minimum dimensions required for a garage are: Length x width

a. 5.5m x 3.1m - single garage

b. 5.5m x 5.8m - double garage

The internal dimensions must exclude all intrusions into the design envelope around the parked car such as steps, internal door swing and other obstructions.

13.2.5 The minimum garage door jamb width to be provided is:

a. 2.4m where access is gained without a turning movement

b. 2.75m where access is gained via a turning movement

c. 4.8m for a double door without a turning movement

The above dimensions are based on an access aisle width of 7.0 metres. For each 0.4 metre reduction in the aisle width, there must be a 0.1 metre increase in the door jamb width.

Residential driveway width

13.2.6 Driveways located behind the front boundary must have a minimum width of 2.7 metres where it is to be used as a required car parking space or to provide access to a required car parking space.

Residential footpath crossing

13.2.7 Driveway crossings located between the road and the front boundary must have a width between 2.7 metres and 6.0 metres.

Residential dual crossings

13.2.8 Proposals for a dual crossing on a single allotment are not encouraged and must be clearly justified. Dual crossings must not exceed a combined total width of 6.0 metres and must provide a continuous kerb length in front of the allotment of at least 6.0 metres for on-street parking.

Footpath crossing location

13.2.9 For corner allotments, the driveway entrance must be a minimum of 6 metres from the kerb tangent point.

13.2.10 Crossings must be located so as not to interfere with existing public utility infrastructure. A driveway must be at least 500mm from drainage structures and 2m from a street tree. Where a street tree or drainage structure is to be relocated or modified, all costs will be borne by the developer.

Maximum driveway grades – residential development

13.2.11 Driveways must comply with **Figures 13.1, 13.2, 13.3.**

Maximum driveway grades – stack parking on driveways

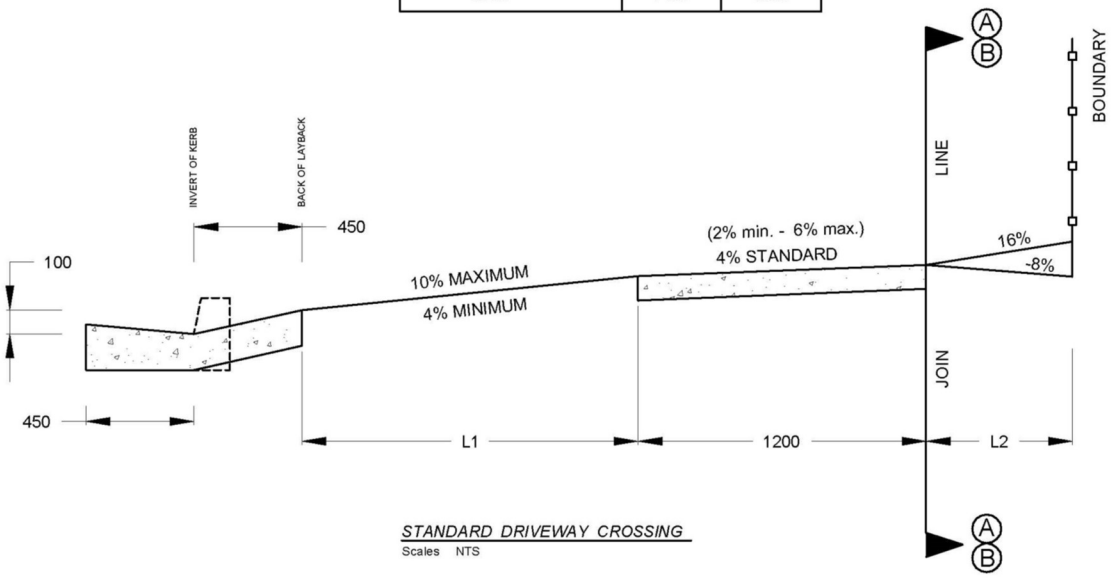
13.2.12 The driveway grades for stack parking are to not exceed the requirements of the driveway grades for residential development identified in **Figures 13.1, 13.2 and 13.3**

13.2.13 The maximum allowable longitudinal grade and cross fall for an open car parking space is 5% and 6.25%respectively. A longitudinal grade and cross fall of 3% is recommended for a car space for people with a disability.

13.2.14 The driveway profile must show the stack car parking space.

Figure 13.1 - Standard footpath cross section

FOOTPATH WIDTH	L1	L2
2740	790	300
3050	1100	300
3350	1400	300
3660	1400	610
4570	1400	1520
5490	1400	2440
6100	1400	3050



STANDARD DRIVEWAY CROSSING
Scales NTS

NOTES:

1. DRIVEWAY THICKNESS IS TO BE A MINIMUM 150mm SL72 STEEL MESH REINFORCED. INDUSTRIAL AND COMMERCIAL CROSSINGS MUST BE ENGINEER DESIGNED FOR EXPECTED TRAFFIC LOADS.
2. FOOTPATH SECTION TO VARY WHERE NECESSARY TO MATCH CONCRETE FOOTPATHS AND VERGE PROFILES. FOOTPATH EARTHWORKS ADJOINING CONCRETE MUST BE WELL COMPACTED
3. CONCRETE SURFACE TOLERANCE TO BE ±5mm OVER 3m SECTIONS
4. CONCRETE N25 IN ACCORDANCE WITH AS1379 & AS3600
5. REINFORCEMENT MESH TO AS1304, 50mm TOP AND EDGE COVER, LAP MESH 250mm
6. EXPANSION JOINTS TO BE 10mm THICK, FULL DEPTH CLOSED CELL CROSS LINKED POLYETHYLENE FOAM (150kg/m), INSTALLATION TO MANUFACTURERS INSTRUCTIONS. EXPANSION JOINTS TO BE DOWELED. SEE PAGE 1 FOR TYPICAL DOWEL DETAIL.
7. MINIMUM LAYBACK WIDTH IS TO BE DRIVEWAY WIDTH + 1200mm (2 x 600mm).
8. AFTER EXCAVATION FOR DRIVEWAY HAS BEEN CARRIED OUT ALL SOFT, YIELDING OR OTHER UNSUITABLE AREAS OF SUBGRADE MUST REPLACED WITH SOUND MATERIAL AND COMPACTED.
9. FOR RESIDENTIAL DRIVEWAYS A MINIMUM OF 50mm COMPACTED ROAD BASE LAYER IS TO BE PROVIDED. FOR INDUSTRIAL, COMMERCIAL AND DEVELOPMENTS WITH HIGH TRAFFIC LOADS, BASE AND DRIVEWAY IS TO BE ENGINEER DESIGNED.
10. A ROAD OPENING PERMIT UNDER SECTION 138 OF THE ROADS ACT MUST BE OBTAINED FROM COUNCIL. SEEK APPROVAL OF LOCATION AND LEVELS PRIOR TO EXCAVATION.
11. GRADE NOT TO EXCEED 1:8 WHERE DISABILITY ACCESS IS REQUIRED.
12. WHERE DRIVEWAY PROVIDES STACKED PARKING, A MAXIMUM GRADE & CROSSFALL OF 6.25% & 5% RESPECTIVELY ARE REQUIRED.
13. **WHERE CONSTRUCTING DRIVEWAY/LAYBACK INTO EXISTING KERB, THE FOLLOWING DETAILS ARE TO BE ADHERED TO**
    - **SAW CUT IS TO BE CARRIED OUT AT JOINT OF GUTTER AND ASPHALT & AT BOTH ENDS OF LAYBACK WIDTH ACROSS KERB**
    - **SAW CUT IS TO BE CARRIED OUT THROUGH DEPTH OF CONCRETE**
    - **EXISTING KERB (BARRIER & MOUNTABLE) IS TO BE REMOVED**
    - **REPLACEMENT KERB TO HAVE DOWELLED EXPANSION JOINT AT EITHER END**
    - **LAYBACK MUST BE CONSTRUCTED OF PLAIN CONCRETE**
    - **RESTORE ANY DAMAGED BITUMEN.**
14. THERE MUST BE NO LIP BETWEEN EDGE OF LAYBACK AND THE GUTTER
15. ALL STEEL REINFORCEMENT IS TO COMPLY WITH AS 1302, AS 1303 & AS 1304.
16. ALL DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE

Figure 13.2 - Maximum driveway grades

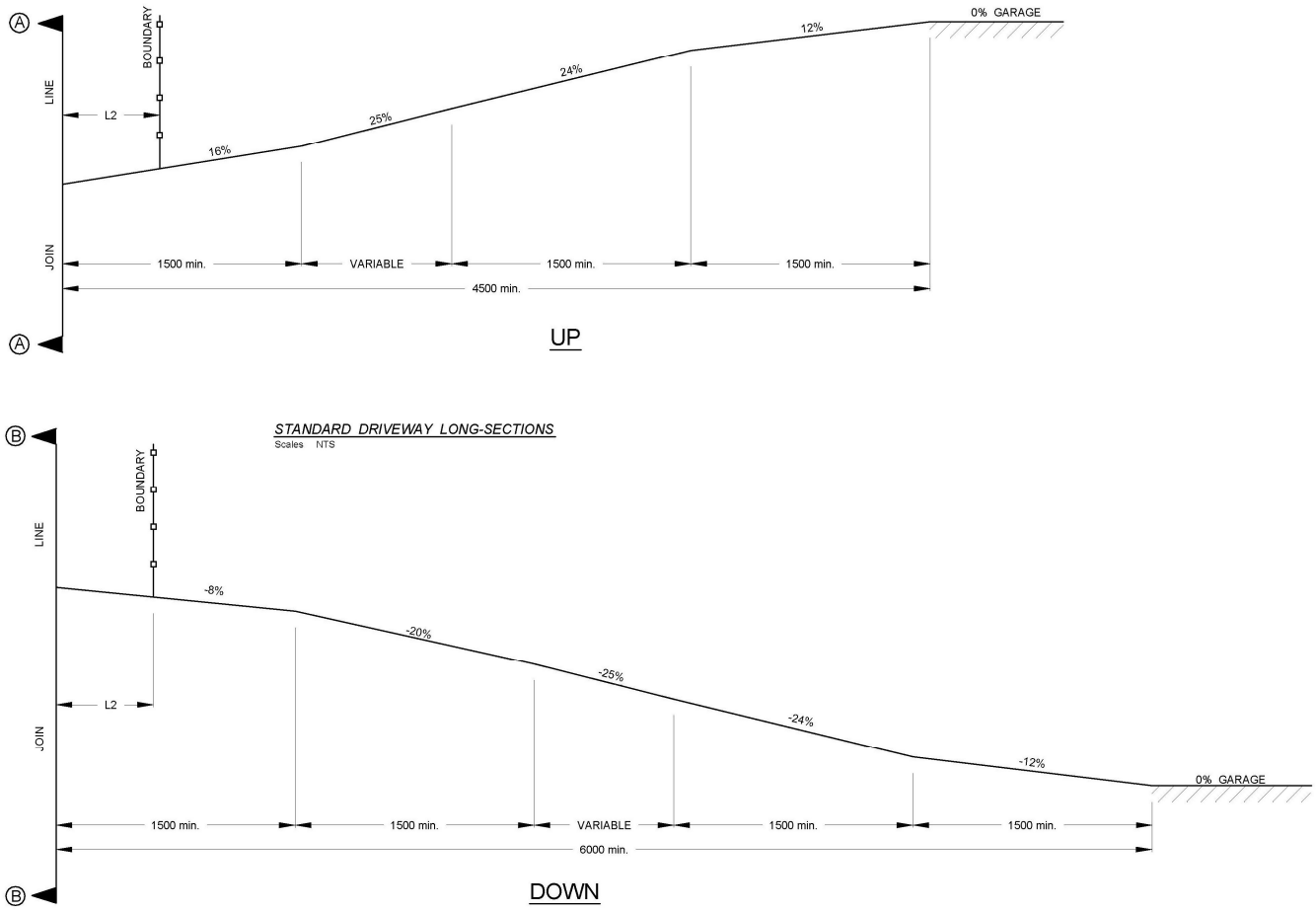
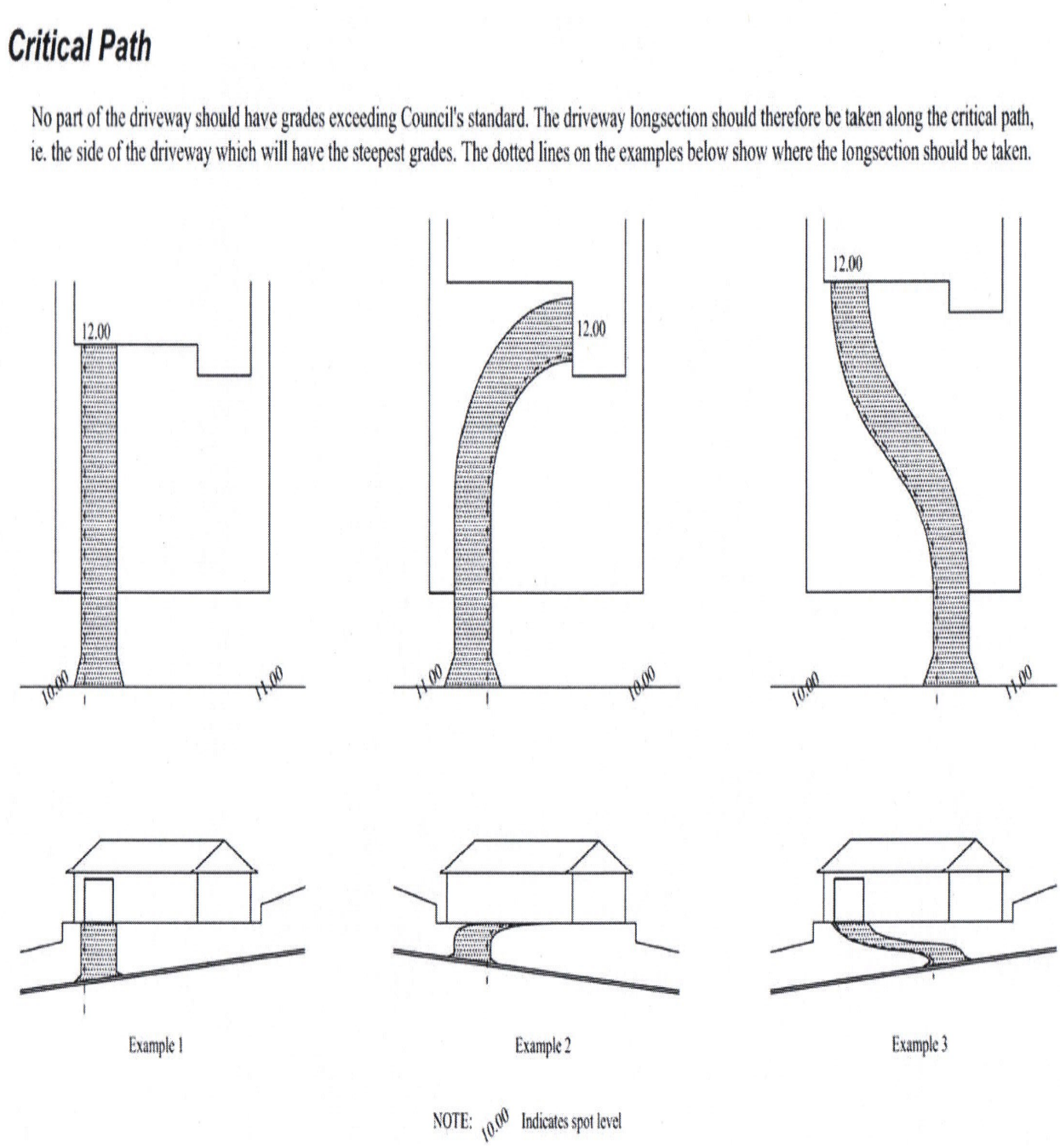


Figure 13.3 - Critical length



Maximum driveway grades – commercial & industrial development

13.2.15 Driveway grades for non-residential development must comply with AS2890.2 Parking Facilities - Off-Street Commercial Vehicle Facilities.

Residential visitor parking design & location requirements

13.2.16 Visitor parking must:

a. be provided as open car parking

b. be located behind the front building line not be satisfied by the use of stack parking

c. be clearly defined with paving materials and/or colours that are different to the driveway. Line marking to delineate the visitor car parking spaces is not acceptable.

d. consideration should be given to using semi-pervious paving materials for visitor parking areas to soften the appearance of these areas and to allow for on-site infiltration of water.

13.2.17 Where 4 or more dwellings are proposed, one of the required visitor car parking spaces must be equipped for washing of cars for the residents of the development. This visitor's car space must be suitably signed, be provided with a water tap, waste water drainage complying with Council's requirements and be paved with a surface that allows some infiltration of water. This site facility is not required for multi dwelling housing with Torrens title subdivision.

13.2.18 For developments with 20 dwellings or more, a designated car washing facility must be provided.

Mixed use development customer car parking

13.2.19 Customer parking for commercial components of mixed use must be designed to be easily accessed by customers. For instance it is not appropriate to have the customer parking mixed with parking likely to require security access, such as resident parking.

Basement car parking

13.2.20 Vehicular entrances must be integrated into the streetscape. Garage doors, shutters and grills must not be visually obtrusive and must blend in with the appearance of the buildings.

13.2.21 Any visitor car parking must be clearly identified to the visitor at street level and should be separate from the resident car parking.

13.2.22 Car parking for mixed use developments must clearly identify residential and commercial car parking spaces.

13.2.23 Where basement car parking extends beyond the building envelope, a minimum soil depth of 1.0 metres must be provided measured from the top of the slab, and will not be calculated as part of the deep soil zone.

13.2.24 For multi dwelling and mixed use development, basement parking areas must have natural ventilation and must be designed so that openings to the exterior of the building, at one point, for example, at driveways, be no higher than 600mm above the floor level of the parking area to facilitate adequate dispersion of carbon monoxide from the area. Where natural ventilation cannot be achieved, a combined system of natural and mechanical ventilation may be considered by Council. Any mechanical ventilation system must conform to AS1668.2, 2002 The Use of Ventilation and Air Conditioning in Buildings. Mechanical Ventilation for Acceptable Indoor Air Quality.

13.2.25 Basement vehicle parking and manoeuvring must comply with AS2890.1 Parking Facilities - Off-Street Car Parking and AS2890.2 with Parking Facilities - Off-Street Commercial Vehicle Facilities.

Ingress & egress requirements

13.2.26 The following development requires all vehicles to enter and exit the site in a forward direction from any part on the development site:

a. multi dwelling housing comprising 4 units or more which share a common internal access driveway/road
b. any development on a classified road
c. any development which will utilise part or the full length of a battleaxe type driveway or access handle
d. commercial developments
e. industrial developments
f. child care centre

13.2.27 To allow vehicles to enter and exit the site in a forward direction, driveway width must allow two cars to pass each other off the public road carriageway during entry and exit movements and the 85th percentile vehicle (equivalent of a medium-large sized family vehicle) must be able to manoeuvre onsite in an absolute maximum of three turns.

13.2.28 Vehicular access to a site must be designed and located having regard to the size of vehicles likely to access the site, traffic volume on the roads serving the proposed development and the traffic volume generated by the proposed development.

13.2.29 Where a site is bounded by a major and minor road, vehicular access to the site should be via the minor road wherever practical.

Pedestrian safety

13.2.30 Parking entry and exit ramps must be at grade for an entire car length before crossing the pedestrian pavement, so that drivers have a level space from which to stop and give way to pedestrians.

Car park design & layout

13.2.31 Vehicle parking must not have an adverse impact on the residents of adjoining sites in terms of noise, odour or run-off. Car parking areas:

a. must be screened from nearby sensitive receiving environments
b. stormwater from the car park must not flow directly into sensitive receiving environments.

13.2.32 The residential parking areas of mixed use developments must be easily accessible and adequately identified from the commercial component of mixed use developments.

13.2.33 The design of parking areas must minimise the potential for vehicular/pedestrian conflict. Pedestrian pathways between the parking areas and the building access should be provided.

13.2.34 Visitor/customer parking spaces must be located to be readily visible and accessible from the road frontage to encourage their use by their intended users and discourage on-street parking.

13.2.35 Access and parking areas for service vehicles should be separated from the access and parking for employees and customers and must be designed to accommodate the largest service vehicle likely to service the site.

13.2.36 The design of parking areas must minimise the visual impact of large areas of pavement on surrounding development and streetscape. Landscaping and materials of construction must improve the amenity of the parking area. Landscaping can 'soften' the appearance of large areas of paved surfaces and multiple rows of vehicles in addition to providing shade for users and assist with surface water run-off. Refer **Chapter 20** on Landscaping.

Access crossing for industrial & commercial developments

13.2.37 Driveways must have a minimum width of six metres across the full width of the footpath crossing and have a perpendicular alignment to the street. This width may be increased depending on the use of the building and the type of vehicles accessing the site.

13.2.38 Where the usage of larger vehicles is high, consideration may need to be given to separating the access points and manoeuvring areas so that general vehicles and pedestrians do not conflict with service vehicles.

13.2.39 Access driveways must be located to provide maximum sight distances.

Manoeuvring areas for industrial, commercial & multi dwelling housing developments

13.2.40 Access aisles adjacent to car parking areas must be 7 metres wide, however, Council may allow a reduction in aisle widths down to 5.8 metres subject to car parking spaces being increased in width by 0.1 metres for every 0.4 metre reduction in aisle width below 7 metres.

13.2.41 As a minimum standard for all new developments, waste collection trucks, delivery vehicles and large single unit trucks must be able to manoeuvre on-site so as to enter and exit the site in a forward direction. Swept paths must assume all parking spaces are filled.

13.2.42 Where an industrial development consists of two or more individual industrial units, a medium rigid vehicle 8.8m long must be able to access all individual units on the property.

Off-street loading & unloading facilities

13.2.43 Off-street loading and unloading facilities must be provided for commercial premises and industrial developments as required by Council. The size and number of loading bays provided will be determined by Council having regard to:

a. frequency of deliveries

b. size and bulk of the goods

c. size of the trucks

d. intended use of the premises

Full details of the anticipated volume and frequency of deliveries must be submitted with the development application.

Access & manoeuvring – service stations

13.2.44 Tankers must be able to deliver fuel to the site without reversing. If this is not possible, there must be adequate room on site to safely manoeuvre the tanker into its unloading position.

13.2.45 Parking is prohibited in areas where tanker access and egress is impeded.

13.2.46 Tankers must be positioned so they are not vulnerable to accidental damage from other vehicles while on site.

Footpath & footpath crossing construction

13.2.47 Driveway crossings must only be constructed by Council, or a Council approved contractor, at the developer's expense. Prior to works commencing, the applicant must apply and gain approval from Council for a Road Opening Permit under section 138 of the *Roads Act 1993*. An application fee will apply in accordance with Council's Fees and Charges.

13.2.48 Where altered, moved or damaged during construction, the footpath (including any concrete pathways, utility service pits and/or grates, kerb, gutter and any drainage pits) must be restored to their original condition prior to occupation of the development, at the developer's expense. In addition, redundant laybacks must be reinstated to the existing kerb profile prior to occupation of the development, at the developer's expense.

13.2.49 The footpath crossing must maintain a perpendicular alignment from the kerb to the property boundary.

13.2.50 Footpath crossings must have a slip resistant finish.

13.2.51 A concrete footpath along the road frontage of the development site may be required in accordance with Council's Footpath Masterplan.

13.2.52 The footpath area from the boundary to the kerb must be turfed to Council's satisfaction and at the developer's expense.

Access & parking area construction

13.2.53 For developments with a shared driveway, all car parking areas, manoeuvring areas and the access aisles must be paved, drained and line-marked. The pavement and drainage must be designed by a suitably qualified Civil Engineer and certified to be satisfactory for the expected traffic loadings from a development of this size and type.

Waste disposal and cul de sacs

13.2.54 Cul-de-sacs and stub roads must have an adequate radius for collection vehicles to undertake a U-Turn without the need to reverse.

13.3 - Shared Use Paths

ADVICE

Council's Shared Use Path Strategy

13.3.1 Shared use paths are constructed off road paths for the use of pedestrians and cyclists.

13.3.2 For information on Council's existing on road bicycle lanes and existing and planned shared use paths, refer to Council's website.

13.3.3 Developers may implement parts of the strategy where practical and appropriate, for example where developers are otherwise constructing a footpath adjoining a development.

13.4 - Safety in covered vehicle areas

Objective

1. To prevent people, especially infants and toddlers from coming into conflict with motor vehicles

ADVICE

13.4.1 Residential development must be designed to reflect vehicle and occupant safety principles. In this regard, where there is:

a. A garage, carport or covered vehicle housing area attached to a residence; and
b. A connecting door is proposed between a garage, carport or covered vehicle area attached to a residence;

these must have an effective barrier to prevent people (including specifically infants and toddlers) from coming into conflict with motor vehicles.

Note: *Covered Vehicle Area* is defined as any of the following or any combination thereof:
a. Covered vehicle parking area but open sided such as a carport or the like.
b. Garage being a roofed and enclosed space for parking vehicles. Enclosed refers to any or all sides.
c. Any concrete vehicle parking space with no cover at time of construction.

***Connecting door* is any door that adjoins a 'covered vehicle area' on or in the adjoining wall (parallel or at any angle thereto).**

13.4.2 This requirement is satisfied if a means (manual or electronic) is put in place to restrict a dwelling's occupants or visitors from potential harm from a moving motor vehicle. This may be done by any or a combination of the means contained in this section. This provision applies to all class 1, 2 and 10 buildings.

This requirement is fulfilled if one of the options below is satisfied.

a. Compliance by separation

Compliance with this section is achieved by having no connecting door in any part of any wall that has all or part of that wall adjoining vehicle housing/parking area.

b. Connecting Door- Barrier Installation

If a door is provided in any part of any wall that adjoins vehicle parking area such installation is to have a door assembly fitted with fittings and fixtures that must be a minimum of:

i. the leaf door shall swing inward of the dwelling; and
ii. no sliding or concertina door of any type shall be used; and
iii. the door leaf shall be fitted with a hydraulic self closing fixture that is at minimum a size 2 spring strength in accordance with AS4145.5.

Note: In the case of unusually high or heavy doors, windy or draughty conditions, or special installations a larger power size of door closer should be used.

iv. any door latch or passage set to be installed at a minimum of 1500mm above finished floor level; and

v. Any bolt or function that could, in normal usage, render a door leaf non-self latching must not be incorporated.

Note: A non self-latching bolt (e.g. a dead bolt) will prevent the door from closing if left protruding while the door is open. Any electrically operated locking devices or bolts must be self latching in the event of power failure and any activation switches installed 1500mm above finished floor level.

vi. If pairs of doors are used both leaves are to be self closing and self latching and include a selective sequence closing device

c. Combined Electric Vehicle Door and Passage Door

Where an attached covered vehicle housing/parking area has a roller or shutter door that is capable of mechanical or automated usage, the following provisions apply:

i. no interconnecting door to be provided from the vehicle housing/parking area to the internal of the dwelling in line with section 13.4.2a and the affected walls and openings as defined; or

ii. any interconnecting door to an enclosed covered vehicle area to comply with sections 13.4.2b, and

iii. any garage opening vehicle door being either manually operated, or, having an electronically mutually exclusive reed switch on the internal access door that prevents the garage vehicle door from being opened whilst the internal access door is in, or opening to, an open position.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 14 - SHELLHARBOUR CITY CENTRE VEHICULAR ACCESS, PARKING AND SERVICING

The Shellharbour City Centre Masterplan (the Masterplan) proposes a system of streets, lanes and centre block parking courts and other facilities. These should be implemented on a block or precinct basis, by the applicant where appropriate as part of the development process.

The location of streets, lanes and parking courts as proposed in the Masterplan is intended to provide adequate and appropriate access, circulation and parking for the City Centre.

14.1 - General

Objectives

1. To provide safe, adequate and appropriate vehicular circulation in the City Centre.
2. To provide safe, adequate and appropriate centre block parking courts.
3. To provide safe and accessible vehicular and pedestrian access to these parking courts.
4. To provide service access to all development sites from the internal lane system rather than from the street system.
5. To provide access to on-site parking (where required) from the lane system.
6. To provide for possible multi-level car parks should these be required as a result of future growth.
7. To ensure car parks are designed to reduce opportunities for crime to property and persons, facilitates ease of access and enhances safety for all users.

ADVICE

14.1.1 The road, lane and parking court system as set out in the Masterplan should be implemented progressively in association with incremental development.

14.1.2 The Block/Precinct Development Strategy should clearly set out proposed development sites, possible subdivision, proposed streets lanes and parking courts.

14.1.3 Individual site development proposals should demonstrate how they fulfil the objectives and principles as set out above and in the context of the Masterplan and this DCP Chapter.

14.1.4 Parking areas are not to be located between the building frontage and the street alignment.

14.1.5 On-site parking should be accessed directly from rear lanes where possible

14.1.6 Subdivision and development will require the creation of the street pattern shown in the Masterplan and B/PDS. Variation may be considered for precise locations of parking courts and lanes with adequate justification as part of a B/PDS or DA.

14.1.7 Parking requirements must be based on the rates and design standards as set out in this Chapter. Central block parking courts are designed to serve the shopper / visitor requirements of the centre. Additional parking for business proprietors, shop top commercial uses and residential users must be provided on-site.

14.1.8 For residential development, garages and parking areas must be accessed by a rear lane system as illustrated in the Masterplan.

14.1.9 Parking areas should be integrated with the form and arrangement of buildings.

14.1.10 Car parks should be located to permit maximum opportunities for surveillance by passers-by.

14.1.11 Parking areas are to be suitably landscaped.

14.1.12 Landscaping of car parks should avoid vegetation with top to bottom foliage or low shrubs.

14.1.13 Parking entry and exit ramps must be at grade for an entire car length before crossing the pedestrian pavement, so that drivers have a level space from which to stop and give way to pedestrians.

14.1.14 Vehicle should forward on an entry off road reserve.

14.1.15 Servicing should occur from lanes.

14.1.16 Waste storage areas should be screened from public view.

14.2 - Car parking

Car parking is divided into two categories, public and private parking.

Public parking is proposed central block to service retail, commercial and entertainment uses. At some stage in the future, if a very high level of build-out occurs, some structured parking may be required. Sites are provided for this should it be necessary. Parking requirements will be calculated on a multi-use basis where length of stay and multi-purpose trips are taken into account. Therefore, Council's parking code is not applied in a cumulative manner.

Private parking is generally encouraged to be on-site, particularly for mixed use developments. Therefore if a mixed use development is proposed it is suggested that residential and business parking be predominantly on-site (generally under building) and retail/entertainment parking be provided communally in central block public parking areas.

Servicing should be generally available from the system of lanes which back onto commercial property and provide access to central block parking areas.

Objectives

1. To provide Council's requirements for the provision and construction of car parking facilities for development works within the City Centre.
2. To provide guidelines which will result in car parking areas being constructed which are safe, efficient and attractive and which provide reasonable access, circulation and manoeuvrability condition and adequate size parking bays;
3. To ensure an adequate provision of off-street car parking for land uses within the City Centre;
4. To recognise dual use and/or complementary use of car parking when assessing the car parking requirements for a development;
5. To achieve the development of centralised car parking areas, rather than small scattered car parking areas;
6. To ensure that car parking areas are functional and operate efficiently;
7. To ensure that car parking areas are safe in terms of crime, pedestrian/motorist amenity and visually attractive;
8. To promote a safe and accessible pedestrian network from car parking areas to uses within the City Centre;
9. To encourage secondary retail or service trade uses to trade directly onto rear lanes/parking areas particularly where assisted by changes in level.

NOTE: It is not intended that this Chapter cover all likely situations. In this regard, where a situation is not covered, the designer may need to provide an innovative solution to meet required objectives. In addition, the designer may need to reference other guidelines and Australian Standards, in particular the Roads & Traffic Authority's "Guide to Traffic Generating Developments", AS 2890 Parts 1-5 Parking Facilities and AS 1428 Design for Access and Mobility.

ADVICE

Standards and minimum parking requirements

14.2.1 **Table 14.1** below specifies the car parking standards applicable to the City Centre.

Table 14.1 - Car Parking Standards within the City Centre

Land use	Car spaces per m2 of gross floor area
Retail	1/35
Commercial	1/40
Bulky goods/showrooms	1/50
Hotel	1/4.5 + 1 for each 3 employees
Motel	1 per unit + 1 for each 2 employees
Residential	1 per dwelling unit
Library	1/50
Community/civic facilities	1/40

Dual and complementary use of car parking spaces

14.2.2 Where centralised parking areas are provided to serve an entire Block's car parking requirements dual and complementary usage of the parking spaces will be recognised.

14.2.3 Dual use parking occurs when customers visit more than one facility on the site but need only one far parking space.

14.2.4 Complementary use of car parking spaces occurs when the different facilities on the site experience their peaking trading periods at different times of the day.

14.2.5 Dual and complementary usage is assessed for each development type as follows.

a. Retail developments are subject to dual and complementary use as customers often visit more than one shop at a time. Retail facilities typically experience their peak trading period on Saturday mornings and Thursday nights.

b. Commercial/Office Development: the car parking calculations for commercial/office developments are not subject to dual or complementary use as all the parking spaces are required by employees. The minimum standard in the **Table 14.1** above is therefore applied to all commercial developments.

c. Bulky Goods/Showrooms: bulky goods/showroom developments are subject to dual and complementary use. These facilities typically experience their peak trading period on Saturday mornings and afternoons.

d. Cinema: cinema developments are subject to dual and complementary usage

e. Hotel: hotel developments are subject to dual and complementary use. Hotels typically experience their peak trading period on Thursday and Saturday nights.

f. Motel: the parking requirements for motel developments will not be subject to dual or complementary usage. Parking for these facilities is traditionally reserved for guests

on an exclusive usage basis and the parking requirements specified in the **Table 14.1** above will therefore apply.

g. Residential Development: the parking requirements for residential developments will not be subject to dual or complementary usage. Parking for these facilities is traditionally reserved for tenants on an exclusive usage basis and the parking requirements specified in the **Table 14.1** above will therefore apply.

h. Library/Community Facilities: libraries and community facilities are subject to dual and complementary usage with the peak periods on weekdays and Saturday afternoons.

14.3 - Minimum car parking requirements within the City Centre

ADVICE

Proposals with existing mid-block parking (Precincts C and D)

14.3.1 Parking for residential will be provided on site.

14.3.2 All other parking:

a. Calculate total gross floor area (A) (as per LEP definition), for non-residential use.

b. On the basis that existing mid-block parking caters for 1:1 (non-residential) floor space ratios, deduct the total site area (B) from total non-residential gross floor area (A). This equals C. E.g. non res GFA = 2000, site area = 1500. C = 500

c. Using the numerical parking standards of the DCP calculate the number of parking spaces required for C. This equals D. For the purpose of this parking calculation, the ratio of uses will be the same as the total gross floor area ratio for non-residential uses. E.g. 1200 retail, 800 commercial, makes up the total 2000 non res. GFA. Therefore C is 300 retail and 200 commercial (to make up the 500). D = 8.6 for retail + 5 for commercial.

d. (D) will be provided on site or a parking contribution towards multi deck parking levied in lieu of onsite provision.

e. If (D) is a negative number, the subject land still has entitlement to this number of mid-block parking spaces post subject development.

f. Any applicable precinct or block development strategy will be taken into account in determining parking requirements.

Future B/PDS's involving mid-block parking

14.3.3 These will be subject to a parking needs assessment to establish the number of mid-block parking spaces. Mid-block parking will not provide for residential development. Residential parking will be provided on site.

Parking for proposals within the B/PDS will then be assessed as follows:

14.3.4 Parking for residential will be provided on site.

14.3.5 Calculate total (precinct or block) site area entitled to mid-block parking (A), e.g. 10,000 gfa.

14.3.6 Calculate subject land's proportion of (A). This is (B) as a percentage, e.g. subject land = 2,000. 2,000 divide 10,000 = 20%, B = 20%.

14.3.7 Apply (B) to the total number of mid-block parking spaces (C). E.g. 20% of for e.g.300 = 60. Therefore D = 60 (the number of mid-block parking spaces the proposal is entitled to).

14.3.8 If the non-residential parking requirement exceeds D, a parking contribution towards multi deck parking will be levied.

14.3.9 If the non-residential parking requirement is under D, the subject land still has entitlement to this number of mid-block parking spaces post subject development.

For future B/PDS' or any future DA not subject to a B/PDS

14.3.10 A professional transport land use forecast submission is required to be submitted by the B/PDS or DA proponent to inform numerical physical parking requirements. Minor change of use or minor additions will use the numerical standards.

Dedication of centralised parking areas

14.3.11 Where the developer provides and constructs centralised car parking areas for entertainment, commercial and retail use, the land area is to be dedicated in fee simple to Council. Parking areas which are not centralised blocks are to remain in private ownership.

Development that has previously used a leasable or net lettable area definition for parking assessment

14.3.12 Any B/PDS or approved substantial development of vacant land that has used a leasable or net lettable area definition in its parking assessment can rely on the following net lettable definition or LEP 2013's gross floor area definition, in parking assessment for subsequent development applications.

The net lettable definition is as follows:

The whole floor net lettable area is calculated by taking measurements from the internal finished surfaces of the permanent internal walls and the internal finished surfaces of dominant portions of the permanent outer building walls.

Included in the lettable area calculations are:

- window mullions;
- window frames;
- structural columns;
- engaged perimeter columns or piers;
- fire hose reels attached to walls; and
- additional facilities specially constructed for use by individual tenants that are not covered in exclusions listed below.

Excluded from the lettable area of each tenancy are:

- stairs;
- access ways;
- fire stairs;
- toilets;
- recessed doorways;
- cupboards;
- telecommunications cupboards;
- fire hose reel cupboards;
- lift shafts;
- escalators;
- smoke lobbies;

- plant/motor rooms, and;
- tea rooms and other service areas; (where all the provided as standard facilities in the building)
- lift lobbies where lifts face other lifts, blank walls or areas listed in section above;
- areas set aside for the provision of all services such as electrical, telephone, air conditioning ducts or risers to the floor, where such facilities are standard facilities;
- areas dedicated as public space or thoroughfares such as foyers, atria and access ways in lift and building services areas;
- areas and accessways set aside for use by service vehicles and for delivery of goods, where such areas are not for the exclusive use of occupiers of the floor or building;
- areas and accessways set aside for car parking; and
- areas where there is less than 1.5 metre height clearance above floor level – these spaces should be measured and recorded separately.

14.4 - Traffic movement

Shellharbour City Centre has access to the arterial road network via New Lake Entrance Road to the north. College Avenue forms the primary access route to the City Centre, with Minga Avenue, Benson Avenue, Cygnet Avenue and Yerrowah Road providing secondary access routes. Refer **Figure 14.1** below.

Objectives

1. Distribute traffic through the area.
2. Provide alternative routes to major attractions/parking areas.
3. Slow traffic passing through the city centre.
4. Improve connectivity between existing and proposed traffic generating development.
5. Encourage and facilitate the use of public transport and park and walk facilities.

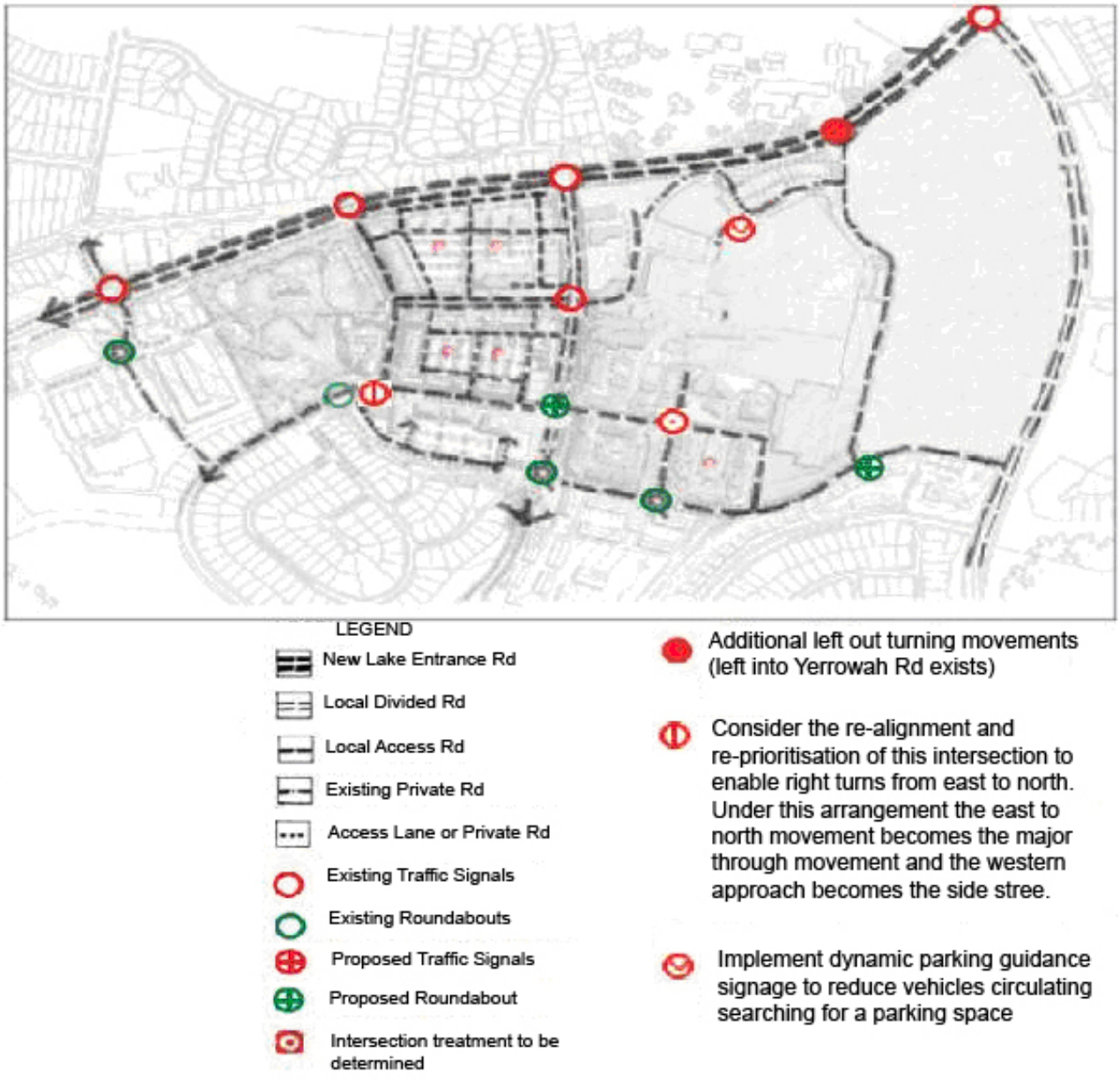
ADVICE

14.4.1 Upgrade service road along eastern boundary of Stockland Shellharbour and connect New Lake Entrance Road & Benson Avenue by road.

14.4.2 Extend Cygnet Avenue to connect with South Road upon development of the adjoining part of Precinct H and treat the consequent 4 way intersections being Cygnet/College and Cygnet/Lamerton.

14.4.3 Provide a left out (in addition to the existing left in) from Yerrowah Road onto New Lake Entrance Road, subject to detailed design and RMS concurrence.

Figure 14.1 - Traffic movement



14.5 - Pedestrian amenity

Note: refer **Figure 14.2** below.

Objectives

1. To encourage and facilitate pedestrian movement throughout the centre.
2. To ensure optimum safety and security in all pedestrian environments.
3. To connect with and facilitate the use of public transport and public space.

ADVICE

14.5.1 Provide wide footpaths (5m) with awnings/verandahs on both sides of the “main street” connecting the City Park and Stockland Shellharbour.

14.5.2 Retain short stay parking (and bus/taxi only zones) along “main street” to protect the footpath environment from moving vehicles.

14.5.3 Provide traffic calmed environment throughout the city centre.

14.5.4 Provide a City Square connecting into Stockland Shellharbour.

14.5.5 Provide rest areas and gathering places in central locations open to the sun and with views of Lake Illawarra and surrounding hills.

14.5.6 Provide pedestrian paths through parking courts providing access to parked vehicles and through-block links to other streets.

14.5.7 Provide sheltered pedestrian footpaths by inclusion of mandatory verandahs and awnings in areas of maximum pedestrian activity.

14.5.8 Extend street planting to soften the environment and provide shade and wind protection, but allow sunlight access to key pedestrian areas and not prevent passive surveillance.

14.5.9 Provide ample street lighting and mid-block lighting to enhance security.

14.5.10 Encourage mixed use residential development to assist with ‘eyes on the street’ passive security.

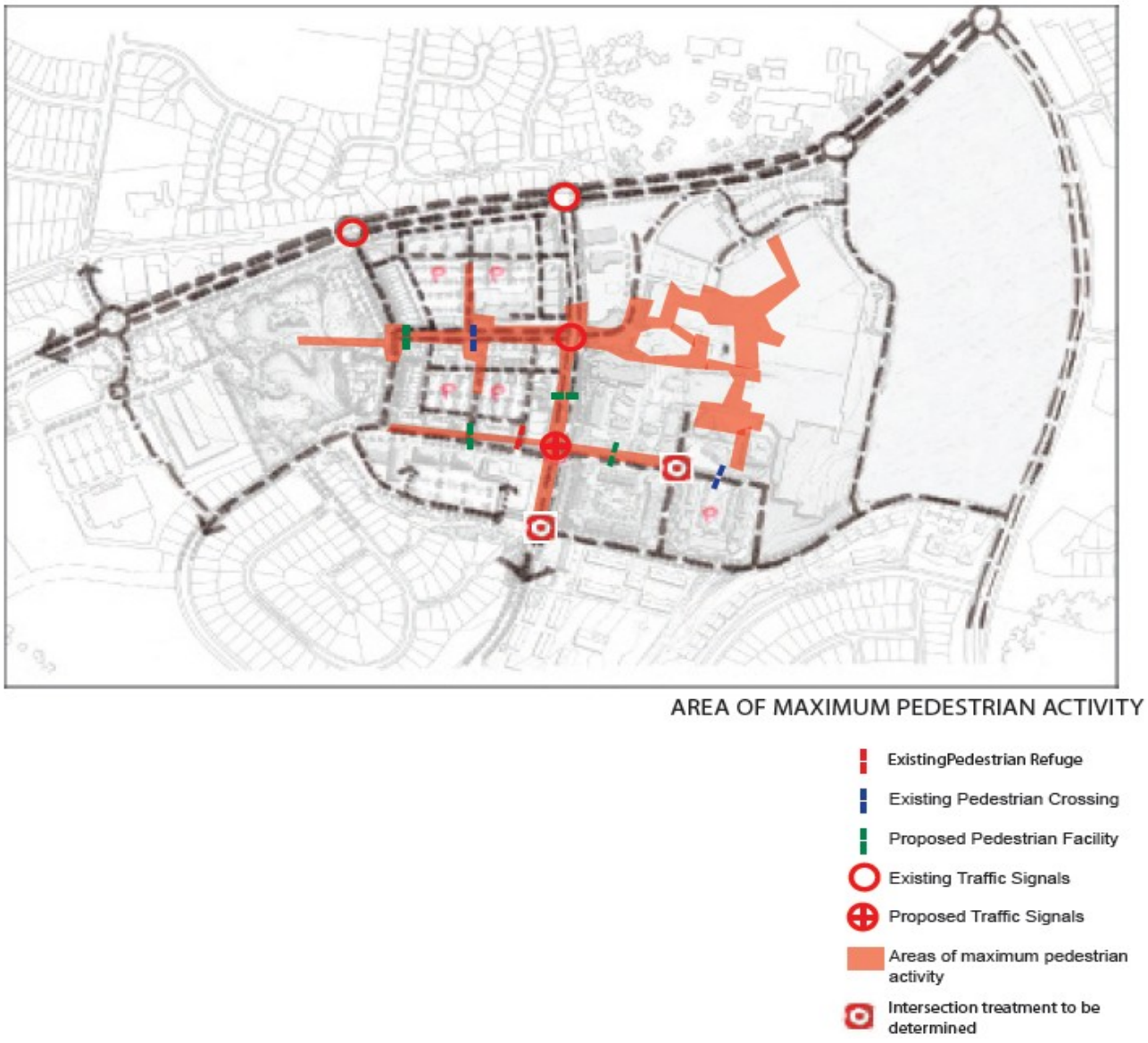
14.5.11 Allow pedestrian spaces and places to connect with and focus on bus stops and taxi ranks to encourage use of public transport.

14.5.12 Provide paved and marked pedestrian crossings in areas of high pedestrian activity.

14.5.13 Provide a 40kph speed limit in areas of maximum pedestrian activity.

14.5.14 Provide paved carriageways at high pedestrian activity intersections.

Figure 14.2 - Pedestrian amenity



14.6 - Bus/taxi provisions

Note: refer **Figure 14.3** below.

Objective

1. To encourage and facilitate public transport usage.

ADVICE

Use of public transport is encouraged/facilitated in a number of ways. These include:

14.6.1 providing a direct through-centre bus link which services the shopping centre, the "main street" and College Avenue, and which in the long term, could be connected with the bulky goods retail centre to the west via Cygnet Avenue

14.6.2 providing sheltered bus stops throughout the centre

14.6.3 providing bus stops adjacent to major attractions (Stockland Shellharbour, the City Square and future Civic Precinct)

14.6.4 ensuring two-way movement is possible between northern entry to shopping centre and Memorial Drive (City Square)

14.6.5 ensuring access to a layover area for all buses

14.6.6 improving and enhancing pedestrian crossings at bus stops

14.6.7 ensuring bus stops are well lit and safe

14.6.8 ensuring passenger information is clearly displayed at all bus stops

14.6.9 providing taxi ranks in highly visible location near to bus stops (for mode change)

14.6.10 reducing conflict where possible between buses and traffic entering car parks

14.6.11 removing passenger conflict with vehicular traffic

14.6.12 segregating bus repositioning route from Yerrowah Road access

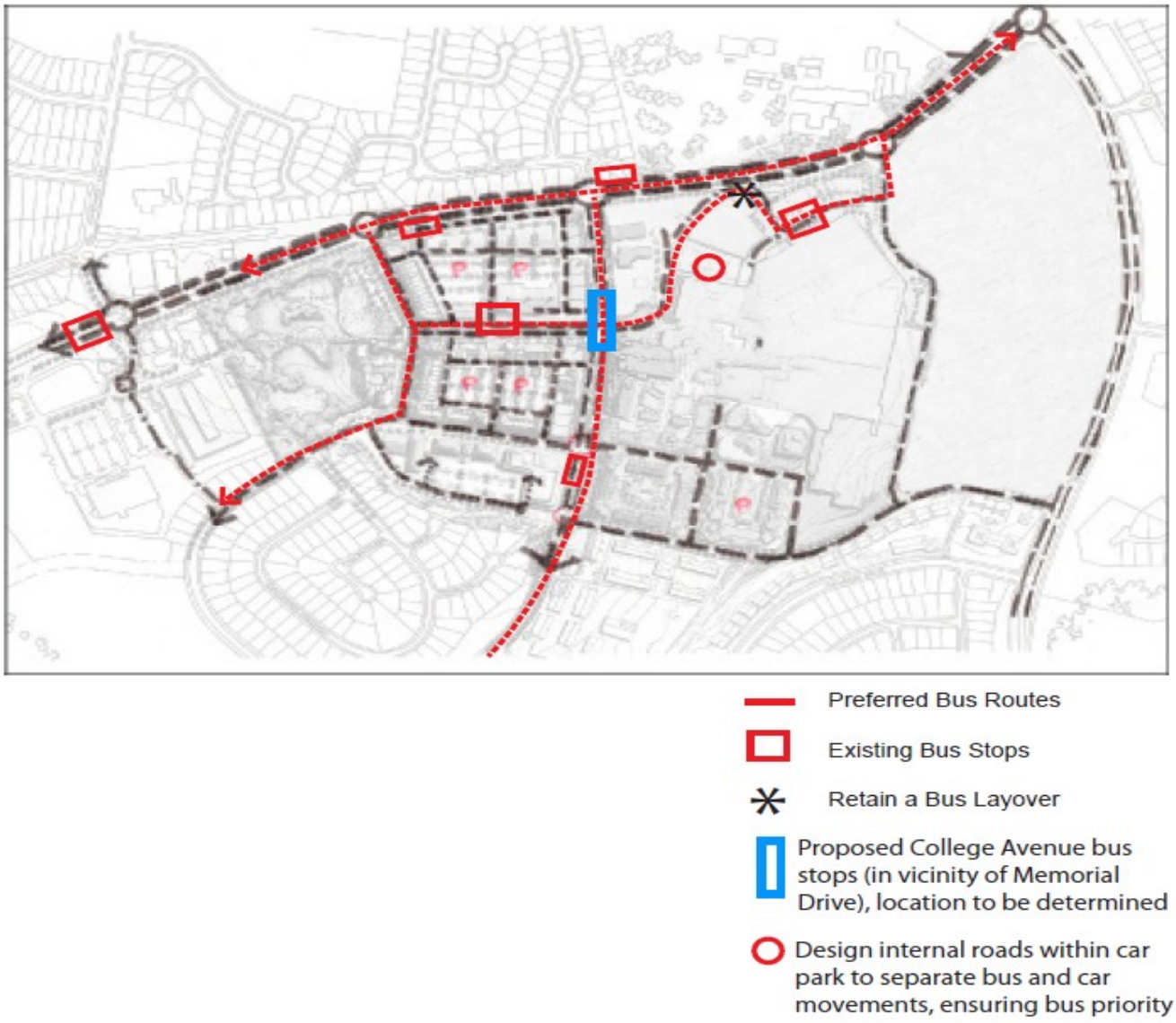
14.6.13 ensuring sufficient kerb length in bus stop zones/taxi ranks

14.6.14 providing bus/taxi priority at accesses to car parks and other major traffic attractors/generators

14.6.15 providing bus stops on College Avenue in vicinity of Memorial Drive/City Square.

In this context it is strongly recommended that buses should use the main street to enhance legibility of the system and to connect with the highest areas of pedestrian concentration.

Figure 14.3 - Bus/taxi provisions



NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 15 - WASTE MINIMISATION AND MANAGEMENT

Objectives

1. To maximise reuse and recycling of demolition and construction materials and materials from subdivision.
2. To ensure storage and collection of waste is designed and managed having appropriate regard to space, location, amenity and ongoing management of waste management facilities.
3. To ensure waste management systems are compatible with collection services.
4. Ensure developments provide adequate space for kerbside collection services.
5. To minimise potential adverse impacts relating to the management of waste on the amenity of adjoining properties and within the development.
6. To minimise the amount waste being deposited in landfill.
7. To provide information to applicants on how to prepare a Waste Management Plan.

15.1 - Development types and waste

ADVICE

All developments

15.1.1 A Waste Management Plan (WMP) is to be submitted with development applications for demolition, construction and operational works.

A template for a WMP can be found on Council's website.

The WMP includes the method of reuse, recycling, disposal of waste, and nominates the waste management service provider.

A WMP must provide measures to minimise and manage waste generated during:

a. demolition
b. construction
c. ongoing use of the site/premises.

the WMP nominates:

a. volume and type of waste and recyclables to be generated
b. storage and treatment of waste and recyclables on site
c. disposal of residual waste and recyclables
d. operational procedures for ongoing waste management once the development is complete.
e. placement and dimensions of a waste/recycling storage area / room submitted via a site plan

15.1.2 The WMP should demonstrate consistency with the NSW's Governments *Better Practice Guide for Waster Management in Multi-Unit Dwellings*.

Development that relies on on – street bin collection

15.1.3 A minimum of 1.5m of the subject land's legal property frontage must be provided at the kerb for the storage of every 2 bins generated by the development for servicing.

NOTE: Council encourages kerbside collection for domestic waste. Onsite collection is not the preferred option.
Where waste is proposed to be collected onsite, site design and the like must be considered early in the development design process. In these circumstances the proponent must consult with Council's Waste staff as there are additional considerations such as but not limited to; safe and appropriate access for collection vehicles, the requirement for indemnity against claims for loss of damage to driving surfaces, annual reviews of indemnities and any other demands arising from onsite collection service. In all cases, a hazards assessment will need to be conducted prior to Council agreeing to undertake the service.

Single dwellings and dual occupancy

15.1.4 In addition to submitting a WMP, development applications must show/demonstrate:

a. That there is sufficient space within the kitchen, or other appropriate location, for the interim storage of waste and recyclables.

b. The location of an onsite waste/recycling storage area for each dwelling that is of sufficient size to accommodate Council's waste, recycling and garden waste bins. Indicative bin sizes are shown in **Table 15.1** below.

Table 15.1 - Indicative bin sizes

Bin type	Height	Depth	Width
140 Litre Bin	1065mm	540mm	500mm
240 Litre Bin	1080mm	735mm	580mm

15.1.5 Waste containers should be stored in a suitable location so as to avoid vandalism, nuisance and adverse visual and odour impacts.

Multi dwelling housing

15.1.6 In addition to submitting a WMP, development applications must show/demonstrate:

a. Same requirements for single dwellings and dual occupancies.

b. That public places and common areas have been avoided when choosing a location for waste storage containers.

c. That individual waste/recycling storage areas are located and designed in a manner which reduces adverse impacts upon neighbouring properties and upon the appearance of the development.

d. Waste/recycling storage area/s or room/s are of a size and layout that comfortably accommodate separate garbage, recycling and garden waste containers at the rate of Council provision.

e. The location of any waste compaction equipment.

f. An identified location for individual compost containers or communal compost containers.

g. That there is unobstructed path of travel for moving bins from the storage area to the identified collection point.

h. That there is an unobstructed and Continuous Accessible Path of Travel (as per *Australian Standard 1428 - 2001 Design for Access and Mobility)* from the waste/recycling storage area/s or room/s to:

   i. the entry to any Adaptable Housing (as per *Australian Standard 4299 - 1995 Adaptable Housing*),

   ii. the principal entrance to each dwelling,

   iii. the point at which bins are collected/emptied.

i. That where bins cannot be collected from a kerbside location, the development has been designed to allow for private onsite access by garbage collection vehicles. In these instances, the site must be configured so as to allow collection vehicles to enter and exit the site in a forward direction and so that collection vehicles do not impede general access to, from or within the site. Access driveways to be used by collection vehicles must be of sufficient strength to support such vehicles.

j. Where waste collection will occur onsite, access driveways and internal roads have been designed in accordance with Australian Standard 2890.2 – 2002 Parking Facilities – Off-Street Commercial Vehicle Facilities.

k. That the waste management system, including relevant indemnities, are binding on all registered owners of land and/or owners corporation.

l. For housing development with communal waste/recycling storage facilities, plans/information must also show/demonstrate:

   i. That waste/recycling storage areas have been integrated into the design of the overall development. Materials and finishes that are visible from outside should be similar in style and quality to the external materials used in the rest of the development.

   ii. That residents have access to a cold water supply for the cleaning of bins and the waste storage areas. Storage areas should be designed to be weather proof and easy to clean, with wastewater discharged to sewer, subject to approval from Sydney Water.

   iii. Arrangements are to be in place in regards to the management, maintenance and cleaning of all waste/recycling management facilities. Agents of the owners' corporation must take responsibility for the management of waste and recyclable materials generated upon the site.

   iv. How separate containers for the separation of recyclable materials from general waste have been provided in the waste/recycling storage room/area. Standard and consistent signage on how to use the waste management facilities should be clearly displayed.

   v. How containers used for the storage of recyclable materials within waste/recycling storage rooms will be kept separate from (but close to) general waste containers so that the potential for contamination of recyclable materials is minimised.

vi. Signage that clearly describes the types of material that can be deposited into the recycling bins and general garbage bins.

Commercial developments and change of use

15.1.7 In addition to submitting a WMP, development applications must show/demonstrate:

a. That the location of a designated waste/recycling storage area or room/s have been sized to meet the waste and recycling needs of all future tenants and designed so that the size and layout of the waste/recycling storage room/area is capable of accommodating reasonable future changes in use of the development.

b. That the waste/recycling storage room/area is able to accommodate bins that are of sufficient volume to contain the quantity of waste generated.

c. That separate containers for the separation of recyclable materials and general waste have been provided in the waste/recycling storage room/area. Standard and consistent signage on how to use the waste management facilities should be clearly displayed.

d. That there is safe and convenient access from each tenancy to the waste/recycling storage room(s) or area(s). There must be step-free access between the point at which bins are collected/emptied and the waste/recycling storage room(s) or area(s).

e. That arrangements are in place so that the waste/recycling storage area is not accessible to the general public.

f. That depending upon the size and type of the development, whether it is necessary to include a separate waste/recycling storage room/area for each tenancy.

g. The identified collection point for the collection and emptying of waste, recycling and garden waste bins.

h. The path of travel including gradients for moving bins from the storage area to the identified collection point (if collection is to occur away from the storage area).

i. That where waste collection will occur onsite, access driveways and internal roads must be designed in accordance with Australian Standard 2890.2– 2002 Parking Facilities – Off-Street Commercial Vehicle Facilities.

j. That servicing arrangements for the emptying of bins is compatible with the operation of any other loading/unloading facilities onsite.

k. The location of temporary waste and recycling storage areas within each tenancy. These should be of sufficient size to store a minimum of a single day's waste.

l. That a waste/recycling cupboard has been provided for each and every kitchen area in a development. Each waste/recycling cupboard must be of sufficient size to hold a minimum of a single day's waste and to hold separate containers for general waste and recyclable materials.

m. Where waste containers are located in public places, they should be clearly visible and located in well-lit areas.

Mixed use developments - residential & non-residential

15.1.8 In addition to submitting a WMP, development applications must show/demonstrate:

a. Same requirements as Multi dwelling housing, for the residential component of mixed-use development.

b. Same requirements as Commercial developments and change of use for the non-residential component of mixed-use development.

c. Mixed Use development must incorporate separate waste/recycling storage rooms/areas for the residential and non-residential components. Commercial tenants must be prevented (via signage and other means) from using the residential waste/recycling bins and vice versa.

d. The residential waste management system and the non-residential waste management system must be designed so that they can efficiently operate without conflict. Conflict may potentially occur between residential and non-residential storage, collection and removal systems, and between these systems and the surrounding land uses. For example, collection vehicles disrupting peak residential and commercial traffic flows or causing noise issues when residents are sleeping.

Industrial developments

15.1.9 In addition to submitting a WMP, development applications must show/demonstrate:

a. That the location layout and size of the designated general waste/recycling storage area(s) or room(s) is sized to meet the waste and recycling needs of all future tenants and designed with designated storage areas for industrial waste streams (designed in accordance with specific waste laws/protocols).

b. That there is a safe and convenient access from each tenancy and/or larger waste producing area of the development to the waste/recycling storage room/s or area/s. There must be step-free access between the point at which bins are collected/emptied and the waste/recycling storage room/s or area/s.

c. That where hazardous wastes (such as contaminated or toxic material or products) are produced, stored or disposed, they have been given particular attention. The appropriate laws and protocols must be observed.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 16 - ACCESS FOR PEOPLE WITH A DISABILITY

(According to the findings from the 2015 Survey of Disability, Ageing and Carers published by the Australian Bureau of Statistics (ABS) 4.3 million Australians (18.3%) have disability).

As our population ages the number of people with disability will increase. Indications are, for example, that there will be a 70% increase in the number of older people with significant disability over the next 30 years.

Discrimination laws require all public buildings and places of work to be accessible to protect all Australians, including those who have disability now and those who will acquire disability in the future.

The requirement for building accessibility includes offices, restaurants, shopping centres, schools, sports facilities, government buildings, medical and other health therapy practices, local shops, factories, hotels and bars.

The laws also require public areas such as reserves, public malls, public plazas/squares, footpaths and parks to be as accessible as possible.

For more than twenty years building law throughout Australia has required increasing levels of access to buildings through provisions in the Building Code of Australia (BCA). In May 2011 a new set of access requirements was adopted that aims to progressively improve access in all new buildings and existing buildings undergoing renovation or modification.

The access requirements are the Disability (Access to Premises - Buildings) Standards 2010 (the Premises Standards) and compliance with these ensure those responsible for buildings are meeting their responsibilities under discrimination law.

16.1 - The Premises Standards

Objectives

The guiding principles of the Premises Standards are the objects of the *Disability Discrimination Act 1992* (DDA) which are:

1. to eliminate, as far as possible, discrimination against persons on the basis of their disabilities in various areas, and in particular access to premises, work, accommodation and the provision of facilities, services and land.
2. to ensure, as far as practicable, that persons with disabilities have the same rights to equality before the law as the rest of the community
3. to promote recognition and acceptance within the community of the principle that persons with disabilities have the same fundamental rights as the rest of the community.

NOTE: the purpose of the Premises Standards is:

- **to ensure that dignified, equitable, cost-effective and reasonably achievable access to buildings, and facilities and services within buildings, is provided for people with disability**
- **to give certainty to building certifiers, developers and managers that if the Standards are complied with they cannot be subject to a successful complaint under the DDA in relation to those matters covered by the Premises Standards.**

NOTE: It is unlawful to contravene the Premises Standards.

ADVICE

16.1.1 The associated **Appendix 6** explains how the new law works and why people and organisations seeking development consent should consider access issues at the earliest stages of their project.

16.2 – Access ramps

Objective

1. To avoid access ramps being blocked by parked vehicles

ADVICE

16.2.1 Where access ramps are proposed to be located in vicinity of parking areas, the layout of the parking area and ramp must avoid enabling space for vehicle parking, formal or informal, which impedes access to access ramps. Additionally signage and or line marking must be provided to avoid vehicles impeding access to access ramps. Any signage should avoid being freestanding.

16.3 - Parking for mobility impaired

Objective

1. To provide convenient parking in business areas for mobility impaired persons who do not require a wider parking bay.

ADVICE

16.3.1 In the design of major new or the redesign of existing parking areas in business areas, the proponent must provide and clearly and consistently identify regular sized spaces for persons with mobility impairment who do not require a wider parking bay, but who may need to park closer to a facility due to mobility issues. This is in addition to accessible parking spaces with wider bays under AS1428.

16.4 - Traffic and pedestrian facilities

Objective

1. To ensure in the design of traffic facilities and associated footpaths, pedestrians, especially mobility impaired pedestrians have easy and clear access to and from destinations, involving trips across roads, open spaces and other public domain.

ADVICE

16.4.1 In the design of roundabouts, traffic islands, ramps to footpaths and other relevant traffic/pedestrian facilities, the design must be coordinated to account for accessible desire lines/paths of travel to and from existing or new footways and pedestrian generating development, such as retail, community facilities and recreation facilities.

16.5 - Development causing need for access facilities outside of the development site

Objective

1. To provide access facilities for certain development outside of the subject land

ADVICE

16.5.1 Where a development causes the need for improved access facilities outside of the subject land, relevant conditions of any approval will require the developer to provide these.

> **Note**: relevant conditions will generally apply to matters such as footpath paving and or ramping to the carriageway where it is clear the development has caused that need.

16.6 - Mobility Scooters

Objective

1. To ensure land uses intended to be available to the wider public are conducive to the storage and movement of mobility scooters

ADVICE

16.6.1 Relevant developments, including changes of use should provide charging points with associated storage space, accessible to mobility scooters without an extension cord. The types of development this applies to are in the following list:

- Seniors housing
- Tourist and visitor accommodation
- Food and drink premises
- Amusement centres
- Entertainment facilities
- Function centres
- Registered clubs
- Sex services premises
- Educational establishments
- Health services facilities
- Business premises
- Community facilities
- Correctional centres
- Information and education facilities
- Places of public worship
- Public administration building
- Recreation area
- Recreation facilities

Such developments also should provide:

- A visible location at the front entrance to place signage/sticker(s) indicating the premises caters for mobility scooters
- Clear paths of travel from outdoors to indoors
- A clear and wide internal walkway
- Step free access
- Doorway width of at least 850mm
- Self opening or easy to open doors
- Clear and accessible path of travel for a person using an electric mobility scooter or wheelchair to the designated power points
- Circulation space adequate for a person using an electric mobility scooter or wheelchair to turn around

NOTE: the above is not a technical compliance checklist for assessing whether or not a business or organisation complies with discrimination law or building law. It is the responsibility of the organisation or business in question to ensure that all buildings, facilities, programs and services meet the requirements of relevant laws and codes including Australian Standard 1428.1.

16.6.2 At a minimum any development application for any of the listed uses will require at least one or two charging points and associated storage spaces. Dimensions must be provided with the development application. The number of charging points and associated storage spaces to be provided will be assessed on merit based on information regarding the estimated customer/user/resident base, required to be submitted with individual development applications.

NOTE: Some existing local seniors housing facilities provide for multiple scooters on site.

16.6.3 Development proponents for any non - seniors residential development should also consider provision for mobility scooters. In this respect development proponents are encouraged to undertake their own market research to determine the provision for motorised scooters.

16.7 - Development for public transport

NOTE: The Disability Discrimination Act 1992 seeks to eliminate discrimination, 'as far as possible', against people with disabilities. Public transpsort is a service covered by the Disability Discrimination Act 1992.

16.7.1 Development for the provision of new or of existing public transport facilities must account for the Disability Standards for Accessible Public Transport 2002.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 17 - CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

The following provisions can apply to different types of development in both the public and private domain.

17.1 - Lighting

Objectives

1. To encourage the use of lighting to create safer places after dark.
2. To ensure that plans for new or redeveloped public spaces consider areas that will be utilised at night.

ADVICE

17.1.1 Lighting of all entrances/exits of buildings, car parks, access routes and pathways to encourage safety and passive surveillance.

17.1.2 Lighting type and distribution should be assessed to not produce glare and should eliminate any dark shadows and concealment areas particularly in parks, car parks and pathways.

17.1.3 Lighting should be white lights (not yellow or orange) to enable users to identify a face from a 15m distance which will encourage safety.

17.1.4 Lighting should be free from obstructions such as street trees. This is important as obstructions can cause shadows and concealment areas which can limit surveillance from residential and commercial properties.

17.1.5 Use sensor lights on buildings to encourage user safety and illuminate potential offenders after dark.

17.1.6 Incorporate additional lighting below awnings to adequately illuminate footpath areas.

17.2 - Fencing/walls

Objectives

1. Maximise natural surveillance from the street to the building and vice versa.
2. Minimise the opportunities for intruders to hide.
3. Minimise graffiti opportunities.

ADVICE

17.2.1 Fences and walls should not obstruct surveillance of communal or public areas, building entrances, pathways and footpath by the building's occupants.

17.2.2 Graffiti management of fences and walls should be considered. Colours that need to be avoided include light colours (cream and white) and black as they reflect most aerosol colours and as they will attract graffiti. Large smooth surfaces should be avoided as they create a canvas-like surface.

17.2.3 Large blank walls and fences may include green screening or dense hedges that will block access to the walls.

17.2.4 Where noise insulation is necessary, use window double-glazing rather than a solid fence with a height greater than 1 metre.

17.2.5 Consider the fences/walls' construction materials.

17.3 - Landscaping

Objective

1. Facilitate casual surveillance, create pleasant environments and safe places in both the public and private domain.

ADVICE

17.3.1 Street trees should not be dense trees and should have high canopies to allow for natural surveillance from buildings to roads and pedestrians.

17.3.2 Only small shrubs, ground cover plants and high canopy trees should be used in public places. The need for maintenance of these plants and trees should also be considered as overgrown trees and shrubs could limit surveillance creating a less inviting area which will increase the perception of fear in the area.

17.3.3 Large trees should not be planted next to buildings to limit access to the building as they may create a natural ladder and limit surveillance.

17.3.4 Select species having regard for their location and shape and size at maturity.

17.3.5 Planting within 5 metres of a pedestrian pathway should be lower than 1 metre or thin trunked with high canopy to encourage safety and surveillance.

17.3.6 Trees within the car parks should be avoided as they may obstruct lighting, sight lines and passive surveillance from pedestrians and motorists. They may also create entrapment and concealment areas increasing the risk of crime.

17.3.7 Trees in the middle of sites should be avoided as they will obstruct sightlines and surveillance especially in parks and public spaces. With the exception of trees with high canopies which will not obstruct sight lines.

17.3.8 Residential fences that are adjacent to public land, laneways or footpaths should be lined with small trees, hedges or other foliage to limit access which will minimise malicious damage to the fence.

17.4 - Dwelling, shop, office, community use, frontages

Objective

1. To allow for surveillance to and from the street/public domain.

ADVICE

17.4.1 Shop, office and other community-use fronts should ensure surveillance between themselves and the street/public domain by retaining clear sight lines and limiting promotional material on windows.

17.4.2 Avoid the use of solid roller shutters such as colorbond. If necessary, use open mesh grill, protective films, transparent roller shutters.

17.4.3 Displaying merchandise on footpath should be avoided.

17.4.4 The interior of buildings should have visual connections to the street and routine activity.

17.5 - Public facilities (bus stops, telephone, automatic teller machines, help points, bicycle storage

Objective

1. Promote full surveillance of the surrounding area and create a perception of safety within public facilities.

ADVICE

17.5.1 Public facilities should be located in highly visible locations that are well lit and near activities with extended trading hours, e.g. restaurants and convenience stores.

17.5.2 Public facilities should be located away from possible places to hide such as recesses, laneways, stairs and fire exits.

17.5.3 Automatic Teller Machines (ATM) should incorporate mirrors or reflective materials so that ATM customers can observe people behind them.

17.5.4 Directional signs should be provided to key services and landmarks, e.g. railway stations, taxi ranks, libraries, museums etc.

17.5.5 Seating areas should be well lit if accessible after dark.

17.6 - Building materials

Objectives

1. Reduce the opportunity for intruder access.
2. Reduce the opportunity for graffiti and malicious damage.

ADVICE

17.6.1 Toughened or laminated glass should be used at ground floor.

17.6.2 Avoid smooth uninterrupted surfaces, especially in areas prone to graffiti.

17.6.3 All materials that are used should ensure they are robust, easily maintained, cleanable and be somewhat fire-proof.

17.6.4 Colours that need to be avoided include light colours (cream and white) and black as they will attract graffiti.

17.6.5 Large blank walls and fencing may include green screening or dense hedges that will block access to the walls, especially walls and fences that are adjacent to public areas.

17.7 - Hours of operation

Objective

1. Promote a safe environment and minimise noise levels during hours of operation

ADVICE

17.7.1 Instruct patrons when they leave the building to keep noise levels down if close to residential properties. Allocate security guards to patrol the surrounding areas.

17.7.2 Adequate security should be provided to buildings with extended hours of operation.

17.8 - Mixed land use

Objective

1. Maximise opportunities for natural surveillance through mixed land uses.
2. Avoid creating concealment opportunities for perpetuators of crime.
3. To make pedestrian routes and intended public and private domain usage obvious

ADVICE

17.8.1 Locate businesses and shops on lower floors and residences on upper floors, so that residents can observe the businesses and shops after hours while during business hours residences can be observed by businesses.

17.8.2 Buildings should maximise passive surveillance by fronting onto public spaces and streets.

17.8.3 Building and site design should promote legibility via their connection and relationship with the public domain.

17.8.4 Vulnerable spaces should be avoided by creating active spaces between buildings, and defining and obviating well travelled pedestrian routes.

17.9 - Security

Objective

1. Reduce opportunities for unauthorised access.

ADVICE

17.9.1 The use of quality locks on windows and doors.

17.9.2 Install viewers on entry doors.

17.9.3 In case of emergency security grilles on windows, etc. should be operable from the inside.

17.9.4 Ensure that skylights and/or roof tiles cannot be easily accessed, opened or removed from the outside.

17.9.5 Hiring of security guards/supervisors should be considered.

17.9.6 Install lockable gates on rear or side access.

17.9.7 Monitored alarm systems should be considered.

17.9.8 Structures and buildings are to be designed so they can't be climbed.

17.10 - Maintenance/ownership

Objectives

1. Reduce the opportunity for vandalism by the use of appropriate materials.

ADVICE

17.10.1 Public domain furniture, including street and park furniture should be made of vandal resistant and hard wearing materials and secured by sturdy anchor points or removed after hours.

17.10.2 Avoid flat or porous finishes where graffiti is likely. Impervious glazed ceramics, treated masonry, strong and wear resistant laminate, stainless steel, anti-graffiti paints and clear over-spray will reduce vandalism opportunities.

17.10.3 If large walls must be used, consider using anti-graffiti paint, vegetation, and modulation of the wall.

17.10.4 To render lighting less susceptible to vandalism use high mounted and or protected lighting.

17.11 - Blind corners

Objective

1. Avoid where possible blind corners.

ADVICE

17.11.1 Make pathways as direct as possible.

17.11.2 If barriers are used along pathways, in stairwells, hallways and car parks they should be see through.

17.11.3 Where possible, mirrors should be used to allow users to see ahead and around corners.

17.11.4 Glass or stainless steel can act as a mirror in a stairwell.

17.12 - Entrances

Objective

1. Ensure entries are clearly visible and avoid confusion.

ADVICE

17.12.1 Make the entry obvious through directional signage and design features.

17.12.2 Locate entrances in prominent positions.

17.12.3 Locating entries to maximise opportunities for natural surveillance from the street.

17.12.4 Entrances should be designed to allow users to see into the building before entering.

17.12.5 Blank walls fronting the street should be avoided.

17.12.6 Offices should be located at the front of industrial developments.

17.13 - Reducing illegitimate entry/use

Objective

1. Minimise illegitimate use/entry of spaces.

ADVICE

17.13.1 Define different spaces by the use of physical and/or psychological barriers, e.g. fences, gardens, lawn strips and by varying surface texture.

17.14 - Communal public areas

Objective

1. Ensure communal/public areas are conducive to natural surveillance.

ADVICE

17.14.1 Communal areas should be well lit.

17.14.2 Provide clear lines of sight.

17.14.3 Open style or transparent materials should be used on doors and/or walls of elevators/stairwells.

17.14.4 Entries to elevators/stairwells and waiting areas should be closed to areas of active uses and visible from the building entry.

17.14.5 Locate seating in areas of active uses.

17.15 - Building identification

Objective

1. Prevent unintended access and assist correct location of buildings.

ADVICE

17.15.1 For larger developments, provide directional signage and locational arrows.

17.15.2 Clearly identify building street numbers and ensure numbers are unobstructed (e.g. by planting) and made of durable, reflective and luminous materials.

17.15.3 Position street numbers 1m to 1.5m above ground level on the street frontage in numerals at least 7cm long.

17.16 - Pedestrian lanes

Objective

1. Avoid creating pedestrian lanes that increase crime risk.

ADVICE

17.16.1 In design avoid cul de sacs and encourage street connectivity.

17.16.2 Avoid design which relies on pedestrian lanes for access routes.

17.16.3 If a pedestrian lane is needed, ensure it has good natural surveillance and not enclosed by solid fencing.

17.17 - Car parks - lighting

Objectives

1. Enhance natural surveillance and safety in car parks through lighting.

ADVICE

17.17.1 Lighting should be bright enough to enable the car park user to easily see into the rear seat of a car before opening the car door.

17.17.2 During opening hours all external edges and access points to car parks should be illuminated.

17.17.3 So that pedestrian or driver's eyes can adjust, lighting intensity to covered or underground car parks should be transitional. That is, brighter light should be used at entrance and pedestrian ways and dimmer light elsewhere.

17.17.4 Use white lights instead of yellow tone lighting to encourage a perception of safety.

17.18 - Car parks - materials

Objective

1. Enhance natural surveillance within car parks.

ADVICE

17.18.1 Ceilings and walls of the car park should be finished in light colours to enhance brightness and light reflectivity.

17.18.2 Use reflective film on windows overlooking car parks so that potential intruders do not know whether they are being observed during daylight hours.

17.19 - Car parks - site layout

Objectives

1. Ensure safety and ease of access within the car park.
2. Facilitate natural surveillance.
3. Reduce anti-social behaviour such as car hooning.

ADVICE

17.19.1 If large expanses of car parks must be used, provide surveillance such as security cameras.

17.19.2 Avoid hidden recesses.

17.19.3 Access points to pedestrian pathways, lifts and stairwells should be prominent.

17.19.4 Disability parking spaces should be located in convenient and prominent visible areas.

17.19.5 Car parks should be located in areas that can be observed by adjoining users.

17.19.6 The number of entry/exit points should be minimised.

17.19.7 Create pedestrian corridors for large developments.

17.19.8 Locate entry/exit points in close proximity, close to the car park operator or shops, cafes, etc.

17.19.9 Staff car parking should be separated and secured.

17.19.10 Increase human activity in car parks by locating car wash services, taxi ranks and kiosks within car parks

17.19.11 Car park layout should allow good lines of sight between cars

17.19.12 Car park design should not be conducive to car hooning (such as burnouts) when the car park is empty.

17.20 - Car parks - security

Objective

1. Reduce opportunity for unauthorised access and provide security.

ADVICE

17.20.1 Consider installing boom gates or similar at entrances and exits of car parks.

17.20.2 Intercoms, remote lock facilities or similar security devices should be used in multi-level car parks where appropriate.

17.20.3 Larger developments should incorporate a help point on each parking level and/or the allocation of security staff.

17.20.4 Secure off the unneeded parking area outside peak hours.

17.21 - Car parks - security grilles

Objectives

1. To allow for natural surveillance.

ADVICE

17.21.1 Where security grilles are required, use an open style, to allow surveillance between the street and car park.

17.21.2 Ensure the level of the car park allows surveillance to and from the street.

17.21.3 With multi-level car parking the under street and above street levels should incorporate an open style grille to allow some surveillance to and from the street.

17.21.4 Open style security grilles should be used for individual parking spaces rather than separate garages.

17.22 - Car parks - directional signage

Objectives

1. Prevent unintended access and assist persons locating their vehicle in car parks.

ADVICE

17.22.1 Ensure signage is prominent and simple to understand.

17.22.2 Use simple graphics, standard symbols and strong colours to distinguish between parking areas.

17.22.3 At the car park entry drivers and pedestrians should have clear direction to stairs, lifts and exits by way of the car park layout/design and/or directional signage.

17.22.4 In large and/or multi-level car parks, use creative/thematic signage to distinguish different levels so that cars are more easily located by their drivers.

17.22.5 Provide signage recommending drivers lock their cars.

17.22.6 Ensure car park users are made aware at the entrance, where and when exits are closed.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 18 - PUBLIC ART

The term 'public art' is defined as art installations or activities which are experienced by, or are accessible to, the general public. It may be permanently incorporated within the fabric, design, or fixtures of a building or place, or be a temporary project such as art installations and events. Public art can be situated within the public areas of private development, as well as in publicly owned spaces. Public art is work that results from the involvement of a professional artist and also includes the conceptual contribution of an artist to the design of public spaces and facilities.

Public artwork may include, but is not limited to: sculpture, performance, sound, moving image, light, digital art, painting, photographs, murals, street art, and other two-dimensional art forms, integrated art and design features, sculptural architecture, installations and emerging practices in digital media.

Commercial promotions, mass produced 'art objects' such as street furniture or playground equipment, landscaping or generic hard-scaping elements which would normally be associated with a project are not considered to be public art.

Objectives

1. Encourage and facilitate the creation of art works of different scales, forms and mediums in public places and spaces.

ADVICE

18.1. With each Precinct Development Strategy and Development Application for Shellharbour City Centre and for DAs in town centres, locations for public art works must be identified in consultation with Council's cultural development staff.

18.2 Any public art must be consistent with any Council's Public Art Policy and Arts and Cultural Development Strategy.

18.3 Appearance, location, design, materials and timing of any public art implementation by the developer, associated with a development application/approval must be resolved prior to development approval with Council's cultural development staff.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 19 - REFLECTIVITY

Objective

1. To avoid discomfort or hazard from excessive glare and/or heat.

ADVICE

19.1 Where the proposed development proposes large expanses of external glass, a reflectivity index of less than 10% must be achieved. Further it must be demonstrated that the glazing will not cause hazard or discomfort to pedestrians or motorists or nuisance to occupants of dwellings nor undue heat shedding glare onto other buildings or places.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 20 - LANDSCAPING

This Chapter of the DCP outlines Council's objectives and advice for the landscaping component for all developments requiring landscape plans.

Objectives

1. To maintain existing landscaping, significant trees and natural site features in landscape design.
2. To provide a high standard of landscape design that complements the design of the development, enhances architectural features and integrates with the streetscape.
3. To retain views where applicable and design landscaping to create a frame around views of interest.
4. To provide established landscaping that is at a scale relative to the proposed development and aims to relieve the bulk associated with industrial or commercial buildings.
5. To promote street tree planting that enhances the streetscape.
6. To provide perimeter landscaping beds with adequate space to sustain optimum growth of mature vegetation that will create privacy to adjoining properties.
7. To design landscaping that will provide privacy, aid in temperature control and noise attenuation.
8. To reduce the dominance of hard surface areas with the use of permeable surfaces where appropriate.
9. To minimise inappropriate overshadowing to private open space areas and adjoining properties.
10. To take into account the location of services and utilities.
11. To take into account the impact on root systems and branches on buildings, paved areas, surrounding and neighbouring structures.
12. To achieve crime prevention through environmental design.
13. To ensure landscaping does not obscure sightlines between motorists and pedestrians
14. To break up visual massing and provide visual relief of the residential built form.

20.1 - Landscape documentation and implementation

ADVICE

20.1.1 A detailed landscape plan must accompany the development application for all types of development. Concept plans are acceptable for Residential Subdivisions (Greenfields) with the lodgement of the development application.

NOTE: Council does not approve a landscape concept plan but, accepts the plan for a basis for the final landscape plan

20.1.2 Landscape plans must be completed by suitably qualified persons for specific developments, as per **Table 20.1** below. The following table outlines who is acceptable to complete the required landscape plans for development applications.

Table 20.1 - Qualifications for preparing landscape plans

DEVELOPMENT TYPE	CATEGORY TYPE	DOCUMENTATION
Dual Occupancy	Category 1	Landscape plan
Car Parks	Category 1	Landscape plan
Motor Showrooms	Category 1	Landscape plan
Industrial Units	Category 1	Landscape plan
Commercial Developments	Category 2	Landscape plan
Multi Dwelling Housing	Category 2	Landscape plan
Child Care Centres	Category 2	Landscape plan
Community Centres	Category 2	Landscape plan
Medical Centres	Category 2	Landscape plan
Residential Subdivisions (Greenfield and infill)	Category 3	Concept plan or Landscape plan
Residential Rural Subdivisions	Category 3	Concept plan or Landscape plan
Hospital/Medical Facilities & Educational/Schools Development/Shopping Centres	Category 3	Concept plan or Landscape plan

- Category 1 – person whom possesses a Certificate V in Horticulture/Landscape.
- Category 2 – Landscape Architect or Landscape Designer whom possesses a Landscape Advanced Associate Diploma and extensive postgraduate experience in landscape design (minimum five (5) years).
- Category 3 – Landscape Architect, eligible for corporate membership of the Institute of Landscape Architects.

See council's website for DA landscape information requirements.

20.2 - Development types and landscaping

ADVICE

All development

20.2.1 Landscaping must take into account sight lines between motorists and pedestrians.

20.2.2 Avoid the use of spiky plants, plants with fleshy fruits and trees that are known to limb drop near pedestrian areas, playgrounds, BBQ and litter areas.

20.2.3 Generally planting (screen planting or otherwise) must be sufficiently visually permeable to achieve passive surveillance. Full, as opposed to partial screening will only be permitted where privacy concerns override passive surveillance. This maybe the case with private open space for dwellings adjoining the street.

20.2.4 Planting selections should reinforce and not obstruct visibility to views and vistas both within the site and from significant viewpoints when they reach maturity.

20.3 - Remnant vegetation and wetlands

ADVICE

Remnant vegetation and wetlands

20.3.1 A Controlled Activity Approval must be obtained from the NSW Office of Water under the *Water Management Act 2000* for the development of a watercourse.

20.3.2 Documentation must support the application for the Controlled Activity Approval and should include a copy of the Soil and Water Management Plan and a catchment wide strategy to address the hydrological and water quality changes in all watercourses within the development.

20.3.3 A copy of the Controlled Activity Approval must be made available to Council prior to the release of the Construction Certificate.

20.3.4 A Riparian Management Plan and/or a Vegetation Management Plan is to be completed and submitted to Council with the submission of the Riparian/Wetland Landscape plans.

20.3.5 The Vegetation Management Plan is to include the following:

a. Methods of weed removal and control – all exotic vegetation should be removed.

b. Revegetation – including plant species, location, methods for planting, site preparation and site stabilisation.

c. Site and vegetation maintenance requirements including the establishment phase and longer term requirements.

d. Aquatic and semi-aquatic plant species including location and planting density.

e. Staging and sequence details for revegetation and maintenance tasks e.g. Gantt chart.

f. A monitoring and performance evaluation program and to include replacement species.

g. A costing for the implementation of all stages and all components of works associated with the landscape/wetlands, including maintenance requirements.

20.3.6 The Riparian Management Plan is to include the following:

a. Plans showing in detail the existing creek channel, riparian corridor, vegetation and geomorphic features.

b. Detailed plans of any channel modification and stabilisation works.

c. A longitudinal section of the existing and proposed creek channel bed in sufficient detail to identify changes in bed level and hydraulic features (i.e. pools and riffles).

d. Details of any proposed/existing stormwater discharge points into the riparian corridor.

e. Details of the design and location of proposed water quality control devices that will treat stormwater prior to discharge.

f. Cross sections of the riparian corridor showing both existing and proposed ground surface levels.

g. Details on the staging or sequencing of works.

20.4 - Edging, mulch/soil and plant material

ADVICE

Garden edging

20.4.1 All garden beds must be securely edged with either treated timber, durable hardwood timber, concrete, masonry or other approved materials to Council's satisfaction.

20.4.2 Edging must be strongly secured to prevent the removal of soil and mulch from the garden bed.

20.4.3 Edging details and construction methods must be shown on the landscape plan.

20.4.4 If timber edging is proposed, the minimum size required for use is100mm x 50mm secured to 50mm x 50mm pegs. Screws must be used to secure edging pegs. (Nailing is not an acceptable method of securing edging). The top edge of the timber must be flush with the adjoining surfaces and not above.

Mulch/soil

20.4.5 Organic mulches, leaf litter and various types of bark-chip must be used throughout all garden beds, inorganic mulches can only be used within garden beds in private ownership, unless otherwise approved by Council.

20.4.6 Mulch is to be installed at a minimum thickness of seventy-five (75) mm.

20.4.7 Black plastic or any other types of plastic used on garden beds will not be accepted by Council.

20.4.8 Coloured mulches should be avoided.

20.4.9 A friable soil blend or friable native mix certified to Australian Standard AS 4419 should be used for landscape beds.

Plant material

20.4.10 Plants must be container grown, hardy and tolerant of the various soil and environmental conditions found in the Shellharbour LGA.

20.4.11 Plants must be free from disease and insect pest with a strong root system.

20.4.12 Recommended minimum pot size of 140mm for plant material and minimum 200mm for tree stock for all landscape beds (excluding street trees).

20.4.13 The use of native species to the Shellharbour LGA is recommended. See Shellharbour Native Species Plant Listing which is in the associated **Appendix 7** or Council's booklet titled Grow Local Illawarra native Garden Guide can be sourced at www.shellharbour.nsw.gov.au.

20.4.14 Landscaping must consider the effects of root systems and branches on buildings, paved areas and utility services. Larger trees should be suitably located to prevent any impact on surrounding structures or services.

20.4.15 Noxious and environmental weeds will not be accepted for landscape purposes in the Shellharbour LGA. These are identified in **Appendix 7**.

20.5 - Retaining walls

ADVICE

20.5.1 Garden beds with a grade less than a 1 in10 must be retained by the use of either masonry, rock or treated timber sleepers.

20.5.2 Retaining walls which exceed 600mm in height must be designed by a practising Structural Engineer and require approval from Council.

20.5.3 Foundations, drainage lines and aggregate must be solely placed within the property boundary.

20.5.4 Details of all retaining walls must be illustrated on the landscape plan.

20.6 - Services

ADVICE

20.6.1 Landscape design must take into account the location of services and utilities including water, sewer, electricity, gas, telecommunications and stormwater services these services must be indicated on the landscape plan in order to assess correct plant placement.

20.6.2 In the case where services must be installed after landscaping is established, the developer must install service conduits to allow easy installation with minimum disturbance.

20.7 - Street trees

ADVICE

20.7.1 All developments may be required to supply and install street trees. Where street trees are required, the following requirements apply:

a. A minimum of one street tree per average lot or at intervals of 6-10 metre spacings along the entire frontage where applicable.

b. The tree species must be a minimum 75 Litre pot size with a tree height of 2.5 metres from ground level with a calliper of 35mm (NATSPEC).

c. Trees must be set back a minimum 900mm from the back of the kerb or where a footpath exists the tree must be planted midway between the footpath and kerb. If the tree is to be positioned less than 1 metre from the footpath, root barriers must be installed adjacent to the footpath.

d. 1 metre width x 1.5 metre length timber edging secured with galvanised screws to timber pegs is required to be installed at the base of the tree constructed from the back of the kerb.

e. Trees are to be fitted with 2 hardwood stakes with 50mm hessian ties to support each tree.

f. A minimum 75mm depth of organic mulch applied a minimum 500mm diameter surrounding the base of the trunk.

g. Street trees proposed on arterial roads of residential subdivisions (Greenfields) are to be fitted with two bollards or tree guards. All other roads of the subdivision street trees must be fitted with hardwood stakes.

h. Existing street trees must be protected with the use of temporary protective fencing prior to the commencement of any construction work. Fencing must be located a minimum of 1.5m from the base of the tree positioned in a square fashion.

i. Where trees are required to be installed within hard surfaces (commercial developments), the following requirements apply:

  i. A minimum 1m x 1m tree pit fitted with a root director.

  ii. Trees must be fitted with either a permeable aggregate, resin bound or rubber tree surrounds.

  iii. Tree guards must be fitted to Council's specifications.

  iv. Minimum 45lt tree must be installed.

j. Street tree planting must take into account overhead power lines and the following clearances:

  i. Minimum 1.5 metres from a stormwater pit.

  ii. Minimum 3 metres either side of a driveway or vehicular crossing.

  iii. Minimum 2 metres from services, telecommunications, stormwater outlets and signage.

  iv. Minimum 3 metres from street light posts.

  v. Minimum 8 metres from road intersections.

  vi. Minimum 15 metres from pedestrian crossing and traffic signals.

  vii. Minimum 15 metres from the approach to a bus stop and 6 metres from the departure side.

20.7.2 Street tree selection must be consistent with any street tree provision with Council's current Capital Works Program

20.8 - Existing trees/vegetation and development

NOTE: Trees like any other constraint, require careful consideration during the planning stage. The successful retention of appropriate trees is an asset to any development. Trees can provide shade, wind protection, purify the air, reduce water run-off, prevent soil erosion and provide a haven for birdlife.

ADVICE

20.8.1 The landscape plan must provide notes on how existing trees and remnant vegetation will be protected during the construction period for all developments.

20.8.2 Footings of all developments must be built to accommodate root growth.

NOTE: Development consent does not give automatic approval for the ringbarking, pruning, lopping, topping, root pruning, removing of any trees or vegetation located on a development site.

20.8.3 Arborist Report's should address the following:

a. An arborist report may be required to be submitted to council prior to the release of the construction certificate or where a tree or other vegetation is subject to further assessment under a Tree Management Application.

b. The arborist report must be compiled by a qualified arborculturist, whom possesses a level V Certificate in Horticulture/Arborculture or the equivalent.

c. The arborist report must identify trees by genus and species, be clearly numbered on a survey plan, provide a health and SULE rating, provide a report on the impacts of the proposed development on the tree/s, recommend trees suitable for retention, nominate a tree protection zone plan, recommend the method of tree management, including any branch or root pruning.

d.

20.8.4 Tree Protection Zones should address the following:

a. Council will not allow any activity that will adversely affect the health and wellbeing of a tree that is to be retained.

b. Tree roots, structural and feeder, extend well beyond the canopy of the tree and can be found travelling two or more times further than the radius of the canopy.

c. The tree protection zone (TPZ) is a 'No Development Zone' the area must not have any buildings, footings, excavation works, retaining walls, services, hard surfaces and any level changes.

d. If access to the site requires vehicles to cross a protective zone of a tree, and Council has approved this arrangement, protective fencing must be placed around the remaining protective zone. A 350mm layer of organic mulch must be placed on the access way for the duration of the construction period to reduce compaction. This must be inspected by council prior to the commencement of the construction period, once the construction period has ceased, the mulch must be reduced in thickness to a minimum of 75mm in depth.

NOTE: The tree protection zone (TPZ) is defined as the width of the tree canopy or half the tree height, whichever is greater.

20.8.5 Tree Protection Fences should address the following:

a. Prior to commencement of any work on a development site, tree/s to be retained must be protected from damage by a protective fence, fencing must be erected at the boundary of the TPZ.

b. The fence must be at a minimum height of 1.2 metre.

c. The fence must be clearly marked at all times with the use of high visibility plastic hazard tape or parawebbing.

d. If a protection fence cannot be constructed on the boundary line of the TPZ, a temporary mesh penal fence mounted on concrete blocks can be installed within the tree preservation zone (rent-a-fence) as close to the boundary line as possible.

e. The fenced area must be maintained throughout the construction period and must not be an area for storage of building materials, port-a-loos, garbage receptacles, machinery, vehicles and all other waste materials.

20.8.6 Arborist's Certification requirements are as follows:

a. The developer must submit to Council or the Principal Certifying Authority an Arborist certification 3 times throughout the duration of the development, in order to verify that retained trees have been correctly retained and protected as per the conditions of consent and the Arborculturist recommendations.

b. The certification must be submitted to Council or the Principal Certifying Authority before commencement of any construction work, at the completion of the construction period prior to the release of the occupation certificate and 12 months from the date of the issue of the occupation certificate.

NOTE: The Occupation Certificate will not be issued without approved Arborists Certification.

20.9 - Development in bushfire prone areas

ADVICE

20.9.1 Any dwellings, associated structures and landscaping located within a bushfire prone area must be constructed in accordance with the best practice requirements outlined in the 'Planning for Bushfire Protection' document produced by the NSW Rural Fire Service.

20.9.2 Native plants selected for fire prone areas should have characteristics of a smooth bark, a high moisture content, a low volatile oil content and a high salt content in their leaves.

20.9.3 A list of fire retardant plant species has been provided in **Appendix 11** as a guide only for the Shellharbour LGA. All plants will burn in the right climatic conditions and environment; however, fire intensity can be reduced by the use of fire retardant plant species.

20.10 - Car parks

ADVICE

20.10.1 Where open car parks are proposed, including as part of the development, the following landscaping advice applies:

a. Landscaping bays must be provided between car parking rows and at the end of the aisles. Landscape bays are to be a minimum width of 2 metres and must be fitted with root barrier. Upon Council approval a variation in the width of the landscape bed between car parking rows can be considered depending on the amount of car spaces and the design layout of the car park.

b. Screen planting must be provided on all boundaries of the car parking area, landscaping is to be a minimum 2 metre wide strip and must incorporate shade trees.

c. Tree species selected should be long-lived, are not prone to limb drop or have soft fleshy fruit that will damage vehicles or are hazardous to pedestrians.

d. Landscaping must consist of medium sized, cleared trunk trees under planted with ground covers or low shrubs with a maximum height of 1 metre.

e. Wheel stops must be provided to prevent damage to vehicles and landscaping

20.11 - Child care centres

ADVICE

20.11.1 A minimum 1.5 metre landscape bed must be provided along the entire frontage between the front boundary and the adopted building line.

20.11.2 Screen planting must be provided within the rear along all side and rear boundaries of the existing or the proposed dwelling with the use of groundcovers and medium to tall shrubs, all landscape beds are to have a minimum width of 1 metre.

20.11.3 Landscaping must consist of plant species with interesting texture, colour, shape and fragrance to enhance and stimulate children's senses and creativity.

20.11.4 Plant species with either spiky plant parts, poisonous plant parts, fleshy fruits and have strong fragrances must not be used where they can be in contact with children and near children's play areas, sandpits and playground equipment.

20.11.5 Plant species known to cause allergies and asthma attacks must not be used within the landscape. A plant species listing can be obtained from the Asthma Foundation Australia. www.asthmansw.org.au

20.11.6 Shade areas must be provided with the use of deciduous trees allowing sun in winter and shade in summer.

20.11.7 Tree species selected should be long-lived, are not prone to limb drop and drop soft fleshy fruit or small pods that can be hazardous to children.

20.11.8 Inorganic mulches are not to be used unless otherwise approved by Council.

20.12 - Vehicle sales or hire premises

ADVICE

20.12.1 A 3.5 metre width landscaping bay must be provided along the entire street frontage incorporated with a limited display of vehicle bays permitted.

20.12.2 Landscaping must consist of medium sized, cleared trunk trees under planted with ground covers or low shrubs with a maximum height of 1 metre.

20.12.3 Vehicle bays located within the 3 metre landscape area must be fitted with wheel stops to prevent damage to vehicles and landscaping.

20.13 - Industrial

ADVICE

20.13.1 The area between the front boundary to the front building line must have a minimum 4.5 metre wide landscape bay on main roads and a minimum 3.5 metre wide landscape bay on all other roads.

20.13.2 A minimum of a 1 metre wide landscape bay is to be provided along the side boundaries between the front boundary line to the adopted building line.

20.13.3 Landscaping must incorporate 2 medium to large size, clear trunk trees under planted with groundcovers and shrubs to a maximum height of 1 metre.

20.13.4 All proposed signage, receptacles and letterbox locations are to be shown on the landscape plan.

20.13.5 All receptacle bins for refuse disposal must be screened from the street with the use of landscaping and screens that complement the building.

20.14 - Commercial

ADVICE

20.14.1 Street tree bays must be provided at a minimum of 1m^2 tree pit adjacent to the back of the kerb to accommodate a medium to large clear trunk tree or to Council's specifications.

20.14.2 Where required, specimen trees must be of a minimum 75 litre stock size and a height of 2.5 metres when planted.

20.14.3 Tree species selected should be long-lived, are not prone to limb drop or drop soft fleshy fruit that will damage vehicles or are hazardous to pedestrians.

20.14.4 All landscape beds must be at a minimum width of 1 metre.

20.14.5 A minimum on-site landscape bay may be required where the interface with a rear lane or public place (other than the street frontage) can be enhanced.

20.14.6 Ensure tree choice will not obscure view to shopfronts from public place.

20.15 – Single Dwellings

ADVICE

20.15.1 Where possible developments are to establish vegetation such as native shrubs to soften the visual impact of buildings/structures.

20.16 – Dual occupancy and multi dwelling housing

ADVICE

20.16.1 A minimum 1.5 metre landscape bed must be provided along the entire frontage between the front boundary and the adopted building line.

20.16.2 Landscape beds facing onto street frontage/s must incorporate a minimum of two medium size, clear trunk trees under planted with shrubs and/or groundcovers. (These trees are in addition to any street trees that may be required).

20.16.3 Screen planting must be provided along any side or rear boundary of the existing and proposed dwellings with the use of tall shrubs, landscape bed must have a minimum width of 1.5 metres. Adjoining a driveway, it can be 1 metre. See multi dwelling housing advice in **Chapter 3 of this DCP**, streetscape and design for dwellings, dual occupancy and multi dwelling development.

20.16.4 Screen planting must be provided along the boundary of the 4 x 5 metre private open space area of each dwelling where the private open space faces onto adjoining properties. Landscaping must not to encroach within the 4 x 5 metre private open space.

20.16.5 Solar access should be maintained into the dwellings and into neighbouring dwellings with the use of small deciduous trees. Deciduous plants can provide shade in summer and allow sunlight in winter.

20.16.6 For developments in excess of 10 units, a common open space area, fully landscaped, is to be provided for residents. The size, location and type of common recreation area / facility to be provided is to be satisfactorily negotiated with Council at the development application stage. This requirement does not apply where attached dwellings or all dwellings within a multi dwelling housing development have full direct frontage to a public road and are subdivide by Torrens Subdivision.

20.16.7 Landscaping of outdoor spaces should contribute to the amenity of the dwelling as well as the streetscape and neighbourhood character and consider the impact on neighbours.

20.16.8 Landscaping should complement the scale of the development and surrounds.

20.16.9 Landscaping should prevent weed infestation of remnant bushland areas in public open space areas by not planting weed species in private gardens and removing weeds when evident.

20.16.10 Landscaping and garden design should provide shade, privacy, minimise overlooking of neighbours and provide protection from cold winter southerly and westerly winds.

NOTE: Perimeter landscape beds are not required on the first floor dwellings within a dual occupancy development where private open space is provided in the form of a

NOTE: Landscape beds are included in the calculation of the 40m2 required total area of the private open space area for a dwelling in a medium density development.

20.17 - Residential subdivisions (greenfield)

ADVICE

20.17.1 Landscaping should be a natural extension of the existing vegetation.

20.17.2 The treatment of creek lines within the subdivision must be addressed. Creek lines are valued areas for passive recreation and establishment of natural groupings of large trees.

20.17.3 Extensively landscape buffer areas to offset noise sources such as railways and major roads.

20.17.4 Landscaping should assist in the definition of open space and recreation areas.

20.17.5 Subdivision entry should be a feature point with extensive landscaping.

20.17.6 Street tree planting is required at one tree per lot evenly spaced at the half way point of each lot on Council's nature reserve. Corner lots are required to have two trees one per street frontage.

20.17.7 Landscape beds must be appropriately spaced to allow vehicle access for maintenance.

20.17.8 Removable, lockable bollards must be placed where reserves have vehicle access onto share ways

20.17.9 Landscaping must not obstruct access to manholes, valves, hydrants, meter pits, drainage pits etc.

20.17.10 Existing and proposed trees located within turf areas must have a minimum 3 metre clearance for the manoeuvring of maintenance equipment.

20.17.11 A maximum gradient of 1 in 6 is the desirable gradient for turf maintenance.

20.17.12 Landscape beds must have defined edges constructed to prevent mulch migrating onto adjacent pathways, grassed areas and residential lots.

20.17.13 Edging for landscape beds must be constructed from concrete or masonry and mowing strips are to be installed where appropriate.

20.17.14 Retaining/feature walls that exceed 700 mm in height and create a drop off ledge and are adjacent to pedestrian/share ways must be fitted with a safety fence.

20.17.15 Landscaping in close proximity to pram ramps must have a maximum mature height of 1 metre and must have a minimum 10 metre clear visual distance on both sides of the pram ramp.

20.17.16 Decomposed granite must not be used where granite material can spill onto concrete pathways or roadways.

20.17.17 Water outlets must be provided for maintenance requirements at 60 metre intervals.

20.17.18 All play equipment and impact absorbing material must comply with the *Australian/New Zealand Standard 4486.*1, details of all playground equipment, soft-fall and drainage must be shown on the detailed landscape plan.

20.17.19 Equipment selection and its layout must take into consideration persons with specific disabilities refer to *Australian Standards 1428*.1 Design For Access and Mobility.

20.17.20 Details of park furniture, shelters and BBQ facilities must be shown on the landscape plan.

20.17.21 Shade planting with the use of deciduous trees should be considered in close proximity to seating areas.

20.17.22 All areas to be dedicated as public reserve must be cleared of both environmental weeds and noxious weeds prior to dedication.

NOTE: Landscaping within roundabouts, refuge islands, median strips or any traffic aisles associated with roads will not be acceptable unless otherwise approved by Council.

NOTE: Exotic trees or native trees can be used as feature/avenue planting along major roads and subdivision entrances.

20.18 - Plant lists for Shellharbour LGA

ADVICE

20.18.1 Council has lists of suitable and unsuitable plant species for the Shellharbour LGA.

20.18.2 These lists are contained in the **Appendix 7** on suitable and unsuitable plant species.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 21 - PRESERVATION AND REMOVAL OF TREES OR VEGETATION

Objectives

1. To provide the circumstances where trees or vegetation require an approved Vegetation Removal Application to ringbark, cut down, top, lop, remove, injure or wilfully destroy them.

2. To provide advice on public tree/vegetation removal and maintenance.

3. To preserve the amenity of the city, including biodiversity values, through the preservation of trees and other vegetation.

Note: This chapter applies to relevant zones under LEP 2013. For tree/vegetation removal on land not in LEP 2013, contact Council's Customer Services Section.

ADVICE

1. The *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (The SEPP) and Part 4 of the *Environmental Planning and Assessment Act 1979* must be referred to for the proposed removal of tree and other vegetation.
2. The SEPP applies to vegetation in non – rural areas in the City. Refer to the SEPP for the relevant LEP 2013 zones. This Chapter nominates Declared Vegetation as required by the SEPP.
3. A Vegetation Removal Application (VRA) must be lodged with Council for all vegetation management works where it is proposed prune or remove vegetation.
4. Tree Works for Declared Vegetation will only be approved where Council is satisfied the vegetation is dead, dying or poses are risk to property or life.
5. Trimming or pruning branches to mitigate risk to property or life will be considered before removal.
6. The removal or pruning of trees for the improvement of views and/or drops unwanted material will not be an acceptable reason for the removal or pruning of Declared Vegetation.
7. Council will only undertake Tree Works for trees on public land to mitigate risks to property, life or damage to public assets. The following reasons are not considered in determining tree works:
    a. Improvement of views
    b. Dropping of unwanted materials, such as leaves, sticks, sap/resin, flowers, fruit or animal droppings
    c. Interference with private structures
    d. Shading of solar panels, except where Council planted the trees after the installation of the panels.

8. A VRA is still required where the application relates to certain Exempt Vegetation (Clause 21.11a) and Exempt Vegetation with a trunk greater than 30cm. Council's concurrence for tree works must be received prior to commenced of works.
9. The property owner must plant a suitable native replacement tree on their property or pay a contribution for Council to plant the tree on public land, where:
    - An approved VRA is issued to remove Declared Vegetation or Exempt Vegetation (21.11 (a)), except dead branch removal; or
    - Exempt species with a trunk greater then 30cm in diameter measured at natural ground level.

Declared Vegetation

10. Vegetation is declared in accordance with the SEPP, if it meets any one or more of the following criteria:
    a. is 5 metres or more in height;
    b. has a trunk diameter of 30 cm or more at natural ground level;
    c. is a hollow bearing tree where the hollow is being used for shelter, roosting or nesting;
    d. it is a requirement of a Development Notice of Determination Consent that the vegetation is to remain.
    e. any vegetation listed as a threatened species as defined under clause 1.6 of the *Biodiversity Conservation Act 2016* (BC Act) or other relevant legislation (see list of legislation at end of this chapter).

Exempt Vegetation

A tree or other vegetation is exempt from being declared where:

a. They are located within 3 metres, measured from the structure wall to the centre of the main trunk, of an existing approved habitable dwelling (note, habitable building does not include any deck, garage, garden shed or other ancillary building or structure), except:
    i. they are not a heritage item or within a heritage conservation area; or
    ii. Where they are to remain as a requirement of a Development Notice of Determination Consent; or
    iii. any vegetation listed as a threatened species as defined under clause 1.6 of the *Biodiversity Conservation Act 2016* (BC Act) or other relevant legislation (see list of legislation at end of this chapter).
b. Removal of dead branches attached to trees.
c. they are identified as a noxious weed under the *Biosecurity Act 2015.*
d. they are approved for removal under a Development Notice of Determination Consent.
e. they are a specific species within an approved plantation grown for a commercial use.
f. emergency works are carried out by Council, State Emergency Service, Rural Fire Service, or other emergency service authority in response to an emergency in the threat of injury to persons or damage to property.
g. they are ordered under the *Electricity Supply Act 1995*, the *Roads Act 1993* and the *Surveying Act 1993*.
h. bush fire reduction work is undertaken, authorised by the NSW Rural Fire Service under the *Rural Fires Act 1993.*
i. the works are undertaken by Council or a contractor acting on behalf of Council on Council owned land or Council managed land.

They are identified in the following **Table 21.1 Exempt Species,** except where it has a trunk diameter of 30 cm or more at natural ground level.

12. Exempt Vegetation does not apply to any tree or vegetation which:

- Is classified as being part of a vulnerable, threatened or endangered ecological community, or provides (or has the potential to provide) habitat for native fauna, or fauna classified as vulnerable or threatened under the relevant Act;
- Is located on a site that is classified as containing vulnerable, threatened or endangered ecological communities;
- Is, or forms part of, a heritage item or is within a heritage conservation area;
- Is required to be retained by the conditions of a development consent or a Section 88B restriction on the use of the land or positive covenant instrument;
- Has trunk diameter greater then 30cm measured a natural ground level.

Table 21.1 - Exempt species

BOTANICAL NAME	COMMON NAME
Acer negundo	Box Elder
Acacia baileyana	Cootamundra Wattle
Acacia podalyriifolia	Queensland Silver Wattle
Acacia pycnantha	Golden Wattle
Acacia saligna	Golden Wreath Wattle
Afrocarpus falcatus	African Fern Pine / Yellowwood
Ailanthus altissima	Tree of Heaven
Alnus acuminata	Evergreen Alder
Cecropia spp.	Mexican Bean Tree
Celtis sinensis	Chinese Celtis
Citrus Trees	
Cinnamomum camphora	Camphor Laurel
Cuppressus macrocarpa 'Brunniana'	Golden Cypress Pine
Erythrina crista-galli	Cockspur Coral Tree
Erythrina x sykesii	Coral Tree
Ficus elastica	Rubber Tree
Gleditsia triacanthos	Honey Locust
Grevillea robusta	Silky Oak
Harpephyllum caffrum	Kaffir Plum
Jacaranda mimosifolia	Jacaranda
Koelreutaria paniculata	Golden Rain Tree
Lagunaria pattersonii	Norfolk Island Hibiscus
Ligustrum lucidum	Large Leaf Privet
Ligustrum sinensis	Small Leaf Privet
Liquidambar styraciflua	Liquidambar
Morus alba	White Mulberry
Nerium oleander	Oleander
Olea spp.	Olive Trees
Phoenix canariensis	Canary Island Date Palm
Pinus radiata	Radiata Pine
Populus spp.	Poplar Trees
Prunus spp.	Stone Fruit Trees
Pyracantha spp.	Firethorn
Radermachera sinica	China Doll
Ricinus communis	Castor Oil Plant
Robinia pseudoacacia	Black Locust
Syagrus romanzoffianum	Cocos or Queen Palm
Schefflera spp.	Umbrella Trees
Schinus spp.	Peppercorn / Pepper Tree
Salix spp.	Willow Trees
Tecoma stans	Yellow Bells
Toxicodendron succedaneum	Rhus Tree

Triadica sebifera	Chinese Tallow
Ulmus parviflora	Chinese Elm
Yucca spp.	Dagger Plant
Fra*xinus griffithii*	Himilayian ash

Pruning

13. All pruning must be carried out to the Australian Standard *4373-2007 Pruning of Amenity Trees*. See Council's website.

Offset Planting

14. In order to maintain urban tree canopy cover, the applicant may be required to undertake compensatory activities to offset the impacts incurred through an approval to clear vegetation.

The number of replacement plantings required will be guided by the retention value of the tree to be removed which is determined through a recognised arboricultural assessment method such as the Institute of Australian Consulting Arboriculturists (IACA) Significance of a Tree Assessment Rating System (STARS) (IACA 2010). This assessment will be undertaken by Council.

Guidelines on the minimum offset ratio for replacement planting according to a tree's retention value is as follows:

- Low retention value – 1:1 – one (1) replacement native tree
- Medium retention value – 2:1 – two (2) replacement native trees
- High retention value – 3:1 – three (3) replacement native trees

For highly significant trees of remnant, heritage or cultural significance; or containing habitat features, replacement plantings of a minimum of 4:1 may be required.

If offset planting within the property where the tree(s) were removed is not possible then payment of a fee to Council, for Council to undertake tree replacement on Council owned/managed land on behalf of the applicant will be required.

Heritage Considerations

15. State Environmental Planning Policy (Biodiversity and Conservation) includes considerations for the clearing of vegetation that is or forms part of a heritage item or that is within a heritage conservation area or that is or forms part of an Aboriginal object or that is within an Aboriginal place of heritage significance. It must be minor or for maintenance and not adversely affect heritage significance to be considered under the SEPP. Refer to the SEPP. If it does not meet the SEPP's criteria, then development consent is required under Clause 5.10(2) of LEP 2013.
    - *State Environmental Planning Policy (Biodiversity and Conservation) 2021*
    - *Biodiversity Conservation Act 2016*
    - *Biodiversity Conservation Regulation 2017*
    - *Local Land Services Act 2013*
    - *Local Land Management (Native Vegetation) Code*
    - *Fisheries Management Act 1974*
    - *Environment Protection and Biodiversity Conservation Act 1999*
    - *Environmental Planning and Assessment Act 1979*
    - *Shellharbour Local Environmental Plan 2013*

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 22 - CONTAMINATION

Objective

1. Integrating land contamination management into the development process aims to:

   a. ensure that changes of land-use will not increase the risk to health and the environment

   b. avoid inappropriate restrictions on land-use

   c. provide information to support decision-making and to inform the community.

ADVICE

General

22.1 The potential for and possibility of contamination must be considered in the development process for all development. The associated **Appendix 8** provides information about the various state government requirements for identification and remediation of contaminated land.

Asbestos

22.2 Any development involving demolition, additions, alterations to any property which could contain asbestos must account for Council's Asbestos Policy.

NOTE: as a guide in Australia, asbestos was gradually phased out of building materials in the 1980s and the supply and installation of asbestos containing goods has been prohibited since 31 December 2003. Yet asbestos legacy materials still exist in many homes, buildings and other assets and infrastructure. It is estimated that one in three Australian homes contains asbestos. In the Shellharbour Local Government Area, it is not known exactly how many homes could contain asbestos, however it is estimated there would be thousands.

Where material containing asbestos is in a non-friable form (that is, cannot be crushed by hand into a powder), undisturbed and painted or otherwise sealed, it may remain safely in place. However, where asbestos containing material is broken, damaged, disturbed or mishandled, fibres can become loose and airborne posing a risk to health. Breathing in dust containing asbestos fibres can cause asbestosis, lung cancer and mesothelioma.

It is often difficult to identify the presence of asbestos by sight. Where a material cannot be identified or is suspected to be asbestos, it is best to assume that the material is asbestos and take appropriate precautions. Further information about asbestos and the health impacts of asbestos can be found in Council's Asbestos Policy.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 23 - CUTTING, FILLING AND RETAINING WALLS

Objectives

1. To ensure the design of development has regard to site conditions so as to minimise excavation or filling of land on individual allotments.
2. To minimise the visual impact of excavation and filling of land and associated stabilising works on the streetscape and amenity of adjoining properties through appropriate design and location of retaining walls on the site.
3. To ensure the excavation or filling of land does not create any adverse impacts from surface and/or stormwater flows.
4. To ensure that retaining walls are structurally sound and are located and/or designed to minimise impact on infrastructure and utilities and adjoining development.
5. To ensure cut/fill activities and retaining walls are contained wholly within the subject lot.

23.1 - Structural and easements

ADVICE

Depth of cut & fill

23.1.1 The maximum depth of excavation on any portion of the allotment is 1 metre. Excavated areas may only exceed 1 metre where the retained sections are located within the confines of the external walls of the building. The depth of the excavation is measured at the cut face.

23.1.2 The maximum depth of filling on any portion of the allotment is 1 metre.

Stabilisation

23.1.3 The maximum grade of cut or fill where there is not a retaining wall or other method of stabilising cut or fill is 45˚(1:1).

23.1.4 Excavation or filling requiring retention must be shored or retained immediately to protect neighbouring development and land from loss of support and to prevent soil erosion.

23.1.5 Retaining walls, or other method of stabilisation, required as part of the development to control potential land stability and/or the structural integrity of adjoining properties must be completed prior to occupation of the development.

Structural integrity

23.1.6 Retaining walls which exceed 600mm in height must be designed by structural engineer.

23.1.7 Construction of retaining walls and associated drainage work along common boundaries must not compromise the structural integrity of any existing retaining wall or structures. All components including footings and aggregate lines must be wholly contained within the property. Where the development includes subdivision, all components of the retaining wall along a proposed common boundary must be wholly contained within one of the proposed lots. To satisfy this requirement, a wall may need to have a minimum side boundary setback of 200mm.

23.1.8 Where in the opinion of Council retaining walls are required as part of a subdivision, detailed plans, including materials, must be lodged with the development application.

Easements

23.1.9 Cut and fill platforms must not extend over a drainage easement.

23.1.10 Excavation associated with a development must not result in the loss of support of a drainage easement.

23.1.11 No part of a retaining wall including footings and aggregate drainage lines must encroach onto a drainage easement or transmission line easement without the approval of the consent authority.

23.2 - Visual

ADVICE

Retaining walls

23.2.1 Retaining walls that are visible to the street or public area must not exceed 1 metre in height.

23.2.2 The height of a retaining wall is the vertical distance between the top of the wall and finished ground level on the lower side of the retaining wall.

23.2.3 Retaining walls that are visible to the street or public area must be designed using materials that do not detract from the streetscape and development, and with a minimum setback from the boundary fence and another retaining wall by at least 1 metre to allow landscaping in the setback areas.

23.3 - Shell Cove - Stage 6

ADVICE

23.3.1 To minimise site impacts associated with steep sites abutting the golf course in Stage 6F Lots 6219, 6310 - 6327, retaining walls that are adjacent to or in close proximity to the golf course must be constructed by the developer and comply with the following design and locational requirements in **Figures 23.1, 23.2 and 23.3**.

Figure 23.1 - Typical Section through side boundary wall between Lots abutting the golf course

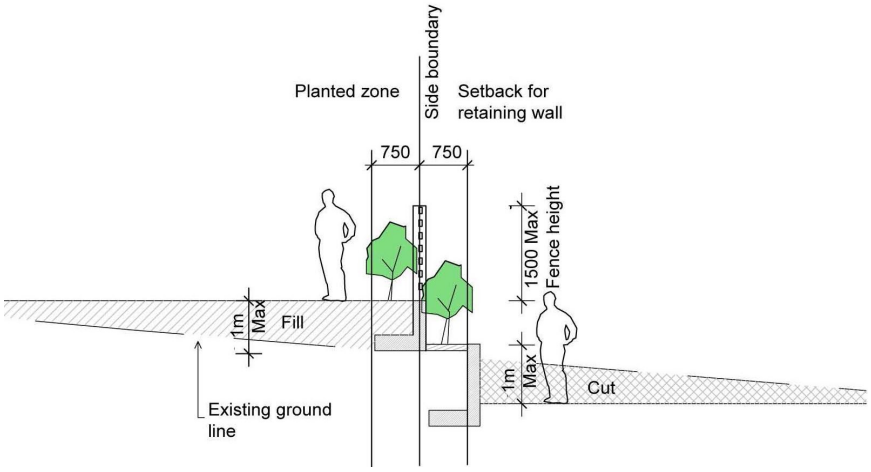


Figure 23.1 above shows that in excavated areas, retaining walls must be setback 750mm from the side boundary to minimise excessively high fences. The height of any retaining wall must be less than 1 metre from natural ground level or finished garden level. Landscaping must be provided to the retaining wall. Retaining walls may be built to the side boundary if retaining fill.

Figure 23.2: Section of rear boundary wall between rear of lots and golf course and elevation of side boundary fence between lots

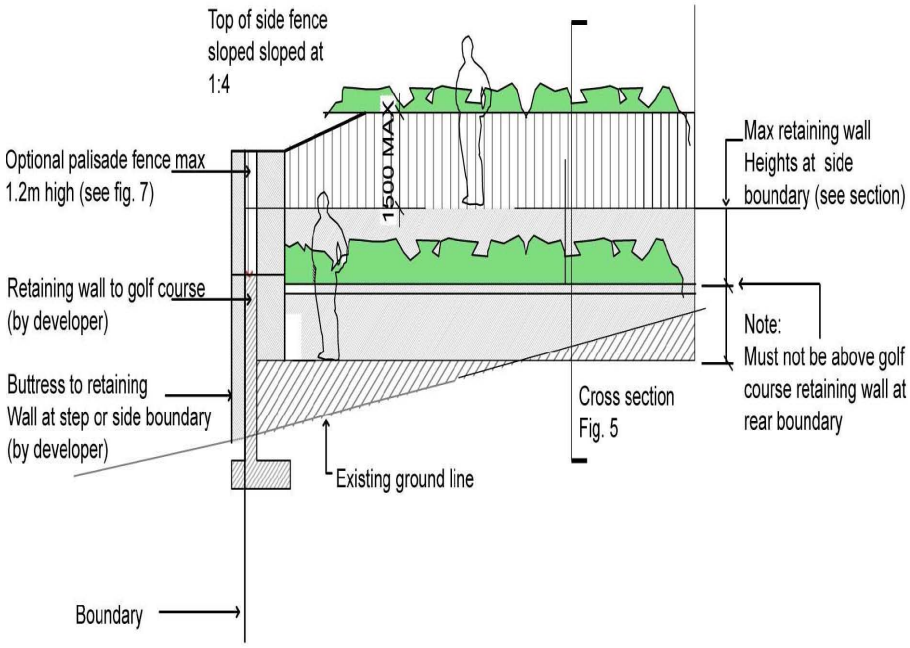
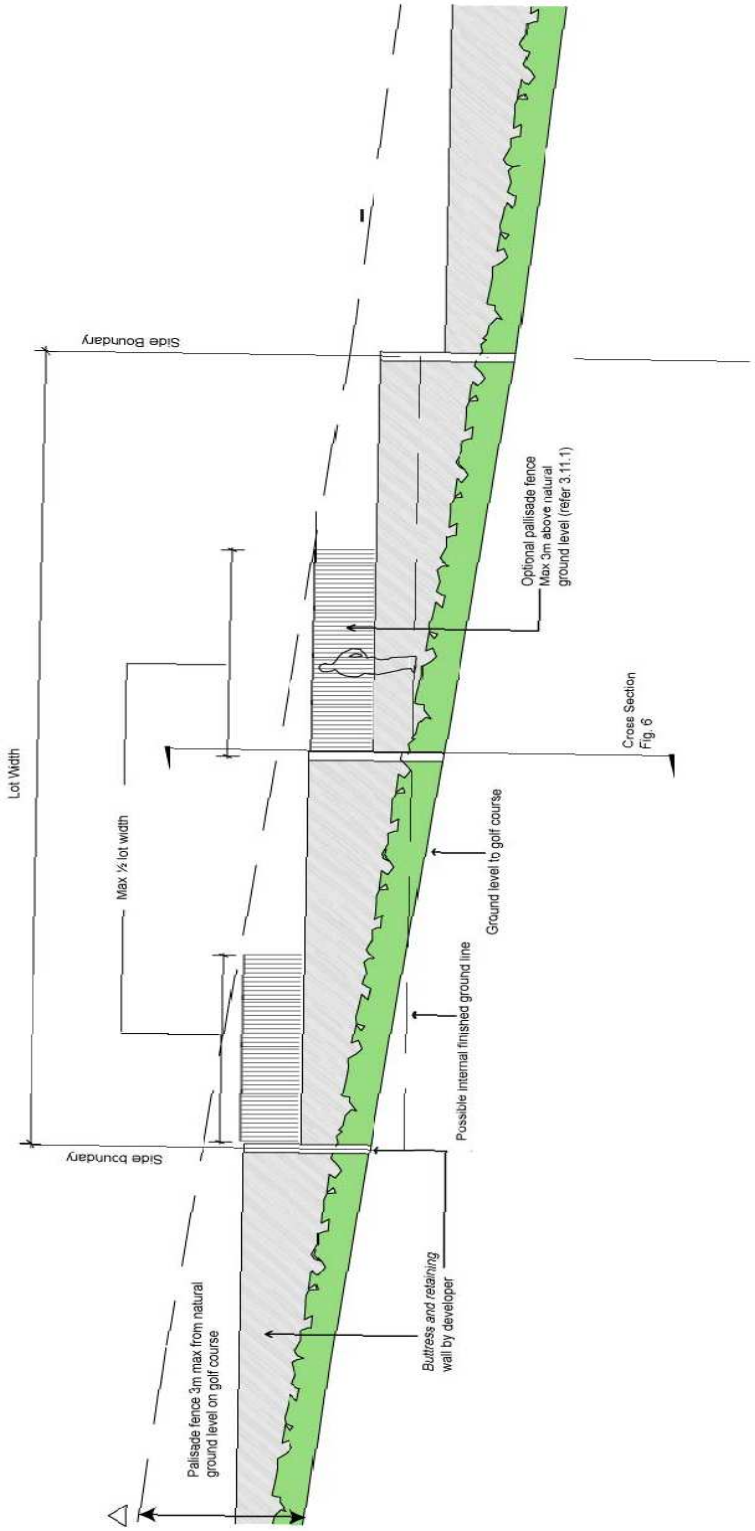


Figure 23.3 - Typical rear boundary elevation to golf course



Figures 23.1, 23.2 and 23.3 above show the indicative retaining wall including the optional metal palisade fencing. The retaining wall must not be altered.

23.4 - Design/cut and fill

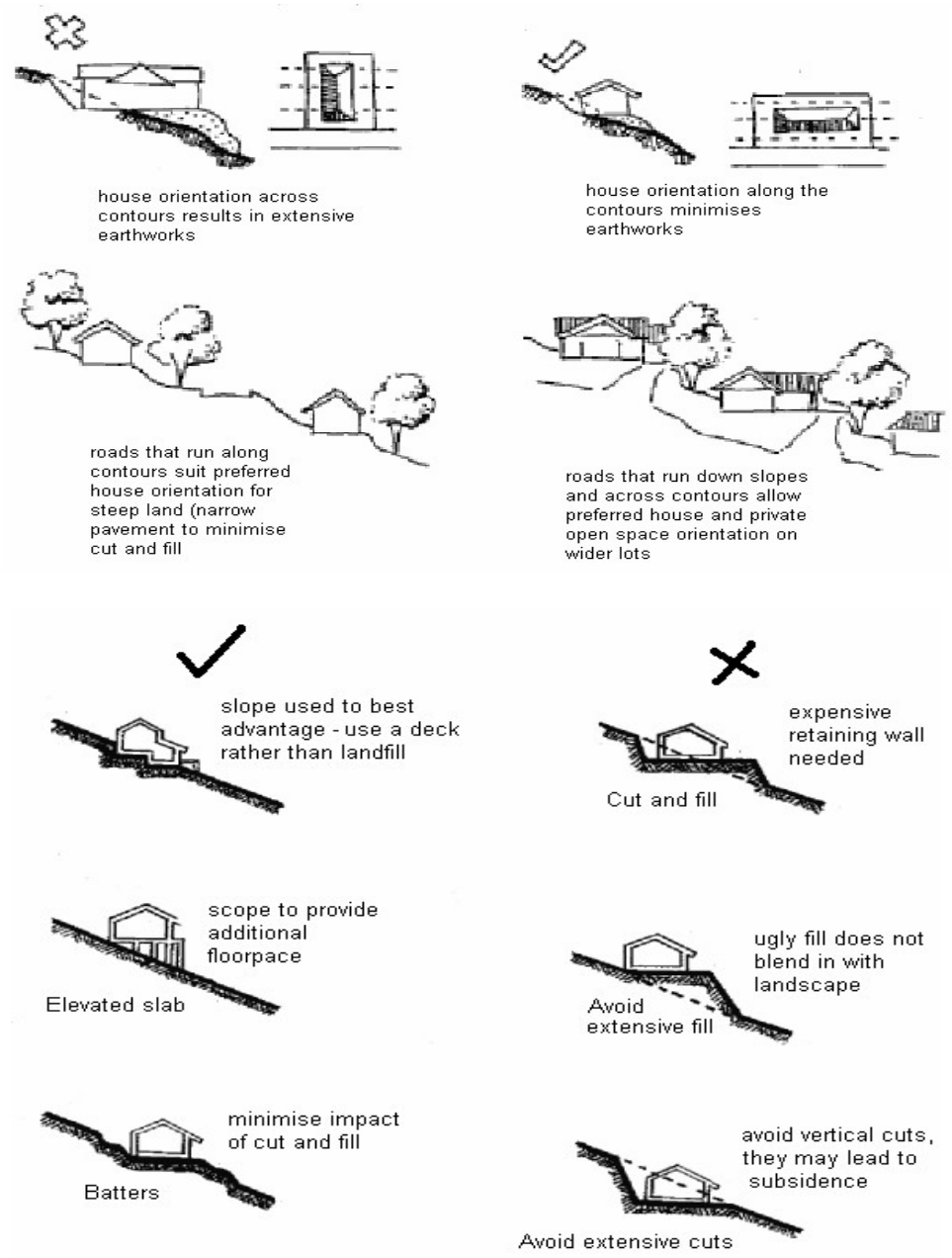
ADVICE

23.4.1 Development should minimise changes to the natural landform of the site. Cut and fill should be minimised by siting the development across the contours, by split level design, elevated slab with deck rather than fill, use of landscaped terraces or batters or small stepped retaining walls rather than a single large retaining wall.

23.4.2 Dwellings should not be designed with large undercroft areas or large blank retaining walls.

Figure 23.4 shows good and bad practice with retaining walls. Split level designed dwellings need to conform with site topography reducing the need for extensive cut and fill.

Figure 23.4 - Good and bad practice with retaining walls



NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 24 - FLOODPLAIN RISK MANAGEMENT

This Chapter and **Appendix 9** applies to all potentially flood prone land in the Shellharbour LGA.

Note that known flood prone land is identified within Council's records and is available from Council by obtaining a Section 149 Certificate. The certificate identifies the flood hazard status of the property as being either affected or not affected. It should be noted that further flood prone land may be identified at any time by Council or a suitably qualified engineer, including during the development application stage. Where it is suspected that the land may be flood prone, the principles outlined in this Chapter and **Appendix 9** should be followed.

There are a number of catchments within the LGA being:

- Lake Illawarra Catchment
- Elliot Lake – Little Lake Catchment
- Horsley Creek Catchment
- Macquarie Rivulet Catchment
- Oakey Creek Catchment
- Lake South Catchment
- Shell Cove Catchment
- Minnamurra River Catchment

Objectives

1. Minimise the potential impact of development and other activity upon waterway corridors.
2. Increase public awareness of the hazard and extent of land affected by all potential floods, including floods greater than the 100 year average recurrence interval (ARI) flood such as the Probable Maximum Flood (PMF) and to ensure essential services and land uses are planned in recognition of all potential floods.
3. Inform the community of Council's Plan for the use and development of flood prone land.
4. Reduce the risk to human life and damage to property caused by flooding through controlling development on land affected by potential floods.
5. Provide detailed controls for the assessment of applications lodged in accordance with the EP&A Act on land affected by potential floods.
6. Provide guidelines, for the use and development of land subject to all potential floods in the floodplain, which reflect the probability of the flood occurring and the potential hazard within different areas.
7. Apply a "merit-based approach" to all development decisions which take account of social, economic and ecological as well as flooding considerations.
8. To control development and activity within each of the individual floodplains within the LGA having regard to the characteristics and level of information available for each of the floodplains.
9. Deal equitably and consistently with applications for development on land affected by potential floods, in accordance with the principles contained in the Floodplain Development Manual as amended, issued by the NSW Government.

10. Restore / rehabilitate the riparian zone by returning as far as practicable the vegetation, geomorphic structure, hydrology and water quality of the original (pre European) condition of the stream.

11. Integrate the management of riparian land with floodplain risk management by assuming the riparian land is fully vegetated when developing flood models for analysis of flood risk.

Advice

24.1 The associated **Appendix 9** provides general provisions for development conceptualisation/assessment relating to all of the catchments and specific provisions relating to individual catchments.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 25 – STORMWATER MANAGEMENT

Objectives

1. To encourage consideration of Ecologically Sustainable Development and Catchment Management while providing requirements for water management when developing a site.
2. To provide requirements and advice to applicants in regard to stormwater management.
3. Maintain and improve water quality within Shellharbour City and to the receiving waters.
4. To ensure no increase (and where reasonable a reduction) in the frequency and adversity of flooding.
5. To ensure public health and safety is maintained.
6. To ensure development is designed having regard to existing or proposed drainage easements.
7. To ensure the structural integrity of existing and proposed structures is maintained.
8. To ensure all development is adequately drained and minimises adverse impacts from surface and/or stormwater flows.
9. To encourage design that allows some on-site infiltration of water.
10. To ensure the risks of flooding are minimised for residential development.

ADVICE

25.1 The associated **Appendix 10** outlines background and technical information necessary to assist in the preparation of development applications so that it addresses:

a. ecologically sustainable development

b. methods to improve water quality of receiving waters

c. ways to minimise adverse impacts on existing public infrastructure can be incorporated into the design of development proposals.

Users of this Chapter and **Appendix 10** of the DCP should refer also to Council's Subdivision Design Code and the DCP **Chapter 24/Appendix 9** on Floodplain risk management. With any inconsistency between the provisions/specifications of the DCP and the Subdivision Design Code, the Code will prevail.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 26 - BUSHFIRE HAZARD

Bushfire hazard needs to be addressed where development is proposed on land mapped as bushfire prone according to Council's Bushfire Prone Map or where Council considers the proposed development a bushfire risk.

The associated **Appendix 11** provides information on the various state policies relating to development and bushfire risk, which needs to be referenced in development assessment and conceptualisation. In this respect Planning for Bushfire Protection is key. Its objectives follow.

Objectives - Planning for Bushfire Protection

1. Afford occupants of any building adequate protection from exposure to a bushfire.
2. Provide for a defendable space to be located around buildings.
3. Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition.
4. Ensure that safe operational access and egress for emergency service personnel and residents is available.
5. Provide for ongoing management and maintenance of bushfire protection measures, including fuel zones in the asset protection zone (APZ).
6. Ensure that utility services are adequate to meet the needs of firefighters (and others assisting in bushfire fighting).

ADVICE

26.1 Refer to the associated **Appendix 11** for advice on development conceptualisation and assessment on bushfire prone land.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 27 - ABORIGINAL HERITAGE



This DCP Chapter provides advice for any development proposal upon a known or potential Aboriginal site containing 'Aboriginal Objects' or a place of Aboriginal cultural heritage significance. It also provides advice on how development on land that is not known to contain Aboriginal objects or archaeological potential, will be assessed.

This Chapter aims to ensure that Aboriginal cultural heritage values, objects and tangible sites or features as well as intangible spiritual and cultural values, are fully and effectively addressed in the development assessment process and afforded appropriate protection or management consistent with legislative requirements.

Council must consider the statutory provisions regarding Aboriginal cultural heritage under the National Parks and Wildlife Act 1974 (NPW Act 1974) and section 79C of the EP&A Act 1979. Part 6 of the NPW Act regulates the process used to determine whether certain actions will or will not harm 'Aboriginal Objects'. The process can be found in the Office of Environment and Heritage (OEH) *Due Diligence Code of Practice for the Protection of 'Aboriginal Objects' in NSW (2010)* (Due Diligence Code of Practice*)*. Under the due diligence process if an activity or development is likely to harm an 'Aboriginal object' or declared 'Aboriginal place', an investigation, assessment and report on the harm must be undertaken by the proponent. The advice in this Chapter has been developed to be consistent with the overarching statutory legislation and the Due Diligence Code of Practice.

The Aboriginal community in the Shellharbour LGA has a strong affinity with their cultural heritage and 'Aboriginal Places' and therefore close consultation with the local Aboriginal community is advisable.

27.1 - What is Aboriginal cultural heritage?

The NSW OEH consultation guidelines provide the following definition of Aboriginal Cultural Heritage:

"Aboriginal cultural heritage consists of places and items that are of significance to Aboriginal people because of their traditions, observances, lore, customs, beliefs and history. It provides evidence of the lives and existence of Aboriginal people before European settlement through to the present.

Aboriginal cultural heritage is dynamic and may comprise physical (tangible) or non-physical (intangible) elements. It includes things made and used in traditional societies, such as stone tools, art sites and ceremonial or burial grounds. It also includes more contemporary and/or historical elements such as old mission buildings, massacre sites and cemeteries. Tangible heritage is situated in a broader cultural landscape and needs to be considered in that context and in a holistic manner.

Aboriginal cultural heritage also relates to the connection and sense of belonging that people have with the landscape and with each other. For Aboriginal people, cultural heritage and cultural practices are part of both the past and the present and that cultural heritage is kept alive and strong by being part of everyday life.

Cultural heritage is not confined to sites. It also includes peoples' memories, story-lines, ceremonies, language and 'ways of doing things' that continue to enrich local knowledge about the cultural landscape. It involves teaching and educating younger generations. It is also about learning and looking after cultural traditions and places, and passing on knowledge. It is enduring but also changing. It is ancient but also new.

Aboriginal cultural heritage provides crucial links between the past and present and therefore represents an essential part of the identities of Aboriginal people and all Australians.

Aboriginal items can consist of human skeletal remains, carved or scarred trees, middens, rock art (paintings & engravings), stone artefacts, raised earth rings grinding grooves, rock shelters, earth Mounds, hearths and stone arrangements"

27.2 - Council's Local Environmental Plans and Cultural Heritage Study

Refer to Council's LEP's (Shellharbour LEP 2013, Shellharbour LEP 2000 and Shellharbour Rural LEP 2004) and also Councils Cultural Heritage Study 2000 (the Study) and the associated Aboriginal Predictive Archaeological Sites Mapping (predictive mapping) **Figure 27.1.** The LEP will provide advice regarding places of Aboriginal heritage significance, when development consent is and is not required, consideration of the effects of a proposed development on Aboriginal heritage significance or objects, and local Aboriginal community notification requirements. The Study and predictive mapping will provide more detailed information pertaining to Aboriginal cultural heritage within the LGA.

27.3 - Levels of Aboriginal Cultural Heritage Assessment

Different levels of Aboriginal Cultural Heritage Assessment (if any) may be required to ascertain the extent of Aboriginal Cultural Heritage when conceptualising and assessing a development application. The objectives and advice in this Chapter firstly provide the requirements for the two levels of Aboriginal Cultural Heritage Assessment and secondly how to determine the applicable level of Aboriginal Cultural Heritage Assessment.

There are two levels of Aboriginal Cultural Heritage Assessment:

- Preliminary Aboriginal Cultural Heritage Investigation (Level 1)
- Aboriginal Cultural Heritage Assessment (Level 2)

Development proponents and assessors need to also consider how land that is not known to contain Aboriginal objects or archaeological potential will be assessed. The appropriate steps for this is to follow the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (DECCW 2010).

27.3.1 A Preliminary Aboriginal Cultural Heritage Investigation (Level 1)

This is undertaken where there is the potential for Aboriginal cultural heritage features or values to occur on the site of a proposed development with the risk that these features or values may be impacted. A level 1 investigation includes the following as a minimum:

- A search of the OEH's online Aboriginal Heritage Information Management System (AHIMS) and obtaining the site cards (detailed records) for any listed sites.

- Consultation with local Aboriginal people or organisations as to any known or potential Aboriginal cultural heritage sites / values of the proposed development area and an appropriate level of assessment (with an advisory/confirmation letter). Advice as to the intensity scale and extent of investigations considered warranted, including the need for any on-site inspections in company with Aboriginal representatives, could be sought during these discussions – as a guide to the appropriate level of detail and intensity for the assessment.

- A desktop assessment, including a review of:
  - Any relevant Aboriginal Heritage Study (The Study 2000) and associated predictive mapping **Figure 27.1.**
  - existing knowledge of the area's Aboriginal cultural heritage sites/values from previous heritage studies or reports for the area and other published works (including any archaeological studies listed on AHIMS); and
  - the landforms, geomorphology and land use history of the site.

A visual inspection or on-ground reconnaissance level (walk-over) survey of the area to detect any readily identifiable Aboriginal cultural heritage sites/objects, determine the likelihood of subsurface materials, and assess the degree/extent of previous significant site disturbance. If suggested during the initial consultation, this walk-over inspection should be preferably be carried out with the involvement of local Aboriginal people or organisations (with a post-inspection advisory/confirmation letter).

- A brief report outlining the assessment activities undertaken and key findings, the outcomes of any site inspections, any Aboriginal cultural heritage sites/objects located and the potential for sub-surface or un-located values, and recommendations as to the requirement for a more detailed level 2 "Aboriginal Cultural Heritage Assessment."

27.3.2 An Aboriginal Cultural Heritage Assessment (Level 2)

This is undertaken for those sites where there are known Aboriginal cultural heritage features or values – specifically where there is a declared Aboriginal Place or known cultural place/landscape, or sites having a proximate to recorded/known Aboriginal cultural heritage site or object.

An Aboriginal Cultural Heritage Assessment (Level 2) is a more detailed and comprehensive assessment to uncover, discover or confirm evidence of Aboriginal Cultural Heritage. The format and level of detail of these more comprehensive assessments will vary, with the size and characteristics of both the site and the proposed development or activity.

An Aboriginal Cultural Heritage Assessment (Level 2) must be undertaken by a suitably qualified or experienced person, with expertise in Aboriginal cultural heritage, and must be consistent with the OEH publications *Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010)* and the Guide to Investigating, Assessing and Reporting on *Aboriginal Cultural Heritage in NSW (2010),* and other applicable guidelines as published by this Agency. Adequate consultation with the Illawarra Aboriginal community will be a critical element in the preparation of an Aboriginal Cultural Heritage Assessment (Level 2).

Aboriginal Cultural Heritage Assessments (Level 2) must include significance and impact assessments. This is a vital step in deciding how a proposed development will affect Aboriginal heritage. In this respect, a Level 2 Assessment must be undertaken in accordance with the OEH's *Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010)*.

The OEH specifically recommends that these requirements also be used where a proponent is required to undertake a cultural heritage assessment to determine the potential impact or harm that a proposed development or activity may have on a site's Aboriginal cultural heritage values. They clearly set out the requirements for consultation with Aboriginal parties when undertaking a cultural heritage assessment to determine the potential impacts that a proposal might hold for Aboriginal heritage sites/values.

A Level 2 assessment may potentially include the disturbance or excavation of parts of a site for heritage/archaeological investigations.

Level 2 assessments must comply with the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010) in relation to archaeological survey, site recording and test excavation. It can also lead to the identification of measures for integrating a site's Aboriginal cultural heritage values into a proposed development – to avoid or mitigate/ameliorate impacts on Aboriginal cultural heritage values. Such outcomes may avoid the legislative obligation for a developer to prepare (and a Council to require, as part of the development application package) an Aboriginal Heritage Impact Permit (AHIP) under section 90 of the NPW Act 1974. A Level 2 Assessment need not always result in, or warrant, an AHIP application – with this depending on the circumstances of each development proposal and the heritage values of a proposed site.

The final Aboriginal Cultural Heritage Assessment report must also be part of the supporting documentation for the subject development application.

However, where impacts or harm to Aboriginal cultural heritage values cannot be avoided, the Aboriginal Cultural Heritage Assessment and the consultation with Aboriginal people or groups central to its preparation, will help inform the OEH's decision making in regard to an AHIP application. In these cases, the application is subject to the integrated development provisions of section 91 of the EP&A Act. OEH requires a copy of the relevant development consent to be supplied with AHIP applications. This is listed in section 3 of Applying for an Aboriginal Heritage Impact Permit: Guide for Applicants (OEH 2011).
Alternatively, a proponent may seek an AHIP directly from the OEH separate to the development application process and lodge this, if approved, as part of the supporting documentation for their development application.

OEH granting of an AHIP does not obligate a Council to approve the associated development application, with a Council still able to reject or specify approval conditions for a development application on the basis of Aboriginal cultural heritage values (or other heritage matters).

Where Consultation Requirements for Proponents 2010 (DECCW 2010) has been conducted for the purposes of an AHIP application, provided there have been no breaks in consultation of longer than 6 months. If there are breaks of over 6 months, the consultation is generally not considered to have been continuous and AHIP applicants are required to restart the consultation process.

27.3.4 Exemptions and Exclusions for Level 1 and Level 2 Assessments

On a case by case basis, some circumstances may provide a development application with an exemption or exclusion to full consideration under the assessment process. Please note: None of the following exempts the proponent being required to do due diligence assessments (as per Level 1 assessment) as the results of AHIMS searches may only be relied upon for 12 months.

Instances where an exemption or exclusion to a full consideration under the assessment process may apply include:

- Where a detailed Aboriginal cultural heritage assessment or archaeological investigation of an acceptable standard and including the required level of Aboriginal community consultation – has been undertaken over the entire proposed site of a development application within the last 10 years (such as at the rezoning stage of a major subdivision).
- Declared Part3A project (under the EP&A Act 1979, now repealed), where the Director Generals requirements address the AHIP provisions of the NPW Act 1974 and other Aboriginal cultural heritage management considerations (excluding instances of staged approval or concept plan endorsement only, where Part 4 determinations under the EP&A Act 1979 have been handed back to local councils.)
- Where Consultation Requirements for Proponents 2010 (DECCW 2010) has been conducted for the purposes of an AHIP application, provided there have been no breaks in consultation of longer than 6 months. If there are breaks of over 6 months, the consultation is generally not considered to have been continuous and AHIP applicants are required to restart the consultation process.

27.4 - Determination of levels of assessment

Objectives

1. To provide detailed controls and guidelines intended to assist in the identification, protection and conservation of Aboriginal cultural heritage sites and values in the SCC area for the benefit of its citizens, the community generally and for future generations.
2. To increase proponent's awareness of Aboriginal cultural heritage matters and promote the increased identification and recognition of Aboriginal cultural heritage sites and values in the planning and development process.
3. To assist in the implementation of Council's LEPs and The Study 2000.
4. To provide potential proponents and the wider community with clear and accessible information on Council's requirements, and other legislative requirements, for the conservation of Aboriginal cultural heritage sites and values.
5. To promote and encourage appropriate and sympathetic site design and development solutions for areas having known, or potential, Aboriginal cultural heritage sites and values.
6. To increase community awareness and appreciation of the Aboriginal cultural heritage sites and values of the SCC area.

ADVICE

27.4.1 **Preliminary Aboriginal Cultural Heritage Investigation (Level 1)**

Council will require a **Preliminary Aboriginal Cultural Heritage Investigation (Level 1)** to be undertaken for a development proposal if the answer to any of the following questions (a, b, c & d) is **YES**. The findings and outcomes of a Preliminary Aboriginal Cultural Heritage Investigation will help determine if a more detailed Aboriginal Cultural Heritage Assessment (Level 2) is required.

a. Is the proposal located within an environmentally sensitive area, as defined by; Shellharbour LEP 2013, Shellharbour LEP 2000 or Shellharbour Rural LEP 2004?

Answering a:

Refer to the relevant sections of the Shellharbour LEP 2013, LEP 2000 or Shellharbour Rural LEP 2004, identifying environmentally sensitive areas – including those situations where exempt and complying development provisions do not apply.

b. Does the proposed development site contain mature trees, that may be over 150 years old and so have the potential for Aboriginal scarring (including living trees, standing dead trees, stumps or stags, fallen trees and logs)?

Answering b:

Conduct an on-site inspection of the proposed development site to identify any mature trees (possibly over 150 years old), applying a conservative approach in identifying mature trees and including both living and dead trees (including stumps, stags and fallen logs).

Provide supporting evidence (such as photographic evidence, records of past land clearing, prior land use data and land use/local histories, or a specialist/arborist report if warranted) to demonstrate the presence, or absence, of mature trees.

c. Does the proposed development site contain any of the following small scale landscape features that may potentially hold Aboriginal cultural heritage sites/objects?

i. A riparian corridor 200m wide on each side of permanent or ephemeral creeks or watercourses (including waterways subsequently modified by post-settlement activity)

ii. sandstone outcrops adjacent to waterways/watercourses

iii. exposed sandstone platforms or relatively level sandstone outcrops (including platforms and outcrops that may have been buried or covered due to post-contact land uses)

iv. rock overhangs/shelters over 1mhigh (especially with relatively level and/or dry floors)

v. areas of undisturbed native vegetation in excess of 100m^2 or covering 10% or more of a site (whichever is the greater for the site in question)

vi. spurs, ridgelines, ridge tops and high points or knolls

vii. cliffs, including areas above or below cliff lines

viii. headlands and sand dune systems?

Answering question c:

Council may have more detailed information and examples of the listed small scale landscape features having the potential to contain Aboriginal cultural heritage sites/objects;

Conduct an on-site inspection of the proposed development site to identify the presence of any small scale landscape features that may potentially hold Aboriginal cultural heritage sites/objects;

Provide supporting evidence (such as photographic evidence, survey plans, low-level aerial photography, etc) to demonstrate the presence or absence of any of the listed small scale landscape features.

d. Is the proposal within an area assessed as being of moderate to high archaeological sensitivity as indicated in the Predictive Mapping? (**see Figure 27.1**)

Answering this question:

Council may hold further information regarding these "sensitive" landscape settings or locations of moderate to high archaeological potential – including plans of the location and extent of these areas, or alternative information to use in answering this question.

27.4.2 **Aboriginal Cultural Heritage Assessment (Level 2 Assessment)**

Council will require an **Aboriginal Cultural Heritage Assessment (Level 2 Assessment)** to be undertaken for a development proposal if the answer to any of the following questions (a, b, c) is **YES**.

a. Is the proposed development site part of, or is it within 100m of, an Aboriginal Place as declared under the NPW Act 1974 or within a location of recognised Aboriginal cultural/spiritual significance?

Answering a:

Refer to the OEH's on-line *NSW Atlas of Aboriginal Places* which includes location information, gazettal notices, maps, photographs, and an explanation of the significance of each declared Aboriginal Place in NSW.

Refer to Council for further information regarding declared Aboriginal Places and any other locations recognised as being of Aboriginal cultural/spiritual significance in the SCC area.

b. Does the proposed development site contain a known Aboriginal site or object, as recorded by the OEH in the Aboriginal Heritage Information Management System (AHIMS) or known to Council?

c. Is the proposed development site within 100m of a known Aboriginal site or object (other than "isolated finds", where a 50m proximity threshold will apply for the purposes of this question), as recorded by the OEH in the AHIMS or known to Council?

Answering b & c:

Search the OEH's on-line AHIMS. The AHIMS Web Services allows on-line users to search information about recorded Aboriginal objects/sites by Lot and DP Number, or using eastings and northings or latitude and longitude, as well as using map-based interrogation. Buffer zones can be requested around a search area – at 50m, 200m or 1km. A "basic search", at no cost, will return a report advising if any recorded Aboriginal objects/sites (and declared Aboriginal Places) within the search area, and an "extensive search" is required to detail any recorded Aboriginal objects/sites.

Refer to Council for information regarding other known Aboriginal site or object in the Shellharbour Council area that may not be listed on the AHIMS data base (but are still protected under the NPW Act 1974).

27.5 - Previously disturbed sites

ADVICE

27.5.1 An Aboriginal cultural heritage investigation (Level 1) or assessment (Level 2) is not required for proposed development sites that are completely within any areas mapped by Council as totally or grossly disturbed landscapes (and do not contain a declared Aboriginal Place or known Aboriginal site or object as described above).

a. Proponents are responsible for ensuring that they have made a reasonable assessment of the potential for Aboriginal objects to be impacted by the proposed works in relation to the strict liability provisions of Section 86 of the NPW Act 1974.

b. Refer to Council and The Study 2000 and predictive mapping **Figure 27.1** for information and mapping regarding those areas considered to be totally or grossly disturbed landscapes.

c. Refer to prior land use data and reliable land use or local histories to identify disruptive land uses, but apply a conservative approach in identifying totally or grossly disturbed landscapes that have no potential to retain Aboriginal heritage materials.

d. An Aboriginal cultural heritage investigation (Level 1) or assessment (Level 2) is not required for proposed development sites (that do not contain a declared Aboriginal Place or known Aboriginal site or object as described above) where it can be demonstrated that a site has been substantially disturbed over an equal or greater area, and to an equal or greater depth and/or severity, than would result from the proposed development or activity.

e. Proponents must provide supporting evidence to trigger this "substantial disturbance" – such as prior site plans/reports, photographs, or contemporary reports providing an assessment of the degree of site disturbance.

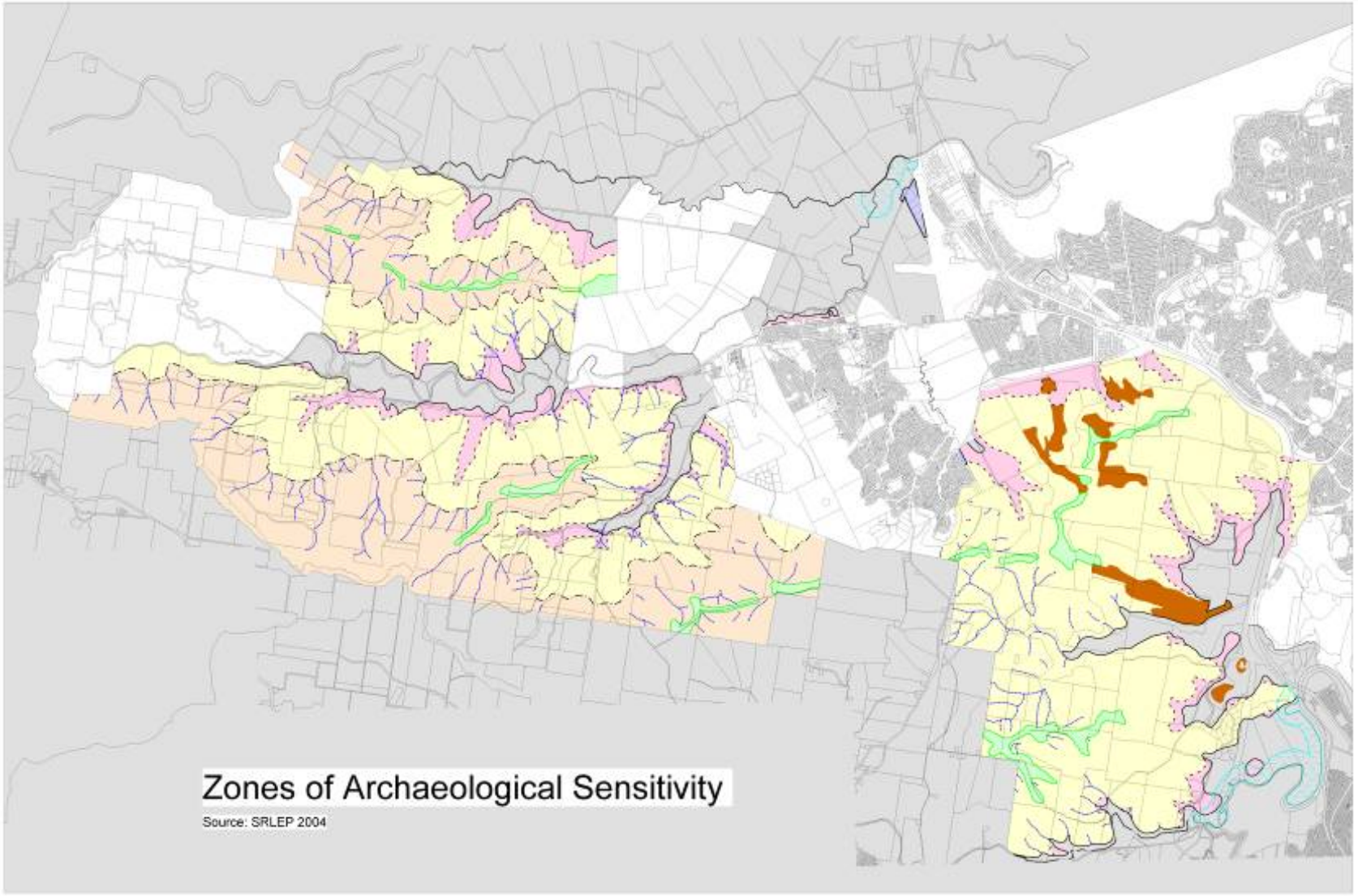
f. Notwithstanding advice 1 to 5 above, if Aboriginal objects are identified during works in an area where objects were not anticipated, the works must stop and the proponent must contact OEH

27.6 - Outcomes of Assessment

ADVICE

Applicants must demonstrate how the recommendations resulting from either the Level 1 Investigation, Level 2 Assessment or Due Diligence process are to be appropriately addressed in the proposed development. Prior to any ground disturbance and/or commencement of change of use.

Figure 27.1 - Shellharbour City Council Aboriginal Heritage Study (2000) Zones of Archaeological Sensitivity – Predictive Aboriginal Archaelogical Sites Mapping



Key	Zone Description	Areas of Archaeological Sensitivity	Open Artefact Scatters	Middens	Rock Shelter Sites	Grinding Grooves	Burials
	Grossly disturbed landsurface	none	nil	nil	nil	nil	nil
	Urban landscape	remnant undisturbed subsurface deposits within littoral zone	low	generally low but low to moderate on low gradient sedimentary contexts within littoral zone	nil	nil	generally low but low to moderate on low gradient sedimentary contexts, especially within littoral zones
	Littoral zone (coastal and estuarine) 200m from bank/shore	relatively undisturbed locally elevated generally level landforms, especially when close to a freshwater source, adjacent to rock platforms, or an a relatively deep sedimentary deposit	moderate, often in association with midden deposits	moderate to high	generally low, but low to moderate along unsurveyed coastal scarps	low	moderate especially in or nea middens, near creek or estua mouths, and on landforms wit relatively deep sedimentary deposit
	Valley floor alluvium and estuarine infill deposits	locally elevated generally level landforms such as terrace edges, spurline crests, remnant dunes, the banks of drainage lines an wetland basins	moderate, many sites may be entirely subsurface	generally low, but moderate to high within littoral zone	nil	nil	low to moderate
	Basal valley slopes and associated low spurlines	generally level spurline crests and low rises, locally elevated and/or generally level ground adjacent to drainage lines	moderate	low	nil	low except for creeks with identified potential (see grinding groove zone)	generally low, but low to moderate in valley floor contexts
	Coastal plain slopes and low to mid valley slopes fringing the coastal plain	generally level ground on ridge and spurline crests and benches, especially locally elevated landforms adjacent to freshwater	generally low, but moderate on sensitive landforms	nil	low, but sites may rarely occur on latite scarps or on isolated sandstone tors where this zone borders the Illawarra escarpment zone	low, except for creeks with identified potential (see grinding groove zone)	low
	Illawarra escarpment mid to upper valley slopes	- generally level ground on ridge and spurline crest and benches, especially locally elevated landforms adjacent to freshwater. - all rockshelters >1m high with relatively dry and level sediment floors. - relatively level sandstone	generally low, but moderate on sensitive landforms	nil but minimal quantities of shell may occur in shelter deposits	moderate to high in areas of sandstone escarpment or tors	moderate on bedrock exposures of sandstone in drainage lines and rock platforms	generally low, but low to moderate in rock shelters

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 28 - EUROPEAN HERITAGE

Objectives

1. Facilitate the conservation of heritage items.
2. Assist both applicants and Council in the assessment of proposed development of or near heritage items.
3. Assist both applicants and Council in the assessment of proposed development in heritage conservation areas.

28.1 - General advice

28.1.1 Heritage items and conservation areas are identified in Council's local environmental plans. They also contain the primary objectives and requirements for development of or near heritage items.

28.1.2 Before granting development consent Council may require a statement of heritage impact or a conservation management plan to be prepared.

28.1.3 A statement of heritage impact assesses the extent to which the carrying out of development would affect the heritage significance of the item or conservation area.

28.1.4 A conservation management plan identifies measures to ensure the long term conservation of the item or conservation area.

28.1.5 Each heritage item and conservation area has specific information as contained in the State Heritage Inventory (SHI) database. Council has this information readily available in the form of a SHI Sheet which can be requested from Council or obtained from our website.

28.1.6 The SHI sheets should form the basis of any statement of heritage impact or heritage conservation plan.

28.1.7 Council has a heritage advisor who is able to assist with any initial enquiries you have in relation to proposed development and preparation of statements and plans.

28.1.8 The remainder of this Chapter contains objectives and advice relating to the preparation of development applications (including the development plans, and supporting information) for heritage items or development in the vicinity of a heritage item. There are two tiers of objectives and advice, being "Context" and "General".

28.1.9 Applicants should firstly identify which "context" the heritage item belongs to according to which suburb it is in and address the corresponding objectives and advice. Applicants then need to address the "general" objectives and advice relating to the development type, for example "dwelling houses" or "commercial development".

28.2 - Context advice - rural landscape (suburbs of Calderwood, Tongarra, Yellow Rock, Macquarie Pass, Dunmore, Croom, Tullimbar, North Macquarie)

Objectives

1. To maintain scenic quality and manage visual impact.
2. To protect the heritage curtilage around heritage items.
3. To protect significant views to and from the heritage item.
4. To ensure that new structures are designed and located so they do not adversely impact the heritage significance of an item or its setting.
5. To design and locate new housing in the vicinity of heritage items to limit visual impact on item.
6. To conserve significant buildings, structures, and trees as visual landmarks.
7. To conserve the significant fabric and finishes of heritage items.
8. To reinforce traditional plantings in grounds of heritage items.
9. To retain the former Minnamurra school group in its setting.
10. To allow interpretation of important heritage values.

Heritage Item types include:

- Farmhouse group
- Houses, cottage, bungalows-Victorian, Federation, Inter-war
- Silos as landmarks
- Sheds and barns
- Single tree or groups of trees, often indicating location of former homestead
- Avenue of trees or row of trees
- School house
- Cemetery.

ADVICE

Development of heritage items

28.2.1 Development Applications for new structures or buildings must be accompanied by a heritage impact statement that includes an analysis of the heritage curtilage and a visual assessment.

28.2.2 No new structures or buildings are to be erected in the primary view catchment of the item. The primary view catchment is the principal view of the heritage item from the public domain unless it has been defined by a visual assessment and curtilage study that has been approved by Council. See the **Figures 28.1 and 28.2** in this Chapter.

28.2.3 New buildings or structures are not to be located in the saddle between two heritage items.

28.2.4 New buildings and structures are to be located so that they are not visually intrusive.

28.2.5 New buildings or structures must not be higher than the existing heritage item. Where there are a number of items on one property the new structure must be no higher than the lowest building.

28.2.6 New roads or driveways must follow the contours of the landscape with minimal cut and fill (rather than intersecting the contour).

28.2.7 Earthworks including cut and/or fill must be minimised in order to retain the natural contours of the lot.

28.2.8 New farm fences must be unpainted timber and steel post and wire. Painted post and rail fences are not permitted. For domestic fences around the homestead refer to general development advice.

28.2.9 Additions to farm buildings must follow the advice in general development advice.

28.2.10 If subdivision of the land is proposed, a curtilage study and visual assessment is required to be submitted with the development application.

28.2.11 Landscape design must ensure that existing significant trees are maintained as specimen trees.

28.2.12 Landscaping and development around trees must follow the advice in General development controls.

28.2.13 All dry stone walls must be retained. For dry stone wall advice refer to in General development advice.

28.2.14 Solar collectors, hot water systems, air conditioning units, satellite dishes, water tanks and other similar structures are to be located at the rear. They are not to be visible within the primary view catchment. When they are to be located within a farm group they must be placed in a location where they are not visually intrusive.

Development in the vicinity of heritage items

28.2.15 If a new building or subdivision is proposed for lots adjacent to a heritage item within the visual catchment of that item, then a heritage impact assessment will be required with the development application.

28.2.16 New buildings and structures are to be located so that they do not visually intrude into the setting of the heritage item.

28.2.17 New development must be located below the floor level of the heritage item, the natural ground ridge line and outside the primary view catchment of the heritage item (see **Figures 28.1 and 28.2** in this Chapter).

28.2.18 The roof form of new development must be modulated to reduce its visual bulk.

28.2.19 Roof forms must be pitched where they are within the visual catchment of a heritage item.

28.2.20 Split level forms are to be used to minimise cut and fill earthworks and large building platforms.

28.2.21 Building colours must not include white, black, cream, beige or primary colours or any colours close to these tones. Mid tone colours that are neutral in their rural setting are recommended.

Figure 28.1 - New development to be located outside the primary view catchment

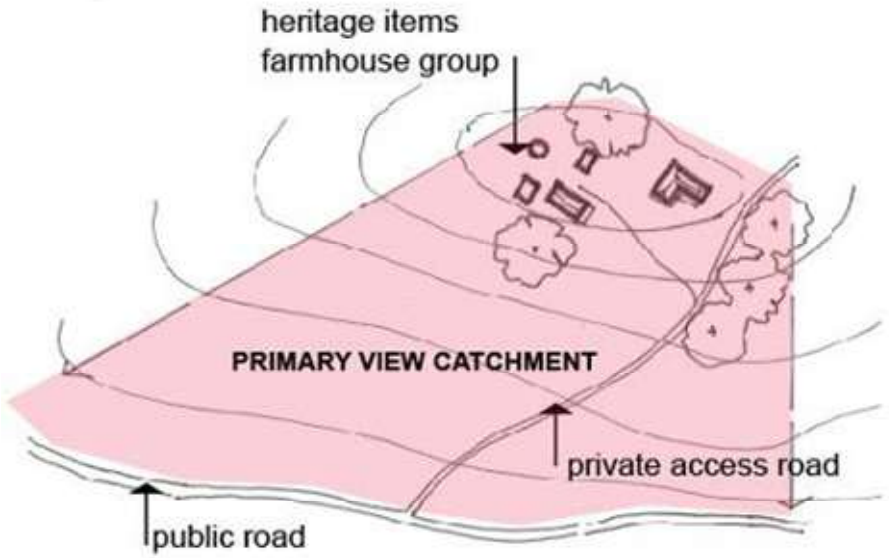
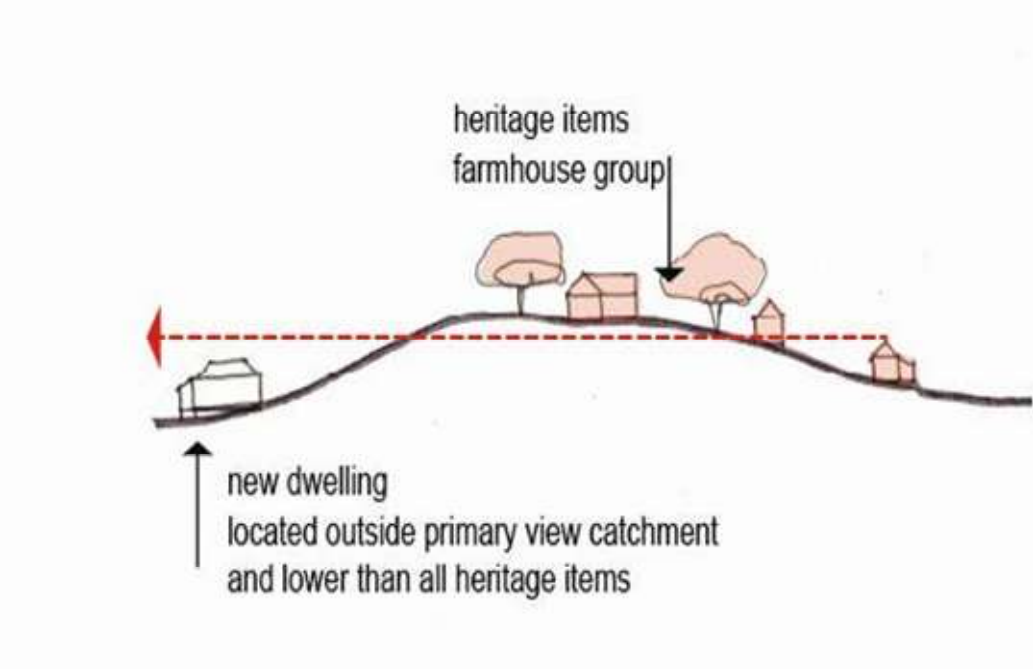


Figure 28.2 - New development to be located below the elevation of the lowest heritage item



28.3 - Context advice - Albion Park

Objectives

1. To conserve the diversity of built form and scale found in a rural town.
2. To reinforce the intersection of the east-west and north-south transport linkages at Terry Street and Tongarra Road.
3. To maintain the diversity of uses including commercial, community, residential and civic functions found in a rural town.
4. To support adaptive re-use of heritage buildings for community, civic or commercial activity.
5. To provide heritage interpretation of the historic commercial and governmental development of the town centre.
6. To minimise the adverse impacts of height and bulk of development on an adjacent heritage item.
7. To ensure that significant tree plantings are retained on both public and private land.

Heritage Item types include:

- commercial buildings/shops
- community and service buildings
- school
- service station
- house/cottage/ bungalow
- church
- tree(s)
- showground
- remnant rural house in suburban setting
- butter factory
- cemetery.

ADVICE

Development of heritage items

28.3.1 Any proposal for re-use of a former public or civic building must include a commercial or community use or function that allows public access.

28.3.2 Any proposal for re-use of a heritage building must ensure conservation of its heritage significance.

28.3.3 Any proposal for re-use of a former public or civic building on either side of Tongarra Road between the Albion Park Court & Police Complex, 94 Tongarra Road, Albion Park (I007) and the corner at Terry Street must include interpretation of the buildings previous role in the commercial and governmental development history of the town.

28.3.4 Any additions to a former public or civic building on either side of Tongarra Road between the Albion Park Court & Police Complex (94 Tongarra Road) and the corner at Terry Street must be located at the rear of the heritage building.

28.3.5 Adaptive re-use of heritage items must retain significant fabric.

Development in the vicinity of heritage items

28.3.6 Development adjacent to a heritage item must not exceed two (2) storeys in height.

28.3.7 Development adjacent to a single storey heritage item must have:

a. a ground level setback no less than the setback of the heritage item

b. an upper level setback of at least 4.5m from the ground level building façade.

28.3.8 Development on the north side of Tongarra Road between 136 Tongarra Road (corner site) and 120 Tongarra Road must be:

a. built to the street boundary

b. include a cantilever box awning over the footpath that is 2.7-3.0 m deep and between 3.0m and 3.6m above footpath level.

28.3.9 Development on the south side of Tongarra Road between Bushfire Control Centre, 127 Tongarra Road, Albion Park (I203) and 141 Tongarra Road (corner site) must be:

a. built to the street boundary at street level and second level

b. setback a minimum of 1.8m from the side boundary.

28.3.10 Development adjacent to Bushfire Control Centre, 127 Tongarra Road, Albion Park (I203) must retain views from the street to the rear Edwardian part of the building.

28.3.11 Development on sites adjacent to former ES&A Bank, 148 Tongarra Road, Albion Park (I010) must be built to the street boundary.

28.3.12 Development at Tulkeroo and Albion Park Butter Factory, 23 Calderwood Road, Albion Park (I001) must retain the visual relationship between the buildings and the Macquarie Rivulet.

28.4 - Context advice - Albion Park Rail

Objectives

1. To maintain the relationship of industrial and transport heritage buildings to the transport corridor
2. To ensure the continuing use of the Albion Park Rail Station as a rail stop.
3. To maintain the small scale of development around the Albion Park Rail Station that reflects the original growth of a small town centre around a small country rail stop.
4. To encourage heritage interpretation related to transport and industrial themes.
5. To encourage re-use within the original layout and fabric of former industrial and transport buildings.
6. To discourage additions to industrial or transport heritage items.
7. To protect the historic associations of Albion Park Airport with the Second World War.
8. To facilitate the best conservation outcome for Yovelton Farmhouse and Silo, 2 Wilga Close, Albion Park Rail (I019).

Heritage Item types include:

1. transport infrastructure
2. dairy co-op
3. farmhouse (group) isolated from original setting
4. farmhouse (group)
5. first butter factory

ADVICE

Development of heritage item

28.4.1 Development must retain the significant fabric and form of the heritage item.

28.4.2 For sites on the rail corridor, new infrastructure for vehicle access and parking must not compromise the original relationship with the rail line.

28.4.3 A proposed use must be compatible with the existing form and layout of the heritage item.

28.4.4 Additions to an industrial or transport heritage building must be restricted to small scale structures providing essential amenities that cannot be accommodated in the original fabric (such as toilets or kitchens).

28.4.5 Development in the vicinity of a heritage item must not compromise its visual prominence or its visible relationship to the rail.

28.4.6 Development in the vicinity of a heritage item on the rail corridor must be small scale to reflect the original small town centre that developed around the station.

28.4.7 The form of the original farmhouse at Yovelton Farmhouse and Silo, 2 Wilga Close, Albion Park Rail (I019) must be conserved.

28.5 - Context advice - waterfront suburbs (Shellharbour outside CBD, Barrack Point, Oak Flats, Lake Illawarra, Warilla)

Objectives

1. To as far as possible, conserve the fabric and form of dwellings listed as heritage items.
2. To conserve the setting of heritage items.
3. To retain significant relationships of waterfront dwellings with the lake or sea.
4. To ensure the height, scale and form of development adjoining heritage items does not adversely affect the significance of the heritage item.
5. To allow for interpretation of heritage items.
6. To retain views through to the lake or the sea.
7. To encourage view sharing.
8. To ensure the Oak Flats subdivision pattern is retained, together with significant views to the Lake from the streets of the subdivision.
9. To conserve the remains of the Illawarra House Jetty.
10. To ensure the setting of Shellharbour cemetery is conserved.

11. To ensure traditional plantings in parks and reserves are retained.
12. To preserve the group significance of rows of trees.

Heritage Item types include:

- Federation cottage
- Queenslander elevated cottage
- P&O House
- Old English House
- Bungalow
- Norfolk Island Pine trees
- Row of Brush Box trees
- Shellharbour cemetery
- Park Pines
- Shop
- Oak flats subdivision
- Jetty remains.

ADVICE

Development of heritage items

28.5.1 Two storey additions to the principal building form of single storey dwellings are not encouraged.

28.5.2 Two storey additions may be acceptable where they are a pavilion connected to the main building by a low link structure and are constructed of lightweight materials.

28.5.3 Additions to dwellings must not overwhelm the original significant dwelling. The height and bulk of additions and alterations must be in keeping with the character of the significant dwelling.

28.5.4 Where the street front setback of the dwelling is greater than 15 metres and is not aligned with the building alignment of adjoining houses, then new structures may be located in front of the dwelling provided that the new structure:

a. is no greater than the height of the significant dwelling

b. is located to the side of the front yard allowing a view from the street to at least 20% of the street front elevation of the dwelling

c. retains the setbacks of the adjoining buildings or the average set back of the two if they are inconsistent.

28.5.5 Where dwellings are located adjacent to the waterfront, any new structures propo sed to be located in the zone between the dwelling and the water must enable a view of at least 20% of the waterfront elevation of the property from the waterfront and be located close to one side boundary.

28.5.6 Fences for waterfront and street front must follow the general development advice.

28.5.7 The subdivision pattern of Oak Flats Subdivision and Road Layout, Oak Flats (I033) must be retained together with its significant views to Lake Illawarra.

28.5.8 The fabric of the Illawarra House Jetty Relic, 45 The Esplanade, Oak Flats (I193) must be retained in-situ.

28.5.9 Where significant trees need to be removed due to ill health, they must be replaced with the same species or under the advice of a heritage landscape specialist. If a group of trees is to be removed due to infection, then they should be replaced by a tree with a similar appearance. Further advice for trees are located under the heading, General development advice - significant trees.

28.5.10 Shellharbour Cemetery, 441-443 Shellharbour Road, Shellharbour (I046) is to be conserved.

Development in the vicinity of heritage items

28.5.11 New development adjoining significant holiday dwellings must be of a scale and form that does not overwhelm the scale of the holiday dwelling.

28.5.12 Two storey elements of buildings adjacent to single storey heritage dwellings must be located a minimum of 2 metres from the boundary adjoining the heritage property.

28.5.13 New development adjacent to heritage items must ensure that views to the heritage item are not obstructed.

28.5.14 New development adjacent to heritage items must retain views to the waterfront from the public domain.

28.5.15 New development adjacent to waterfront heritage items must be setback to ensure the view from the waterfront to the heritage item is not obscured.

28.6 - Context advice - other suburbs (Barrack Heights, Blackbutt, Flinders)

Objectives

1. To retain significant trees.
2. To ensure Blackbutt Forest is conserved.
3. To ensure the surviving cultural landscape of Wentworth Cottage Site, Trees and Relics, Wentworth Cottage Park, Pioneer Drive, Blackbutt (I034) is retained.
4. To ensure the surviving archaeology in Wentworth Cottage Park is conserved.
5. To retain the historic trees and significant features in Wentworth Cottage Park.
6. To retain significant historic views from Wentworth Cottage Park.
7. To prevent erosion of the setting of significant trees.
8. To ensure the height, scale and form of adjoining development does not adversely impact the setting of the trees or cultural landscape.
9. To allow the significance of the place to be understood through interpretation.
10. To ensure that interpretation does not compromise the heritage values of the place.

Heritage Item types include:

- Fig trees, Hoop Pines
- Blackbutt forest
- Park
- Archaeology
- Memorial.

ADVICE

28.6.1 All trees of significance must be retained. Refer to General development advice - significant trees, in this Chapter.

28.6.2 No further subdivision of Blackbutt Forest, Blackbutt Reserve, Off Shellharbour Road, Barrack Heights (I059) is permitted.

28.6.3 Blackbutt Forest frontages to Wattle Road and Shellharbour Road must retain the existing uninterrupted view of the forest.

28.6.4 A conservation management plan is required prior to any alteration of Wentworth Cottage Site, Trees and Relics, Wentworth Cottage Park, Pioneer Drive, Blackbutt (I034); whether for the location of picnic facilities, interpretation, fencing, removal of trees or other activities.

28.6.5 The archaeological landscape of Wentworth Cottage Park Site must be retained and conserved.

28.6.6 Placement of new structures near significant trees must consider the setting of the trees and the views to and from the trees.

28.6.7 New structures on lots which have significant trees will require a statement of heritage impact as part of any development application.

28.6.8 Development opposite Wentworth Cottage Park on Pioneer Drive and in Springdale Close must ensure the view to the rural setting of Signal Hill, The Hill Farm Complex, 113-119 Dunsters Lane, Croom (I022) is uninterrupted from Wentworth Cottage Park.

28.7 - General development advice - policy for heritage items

Objectives

1. To conserve heritage items, including significant fabric, their curtilage and settings.
2. To ensure new development does not have an adverse impact upon the heritage significance of heritage items.
3. To ensure there is a sympathetic relationship between new built form and the historic streetscape or historic setting in which a heritage item is located.
4. To ensure the heritage item retains its prominence and visual distinctiveness.
5. To ensure that the bulk and scale of additions do not overwhelm the significant building.
6. To ensure that additions are distinguishable from the original.
7. To retain the significant fabric and finishes of the heritage item.
8. To ensure the retention of existing heights of heritage items.
9. To restore and reconstruct missing elements where sufficient information is available.
10. To ensure that development applications for heritage items are supported by adequate documentation.
11. To ensure that archival records are made using best practice methods.

ADVICE

28.7.1 Heritage items, including significant fabric, their curtilage and settings must be retained.

28.7.2 Alterations and additions must retain the form of the original building.

28.7.3 Removal of previous unsympathetic additions is encouraged.

28.7.4 Original architectural detailing must be retained.

28.7.5 Additions must be distinguishable from the heritage item. The work must complement but not mimic the original architectural style of the item.

28.7.6 Changes to the roof pitch or the height of the eaves of the heritage item is not permitted.

28.7.7 Original verandahs and balconies are not to be enclosed.

28.7.8 Original unpainted brick or stone is not to be rendered or painted.

28.7.9 Timber cladding must be retained in a painted finish. It must not be clad with a different material such as aluminium siding.

28.7.10 Where the original windows are timber framed then timber framed windows must be retained. Replacement with metal framed windows is not permitted unless the original windows had metal frames.

28.7.11 Reconstruction or reinstatement of original elements must only be made when it is based upon evidence showing the appearance and construction of the original structure.

28.7.12 In urban areas solar collectors, air conditioning units, satellite discs and water tanks are not to be located in front of a building or anywhere they would be visible from the public domain.

28.7.13 For solar collectors, air conditioning units, satellite discs and water tanks in rural settings see Context advice - rural landscape **28.2**.

28.7.14 Avenues and groups of trees must be conserved. If individual trees have to be removed due to ill health, then they must be replaced with the same species. See provisions under the heading, General development advice - significant trees.

28.7.15 A carport or garage must have an understated design and form, materials and finishes that complement the structure of the significant building.

28.7.16 A carport or garage must be setback a minimum of 2m behind the main front facade of a dwelling.

28.7.17 A carport or garage must be no more than 3.5m in width, 2.4m to the eave line and 3.5m to the ridge line.

28.7.18 Sheds and out buildings that date from the same historic period as the significant item are to be considered significant until proven otherwise.

28.7.19 Dilapidated sheds and outbuildings ancillary to a heritage building, that are significant but are not being used due to their dilapidated condition, must be archived using the guidelines in Part 5, if they are to be removed.

28.7.20 The design of an original front fence must be retained where it still exists. The fabric of the fence may be replaced so long as it has the same appearance as the original fence.

28.7.21 Where the original fence is unknown it must be between 500mm and 7500mm high and constructed of timber; or timber and masonry; or decorative wire and have at least 30% open area. The style of the fence must match the style of the building.

28.7.22 Sheet steel fencing and solid masonry fences are not acceptable at the front of a property or the sides where visible from the public domain.

28.7.23 The front fence must extend the full width of the front boundary and return along the side boundary to the front building line of the dwelling, except on a corner lot where the front fence must extend along the secondary frontage to the rear building line of the dwelling.

28.7.24 A heritage impact statement prepared by a suitably qualified heritage consultant must be submitted with the lodgement of a development application that seeks consent for development of a heritage item or a property within a heritage conservation area.

28.7.25 A heritage impact statement may be required for development adjacent to or within the vicinity of a heritage item.

28.7.26 When an archival record is required it must be completed using the standards/requirements under the heading - Making an archival record.

28.8 - General development advice - houses

This category includes all buildings constructed as a dwelling even if the building is no longer used as a dwelling, which are heritage items. Farm houses, single storey and two storey houses are included. Houses generally face a direction such as the street or a significant view. This elevation is generally treated differently with more detailing and through the architectural expression of the building. This elevation is referred to as the front of the building. The rear is generally more modest and faces away from the street or view.

These objectives and advice are in addition to those under Context advice and General development advice - policy for heritage items.

Objectives

1. To maintain the form of single storey and two storey houses.
2. To ensure alterations and additions to houses are unobtrusive.
3. To ensure the original fabric and finishes of houses are retained.

ADVICE

28.8.1 Alterations and additions to the front of houses are not permitted unless to reinstate original fabric and details.

28.8.2 Alterations and additions to houses that are heritage items must occur to the rear. Exception to this may occur on certain lots but must be demonstrated through a heritage impact statement.

28.8.3 Alterations and additions are to be compatible architecturally with the architectural style of the building without mimicking its original detail.

28.8.4 Two storey additions to single storey houses are not encouraged unless they are a pavilion which is joined to the house by a low link and the form of the addition is not intrusive.

28.8.5 Two storey additions must be unobtrusive when viewed from the street.

28.8.6 Attic conversions are only permitted where they can be wholly contained within the roof without a change to the roof pitch. Dormer windows may be used to accommodate an attic however they must not be located in the front facing roof plane and they must be well-matched to the style of the building.

28.8.7 The internal layout of the existing original building must be retained, although openings between rooms may be enlarged where there is no adverse impact upon the significance of the building. In circumstances where walls between rooms are opened to enlarge spaces then nib walls and overhead beams must be retained.

28.8.8 The massing and form of additions must match the original house.

28.8.9 Materials used in additions must be suitable to the style of the building. Face brick is not permitted.

28.9 - General development advice - significant trees

This category refers to all heritage listed trees.

Objectives

1. To maintain the visual prominence of heritage listed trees.
2. To ensure that development in the vicinity of heritage listed trees is designed to avoid or minimize impacts on the health and longevity of the tree.
3. To ensure that heritage listed trees are assessed and monitored by suitably qualified arborists.
4. To protect heritage listed trees during any demolition, earthworks, or construction works in the vicinity of the tree.
5. To maintain ground level and soil and water conditions in the vicinity of the root structure.

ADVICE

28.9.1 Development must not overhang, or encroach, on the aerial space occupied by the canopy of a heritage listed tree.

28.9.2 Development near a heritage listed tree must incorporate an effective combination of design strategies to minimize impacts on the tree's health and longevity including:

a. maintaining existing ground levels in vicinity of tree
b. maintaining groundwater flow in vicinity of tree
c. altering development footprint
d. altering hard surface design
e. using pier not strip footings
f. utilising permeable pavement, wooden walkways or pliable pavement
g. installing root deflectors
h. reducing driveway crossover widths
i. using trenchless techniques (micro tunnelling, directional drilling, pipe jacking, impact moling or under boring) rather than open trenching for new underground service installation.

28.9.3 A development application must be supported by a report from a suitably qualified arborist that details a tree protection plan and Tree Protection Zone (TPZ) for all heritage listed trees on the development site or within 5m of the site boundary.

28.9.4 Preparation of tree protection plans for private land must be in accordance with AS4970 2009 – Protection of trees on development sites.

28.9.5 Tree protection fencing must be provided to exclude works or access within a radius of 12 x tree diameter at breast height (DBH) where DBH is measured at 1.4 metres above ground level.

28.9.6 Tree protection fencing must be established prior to and during any tree removal works, demolition, earthworks, or construction works.

28.9.7 Machine excavation must cease and be replaced by hand excavation or directional boring within 4m of a large tree (> 12 m height or > 500mm DBH) or within 3m of a medium tree (8-12 m height or 200-500mm DBH).

28.9.8 Underboring must be undertaken only after reliable location of high risk services and consultation with the Utility or Service provider.

28.9.9 Underboring that passes within the root structure of the tree must be at least 700mm deep and works must be supervised by a qualified arborist.

28.10 - General development advice - dry stone walls

Dry stone walls are built without mortar and rely solely on the forces of gravity and friction for their strength. These objectives and advice are in addition to those under **Context advice** and **General development advice - policy for heritage items**.

Objectives

1. To conserve dry stone walls.
2. To ensure significant views to and from dry stone walls are retained.
3. To ensure new development does not damage the dry stone walls.

ADVICE

28.10.1 Dry stone walls must be conserved.

28.10.2 New development is not to obstruct views to the dry stone walls, they must remain visible elements in the landscape.

28.10.3 Any proposed modification to a dry stone wall including rebuilding, demolishing or making openings must have consent of Council.

28.10.4 Maintenance of the walls is acceptable and does not require council consent where it only involves replacing missing stones using traditional techniques.

28.10.5 New structures are to be set back from the stone walls and must not physically intersect them.

28.10.6 Where access is required then a stile can be constructed over the wall taking care not to support the stile on the wall itself.

28.11 - General development advice - community

This category covers all community buildings, ecclesiastical buildings, schools, child care centres, institutional buildings and cemeteries that are heritage items. Where a place has been converted from a house for any of these uses then refer to the advice for houses.

These objectives and advice are in addition to those under **Context advice and General development advice - policy for heritage items**.

Objectives

1. To ensure that the significance of the building, cemetery or its setting is not adversely affected by any new work.
2. To ensure that the adaptive reuse of a building under this category is undertaken without loss of the architectural significance of the place.

ADVICE

28.11.1 Adaptive re-use of a building within this category must retain the architectural character of the building.

28.11.2 New development within the grounds of a school or religious building must ensure that the heritage building is not dominated or overwhelmed by the new building.

28.11.3 New buildings must not be joined to heritage buildings unless it is by way of a small link structure.

28.11.4 Where the heritage item under this category is visible from the street then this view must not be obstructed by new development.

28.12 - General development advice - commercial

This category includes shops, local business, service stations, garages, post offices, and any other commercial building which is a heritage item. These objectives and advice are in addition to those under **Context advice and General development advice - policy for heritage items**.

Objectives

1. To ensure sympathetic siting, massing, scale, form and character, colour and materials for additions to a heritage item.
2. To reinstate the fabric of commercial heritage buildings including awnings, parapets, display windows, detailing and traditional colour schemes.
3. To minimise the impact of new services, disability access and internal fit-out on heritage fabric.
4. To ensure that signage is sympathetic to the heritage building.

ADVICE

28.12.1 Alterations and additions to the front of commercial buildings are not permitted unless to reinstate original fabric and details.

28.12.2 Alterations and additions must only occur to the rear. Exception to this may occur on certain lots but must be demonstrated through a heritage impact statement.

28.12.3 Alterations and additions are to be compatible architecturally with the architectural style of the building without mimicking its original detail.

28.12.4 Adaptive re-use of a heritage item must retain the character of the original building and convey a sense of its former use.

28.12.5 Development of a heritage item must retain any elements that reflect former use and occupation including original insignia or signage.

28.12.6 Access for people with a disability must be designed to minimise the impact on heritage fabric and significance.

28.12.7 Signage must not obscure significant architectural elements of the building or obscure views.

28.13 - Making an archival record

When an archival record is required, the minimum standards/requirements recommended by the NSW Heritage Branch for heritage items of local significance must be followed. If archival records of places of State significance are required then refer to the Heritage Branch web site. Where digital photography is proposed then follow these guidelines but refer also to the Heritage Branch document Photographic recording of heritage Items using film or digital capture, which is available online at www.heritage.nsw.gov.au.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 29 - SOCIAL IMPACT ASSESSMENT

Social Impact Assessment (SIA) refers to the assessment of the social consequences of a proposed decision or action (development proposals, plans, policies, and projects), particularly the impacts on affected groups of people and on their way of life, life chances, health, culture, and capacity to sustain these (*Planning Institute of Australia, SIA National Position Statement, June 2009*).

The process of undertaking a SIA and adopting the outcomes aims to facilitate quality development that is responsive to community need.

As a consent authority, Council has a statutory obligation under the provisions of Section 79C of the *EP&A Act 1979* to consider "The likely impacts of that development, including environmental impacts on both the natural and built environments and social and economic impacts in the locality."

This chapter and **Appendix 12** aims to maximise the quality of life through the identification and, where necessary, the mitigation of social impacts related to development proposals.

Objectives

1. Support development within the Shellharbour Local Government Area that is conducive to good health, fosters social cohesion/connectivity and contributes to a safe environment.
2. Strengthen Council's ability to promote a range of development options that acknowledge the values of local communities and are reflective of the current and future needs of residents.
3. Maximise positive social impacts and minimise negative social impacts on the way of life of our local communities and individuals.
4. Enhance consistency, certainty and transparency in Council's assessment of the positive and negative social impacts of proposed development.
5. Inform the local community and facilitate their participation in the planning and development assessment process.
6. Support the responsibility of developers, Council and the community to contribute towards local areas that are sustainable and liveable.
7. Support the delivery of the Shellharbour 2030 community vision: A connected community working together to create a safe, sustainable future that provides opportunities for all to achieve their potential.

ADVICE

29.1 **Appendix 12** details Council's process for SIA and the development that requires this type of environmental assessment. It includes roles and responsibilities for SIA and information to assist applicants in the preparation of a SIA.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 30 - BUILDING HEIGHT IN AREAS WITH NO MAPPED LEP HEIGHT PROVISION & BUILDING HEIGHT VICINITY OF THE AIRPORT

Objectives

1. To ensure building height is consistent and compatible with adjoining/nearby development.
2. To ensure building complies with the airport obstacle height limitations.

ADVICE

30.1 Building height in areas with no LEP height provision will be generally consistent and compatible with the LEP height provisions adjoining and nearby.

30.2 Building height in vicinity of the airport must comply with the LEP's obstacle height limitation surface provisions. This in some instances could be lower than the LEP's height of buildings map.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 31 - ACOUSTIC PROTECTION FOR NOISE SENSITIVE USES SUCH AS CHILD CARE CENTRES AND RESIDENTIAL DEVELOPMENT

Objectives

1. To ensure that noise impacts from busy roads, rail corridors and other noise-generating land uses (e.g. Airports or industrial land uses) are mitigated where sensitive receivers are within close proximity to the noise, in addition to maintaining the proper functioning of existing noise generating development.
2. To ensure that noise intrusion into residential areas is minimised by designing and managing such requirements at the subdivision stage.
3. To ensure all noise barriers are acoustically sound and designed to respond to the streetscape.
4. To ensure appropriate acoustic levels are achieved within various stages of Shell Cove.

ADVICE

31.1 - certain properties in Shell Cove

31.1.1 Certain properties within Stages 5, 6, 7 and 10 that are within close proximity to the quarry haul road are affected by noise mitigation measures. The restrictions are specified in the s88B Instrument.

31.1.2 Applications for residential development on the affected land must demonstrate how the title restrictions have been addressed.

31.1.3 All mitigation measures must be adequately maintained in perpetuity of the residential development.

ADVICE

31.2 - developments and subdivision fronting and within proximity to busy roads, rail corridors and other-noise generating land uses

31.2.1 A noise assessment survey and a program of appropriate noise attenuation measures to reduce traffic or other noise that potentially will affect sensitive noise receivers must be prepared by a suitably qualified acoustic consultant in accordance with the NSW Road Noise Policy and/or Industrial Noise Policy issued by the NSW Governments'. The assessment shall predict noise levels for a ten year period and any noise attenuation measures shall address these noise levels.

31.2.2 For proposed development near rail corridors reference to the requirements of "Development Near Rail Corridors and Busy Roads – Interim Guidelines prepared by the NSW Government Department of Planning" must also be considered prior to any acoustic assessment undertaken.

31.2.3 The above reports are required for all the following types of development applications:

a. subdivisions creating additional lot(s)

b. dual occupancy and multi-unit developments fronting and within 100m of busy roads including Shellharbour Road, Lake Entrance Road, Princes Highway, Tongarra Road, Terry Street, Illawarra Highway

c. child care centres

d. sensitive land uses (eg seniors housing, dwellings, child care centres) adjoining industrial and business zoned land

e. sensitive land uses (eg seniors housing, dwellings, child care centres) within business zoned land.

31.2.4 Dwellings and other noise sensitive uses close to high noise sources such as busy roads, railway lines or industry should be designed to locate noise sensitive rooms and private open space areas away from noise sources and be protected by appropriate noise shielding measures. Doors and windows should be kept to a minimum on the side of the dwelling most exposed to the noise source. Regarding solar access, BASIX will still need to comply. Outbuildings, fences and mounds located between the noise source and noise sensitive areas and rooms can assist in minimising acoustic nuisance.

31.2.5 Any noise barriers must be constructed as part of a subdivision where required by an acoustic study.

31.2.6 The materials proposed for use to mitigate noise shall be guaranteed to provide a minimum of thirty (30) years of life and will be maintained by the landowner for normal wear and tear. Alternatively, other arrangements may be considered for the maintenance of the noise barriers.

31.2.7 Architectural treatments are to be designed in accordance with AS3671 - Traffic Noise Intrusion Building Siting and Construction, the indoor sound criteria of AS2107 - Recommended Design Sound Levels and Reverberation Times for Building Interiors.

31.2.8 Other acoustic attenuation measures may include:

a. the provision of noise barriers with mounding, landscaping, additional setbacks or a combination of all these measures

b. architectural treatment of buildings will only be considered where it has been demonstrated that noise barriers or mounding is not reasonable or feasible. Such requirements will be included in the development consent conditions or in s88B Instrument where subsequent development will be proposed.

31.2.9 The noise attenuation measure will only be approved following a review of its visual impact and the resultant proposals to create quality urban design, e.g. materials and artistic design to minimise graffiti.

31.2.10 Any fence/noise barrier to be constructed as part of the noise attenuation measures are preferred to be 1.8m high, however heights up to 2.4 metres may be acceptable where these are located adjacent to major roads or rail corridors.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 32 - AIRPORT AND ENVIRONS DEVELOPMENT

Objectives

1. To protect the airport's operations.
2. To protect the community from airport impacts.

ADVICE

Aircraft noise

32.1 The LEP needs to be referred to in relation to provisions on preventing noise sensitive development from being located close to the airport and its flight paths, minimising aircraft noise impact via building noise attenuation in noise sensitive buildings and ensuring landuse and development does not hinder airport operations.

Airspace operations

32.2 The LEP needs to be referred to in relation to the airport's airspace not being compromised by proposed development that penetrates *the Obstacle Limitation Surface (OLS)* or the *Procedures for Air Navigation Systems Operation Surface (PANS-OPS).*

32.3 The OLS protect the immediate airspace in the vicinity of the airport for visual operation and are based on specifications laid down in the *Civil Aviation Safety Authority's Manual of Standards (MOS) 139* for the applicable runway classifications.

32.4 The PANS-OPS protect the immediate airspace in vicinity of the airport for instrument operations and are based on the *Civil Aviation Safety Authority's Manual of Standards (MOS) 173*. The PANS-OPS surfaces differ to the OLS in that they protect aircraft conducting operations under instrument flight rules (IFR) where only aircraft instruments are used for navigation. PANS-OPS surfaces generally (although not always) sit at a higher level in the airspace than the OLS (Obstacle Limitation Surface) and are therefore normally protected by virtue of the lower OLS.

Lighting within a 6 kilometre vicinity of the airport

32.5 Any lighting associated with development in vicinity of the airport could be subject to lighting limitations. Lighting limitations are included in the *Civil Aviation Safety Authority's Manual of Standards 139* Chapter 9 Section 9.21 "Lighting in the Vicinity of Aerodromes" available on the CASA website.

32.6 Chapter 9.21.3.1 of the MOS indicates that advice for the guidance of designers and installation contractors is provided for situations where lights are to be installed within a 6 km radius of a known aerodrome. This will generally take in most of the urban area west of Shellharbour Road and non-urban areas east of Calderwood.

32.7 Development applications will be assessed on a case by case basis for lighting implications in consultation with the airport manager.

Reflectivity

32.8 Development on, adjoining or neighbouring the airport must account for the need to minimise the hazard to aircraft operations by reflectivity. All building materials must be low-reflective. Under no circumstances will the use of zincalume or similar be permitted.

Navigation aids

32.9 Development on land where there are navigation aids, is to account for the need to protect navigation aids such as directional beacons. Contact Council's airport manager for more information.

32.10 Development applications will be checked on a case by case basis for implications with navigation aids with the airport manager and Air Services Australia.

Bird and animal hazard management

32.11 Development on, adjoining or neighbouring the airport is to account for the need to minimise the hazard to aircraft operations created by the presence of birds and or animals on or in vicinity of the aerodrome.

32.12 Development applications on, adjoining or neighbouring the airport will be assessed on a case by case basis for bird and animal hazard management implications in consultation with the airport manager.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 33 - AREAS DEFERRED UNDER LEP 2013

This Chapter and associated Appendix No. 13, provide site specific provisions for deferred lands including Tullimbar. For advice in addition to these site specific provisions, please refer the relevant chapters of the remainder of the DCP. Please note, where there are inconsistencies between the remainder of the DCP and the site specific provisions, the latter will prevail.

Objective

1. To provide appropriate planning provisions for land that has been deferred from *Shellharbour LEP 2013*.

ADVICE

33.1 Land that is deferred from *Shellharbour LEP 2013* will be identified as such on Section 149 Certificates for those lands.

33.2 This development control plan applies to all land that is deferred from *Shellharbour LEP 2013*, except for the Calderwood development area.

33.3 In addition to the provisions of this development control plan, land that is deferred and has a residential zoning under *Shellharbour LEP 2000* will have a floor space ratio of 0.5:1, a minimum lot size of 450 m2 and a maximum height of 9 metres.

33.4 Despite Advice number 33.3 above, development consent may be granted to a single development application for both of the following:

a. Torrens Title subdivision of land into 2 or more lots, if the size of each lot is at least 200 square metres; and

b. development is for the purposes of a dual occupancy, or a medium density housing development on each lot resulting from the subdivision.

33.5 Land that has been deferred in Tullimbar Village and is zoned Residential 2(e) under *Shellharbour LEP 2000* will have the provisions of **Appendix 13** of this DCP, titled Tullimbar provisions, apply to it.

NOTE: Where there are inconsistencies between Appendix 13 and the remainder of the DCP, the former will prevail.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 34 – VISUAL LANDSAPE CHARACTER

This chapter of the DCP applies to land in the following zones:

LEP 2000 zone
- 1(a) Rural

LEP 2004 zones:
- 1(rl) Rural Landscape
- 1(a) Agriculture.

LEP 2013 zones:
- E1 National Parks and Nature Reserves
- E2 Environmental Conservation
- E3 Environmental Management
- E4 Environmental Living
- RU1 Primary Production
- RU2 Rural Landscape
- R5 Large Lot Residential
- RU6 Transition.

The following provisions can be relaxed where applying to developed or vacant land in large lot residential subdivisions with an existing prevailing character that is inconsistent with the development outcomes aimed for by this Chapter.

Objectives

1. To ensure visual character and landscape quality is maintained and or enhanced
2. To ensure visual impacts of proposed development are minimised
3. To encourage traditional rural and bushland setting building styles.

ADVICE

34.1 - Visual Character Landscape Assessment Requirement

34.1.1 A Visual Landscape Character Assessment (VLCA) is required for any development within the subject land.

The VLCA must be prepared for the development from a local and sub-regional/ regional view point. The view point is taken from the transport routes and other publicly accessible vanatage points such as lookouts as these are the main viewing platforms of the rural and non-urban landscape. The sub-regional and egional view point would be taken from the Illawarra Highway, Princes Highway, South Coast Railway Line, other main roads and lookouts. The local view would be taken from public local roads around the property.

NOTE: a VLCA is a written report that includes photos and diagrams. It identifies and analyses the impact a development may have on the visual character of a site and the wider area. It also recommends ways to mitigate any impact.

NOTE: other provisions of this DCP may specify minimum requirements such as setbacks, however the conclusions of the visual assessment for the site may recommend requirements beyond such minimums.

34.1.2 The VLCA report must:

a. identify and analyse the existing landscape setting;
b. assess the proposal against the objectives of this chapter. The VLCA report should incorporate the design principles below, as appropriate to individual sites and settings. The VLCA report should incorporate mitigation measures in reaching conclusions on whether the proposal complies with the objectives.

ADVICE

34.2 - Design principles for roads and private accesse driveways

34.2.1 Where practical preserve original road pattern.

34.2.2 Conform to topography by minimising cut and fill.

34.2.3 Minimise road width having regard for traffic volumes and safety.

34.2.4 Minimise the creation of new road(s).

34.2.5 Create visual enclosure with trees.

34.2.6 Provide a canopy over roads and accesses.

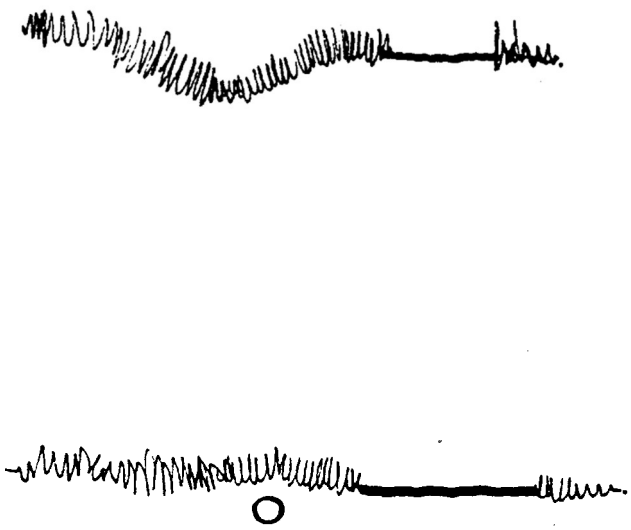
34.2.7 Retain natural landscape elements to increase visual integration of the road with the landscape.

ADVICE

34.3 - Design principles for drainage

34.3.1 Use natural drainage treatments such as swales

Figure 34.1 – Swale design



ADVICE

34.4 - Design principles for road signage

34.4.1 Keep signage as simple as possible

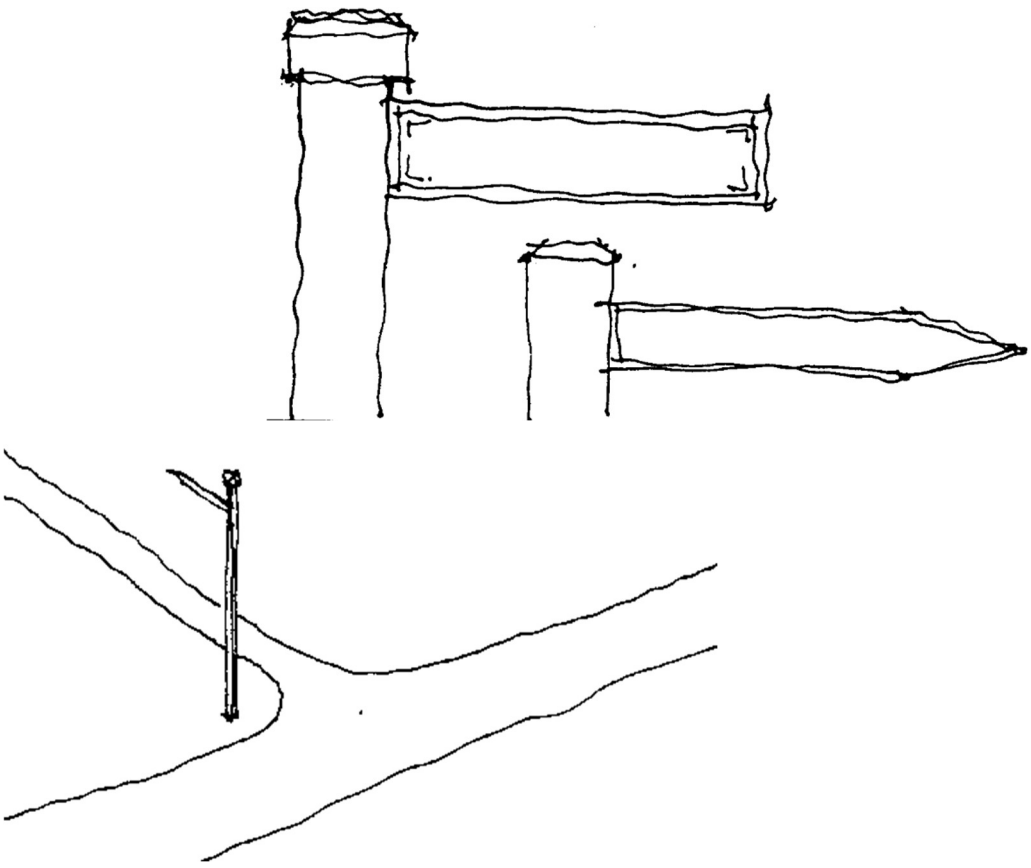
34.4.2 Limit the number of blades

34.4.3 Avoid use of more than one style and multiple sign clusters

34.4.4 Avoid use of trees or poles for signs

34.4.5 Avoid using other elements, natural or man - made to place signs on

Figure 34.2 – road signage design



ADVICE

34.5 - Design principles for boundary treatments

34.5.1 Use natural vegetation or plantings.

34.5.2 Screen fences with vegetation.

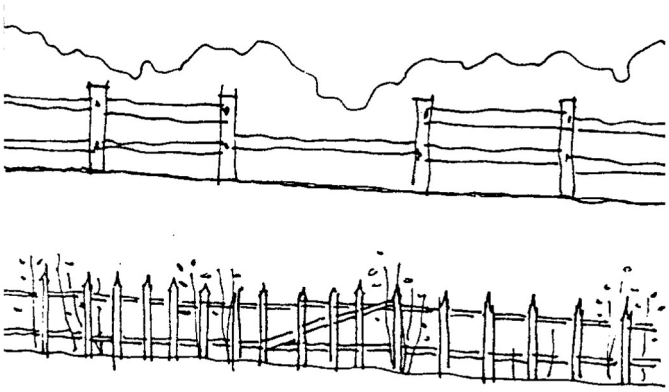
34.5.3 Use timber post and rail, picket or post and wire fencing.

34.5.4 Fencing is to be used to separate stands of significant vegetation from other uses on the site.

34.5.5 Fencing must be designed and located so as to minimise the need for vegetation removal and must not encroach into bushland, other than to define allotment boundaries.

34.5.6 Solid fencing such as metal sheets, paling or 'lapped and capped' fencing is not appropriate and must not be erected.

Figure 34.3 – Fence design



ADVICE

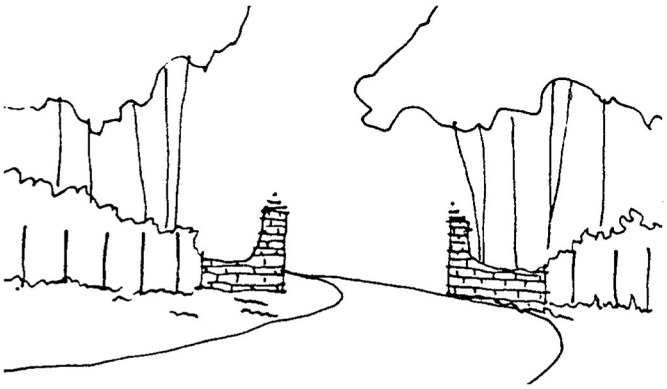
34.6 - Design principles for entrances

34.6.1 Use trees and or shrubs.

34.6.2 Use gateway treatments to a maximum height of 1.8 metres, in masonry or timber finishes.

34.6.3 Avoid signage on fences and gates.

Figure 34.4 – Entrance design



ADVICE

34.7 - Design principles for clustering buildings

34.7.1 Buildings/outbuildings should be clustered together with unity in materials and building form.

Figure 34.5 – Clustering of buildings



ADVICE

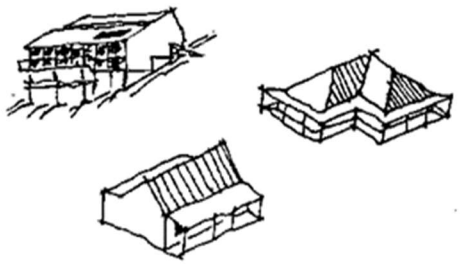
34.8 - Design principles – building form and roofline

34.8.1 Use split level on steeper slopes

34.8.2 Use broken hip and valley roof with verandah

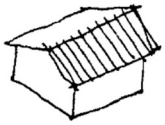
34.8.3 Use leanto verandahs

Figure 34.6 – Suitable designs



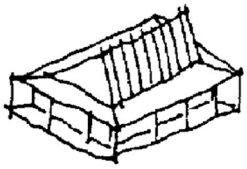
34.8.4 Use flush gable with barge overhang.

Figure 34.7 – Flush gable with barge overhang



34.8.5 Use early Australian gambrel design.

Figure 34.8 – Early Australian Gambrel



34.8.6 Reflect the rural/and or natural setting of the site. Buildings do not necessarily need to have a rural homestead theme however, other styles will only be considered if they do not dominate the setting.

34.8.7 Use building design that is broken into smaller elements rather than appearing as a large building mass. Buildings must not dominate the landscape when viewed from surrounding properties and public places.

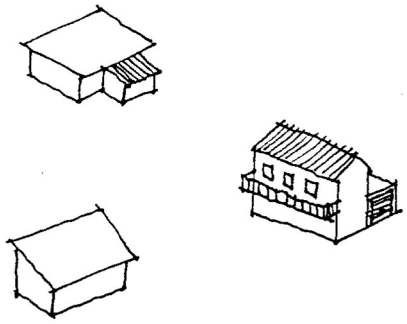
34.8.8 Use eaves, as houses without eaves are not considered characteristic of a rural landscape.

34.8.9 Avoid flat and leanto roof and dwelling form.

34.8.10 Avoid 2 storey dwelling with flat roofed garage.

34.8.11 Avoid skillion roof form.

Figure 34.9 – Designs to avoid



ADVICE

34.9 - Design principles for roof and wall materials

34.9.1 Roof materials can be slate, tile, colour bond, corrugated iron, clay tiles.

34.9.2 Building materials should be timber, sandstone, sandstock bricks, weatherboard.

34.9.3 Building/roof materials should be consistent between buildings/outbuildings.

ADVICE

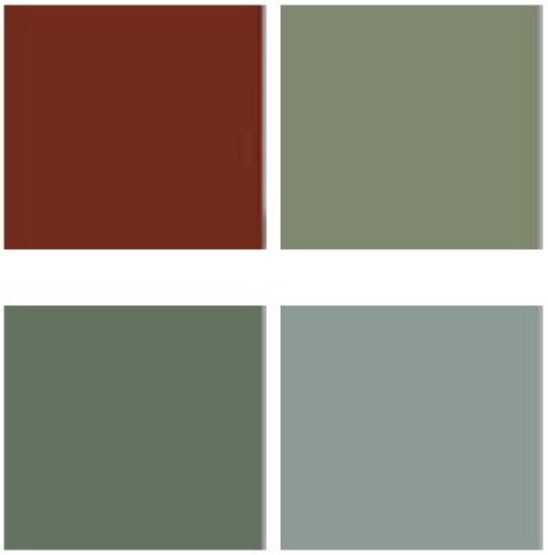
34.10 - Design principles for roof and wall colours

34.10.1 Roof colours can be dark greens or greys, autumn reds or colours of existing roofs.

34.10.2 Wall colours should be earthen or neutral shades or colours of existing buildings.

34.10.3 Wall/roof materials should be consistent between buildings/outbuildings.

Figure 34.10 – Suitable colours



ADVICE

34.11 - Design principles for building height

34.11.1 Use single storey where visual integration is difficult and/or where screening in open landscape is required.

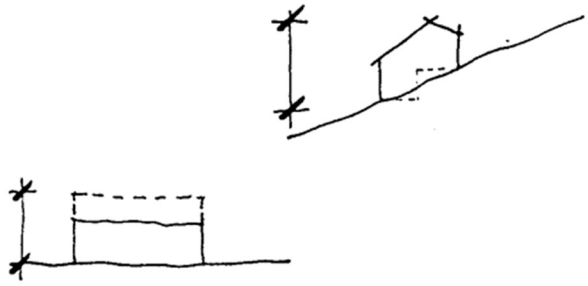
34.11.2 Use split level on steeper slopes to minimize cut and fill.

34.11.3 Double storey where good visual integration is possible.

34.11.4 Three storey is not considered appropriate.

34.11.5 Avoid building on ridgelines.

Figure 34.11 – building heights



ADVICE

34.12 - Design principles for screening buildings

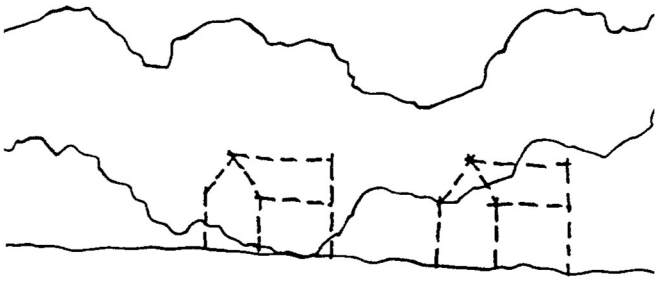
34.12.1 New buildings must be screened by supplementary or existing planting.

34.12.2 Additional vegetation should integrate new buildings into the landscape.

34.12.3 Buildings that are visible must be well integrated into the landscape.

34.12.4 Integrate plantings in front and behind new buildings.

Figure 34.12 – Screening of buildings



ADVICE

34.13 - Design principles for vegetation associated with buildings

34.13.1 Form an oasis around dwellings and or ancillary buildings by plantings or existing vegetation.

34.13.2 If visible, dwellings and or ancillary buildings should have a strong backdrop of large trees.

Figure 34.13 – Screening, part screening and using large backdrop trees



ADVICE

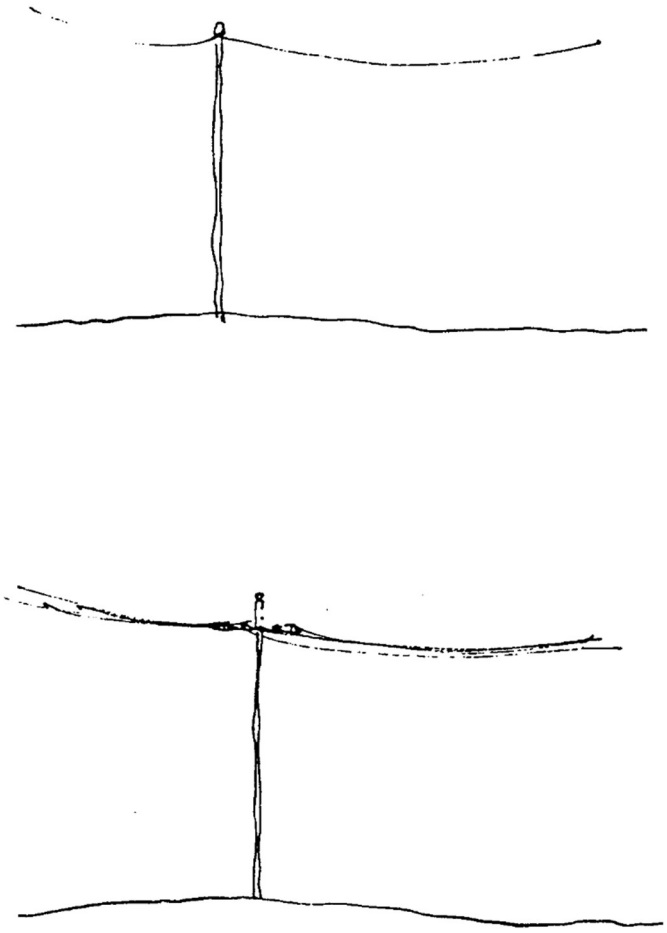
34.14 - Design principles for electricity lines

34.14.1 Use underground lines where possible.

34.14.2 Use poles with visual impact.

34.14.3 Avoid aerial sub stations.

Figure 34.14 – Suitable electricity line design



ADVICE

34.15 - Design principles for development on skyline

34.15.1 Skylines should retain natural lines.

34.15.2 Integrate development below skyline.

34.15.3 Where skyline retention is not possible, structural elements should be similar, contained on each side by vegetation and no higher than vegetation .

Figure 34.15 – Retaining, integrating skyline

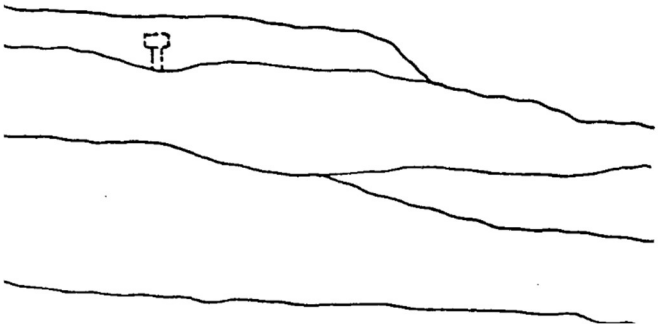
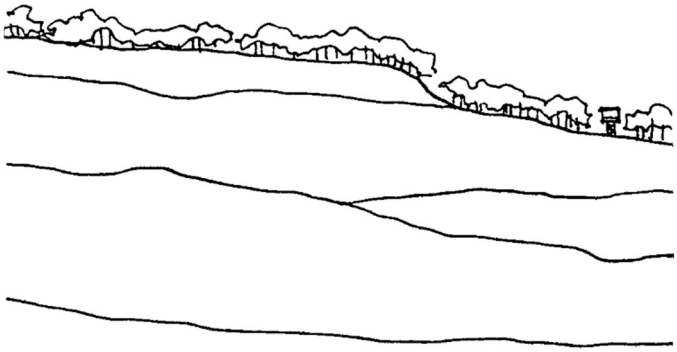


Figure 34.16 – Containing structural elements against skyline



ADVICE

34.16 - Design principles for lighting

34.16.1 Avoid or minimise obtrusive light. Lighting for safety and security purposes may be unavoidable and may cause adverse visual impacts. In these circumstances consideration should be given to ways of minimising light pollution and reference should be made to relevant Australian standards.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 35 – VIEWS AND VIEW SHARING

Objectives

1. Encourage view sharing where appropriate and possible.

2. Avoid or minimise adverse effect on views from other properties.

ADVICE

View values and principles

35.1.1 Development with the potential to adversely impact views experienced from other properties must address the value of the view that may be affected. In this respect the New South Wales Land and Environment Court Planning Principles must be considered. These include:

a. Water views are valued more highly than land views

b. Whole views are valued more highly than partial views, e.g. a water view in which the interface between land and water is visible is more valuable than one in which it is obscured.

What development must address

35.1.2 Development must address:

a. what part of other properties have the views currently experienced, according to the following principles:

i. rear and front boundary views are more easily protected than side boundary views

ii. standing views are more easily protected than sitting views

iii. retaining side views and sitting views is often unreasonable .

b. the extent of impact, according to the following principles:

i. views from living areas are more significant than views from bedrooms or service areas such as kitchens

ii. it is more appropriate to assess a view qualitatively than quantitatively. Impact may be assessed quantitatively, but often this is inappropriate. For instance it may be unhelpful to say view loss is 20% if this includes a sail of the Sydney Opera House. . It is more appropriate to assess the view loss qualitatively as negligible, minor, moderate, severe or devastating.

c. Overall reasonableness and compliance of the proposal causing the impact, according to the following principles:

i. Even a moderate impact on views caused by non-compliance with planning controls/provisions may be considered unreasonable

ii. If the proposal complies with the relevant planning controls/provisions, consideration needs to be given to whether an alternate design could provide the same development potential and amenity, while reducing impact on views. If an alternate design cannot achieve this, then the proposal would likely be considered acceptable.

Note: for more information on the context of the above principles, please refer to Tenacity Consulting v Warringah Council 92004) NSWLEC 140.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 36 – PODIUM DESIGN AND TREATMENT

The following podium provisions apply to buildings for any type of use.

Objectives

NOTE: A podium is a section of building at its base, which has a different form than the building above it. Inside the podium is typically car parking. Because of the internal use, the podium exterior often presents as a bland wall with little or no design features or embellishment. This can result in podiums next to a footpath, several metres high, with associated adverse visual impact. This can contrast adversely with a well - designed building above.

1. To avoid and minimise the use of podiums.
2. To ensure podiums are visually attractive.
3. To ensure podiums complement the overall building design.
4. To ensure podiums complement active or semi active street frontages.

ADVICE

36.1.1 On flat and gently sloping sites buildings must be designed without using podiums.

36.1.2 On steeper sites buildings must be designed to step along the site's slope so that the use of podiums is minimised.

36.1.3 Where a podium 1 metre or higher cannot be avoided, the podium face must have a design treatment such as:

- public art;
- landscaping such as vines, within private land'
- varied colours and materials;
- patterned finish;

or a combination of the above.

36.1.4 Podium design treatment must complement the rest of the building.

36.1.5 Podiums over 2 metres high must be setback at least 2 metres from the front boundary where located in an active or semi active frontage area. This is to allow use of the setback space for commercial activity such as displays or outdoor dining.

36.1.6 Where landscaping is used, the podium must be setback to ensure plantings are within the subject development site and not on the road reserve.

36.1.7 Podiums over 1 metre high not facing streets may be screened by landscaping subject to other relevant provisions of this DCP.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 37 - FIRE HYDRANTS, OTHER PLANT AND EQUIPMENT

Objectives

1. To ensure fire hydrants, other plant and equipment are integrated with the development's design.

2. To ensure fire hydrants, other plant and equipment are not visually prominent from a public space such as a street.

3. To avoid fire hydrants, other plant and equipment being located in areas designated for other functions such as landscaping.

ADVICE

37.1.1 The location of fire hydrants, other plant and equipment must be shown on the development application.

37.1.2 Fire hydrants, other plant and equipment should be in a location which is not visually prominent from a public place such as a street. Their location must be integrated into the site design complementing the development.

NOTE: Other chapters/appendices of this DCP will also need to be considered when preparing a development application.

CHAPTER 38 - SITES WITH SPLIT ZONES OR IN CLOSE PROXIMITY TO A ZONE BOUNDARY

Sites with split zones are sites which have more than one zoning under the local environmental plan.

With split zone sites a development may be permissible in only one of the zones. For instance a site may be zoned part residential and part environmental conservation. Here, a dwelling and ancillary structures such as garages, pools, sheds would only be permissible on that part of the land zoned residential. For permissibility of development, reference needs to be made to the local environmental plan.

Objective

1. To ensure development is conceptualised and assessed correctly on sites with more than one zone.

ADVICE

38.1.1 The following must be submitted with development applications on sites with more than one zone or sites in close proximity to a zoning boundary:

- detailed survey at a suitable scale showing the entire site's zoning in relation to all elements of the development proposed, including ancillary development.

Note: Proponents should contact Council's GIS section to obtain relevant mapping data about zone lines.

PART 4 - APPENDICES RELATING TO PART 2 - PROVISIONS FOR SPECIFIC USES OF LAND

APPENDIX 1 - ON SITE WASTE WATER MANAGEMENT FOR SINGLE RESIDENCES AND SUBDIVISION PLANNING

A1.1 - Definitions

For the purposes of this Plan, definitions must be as identified in full description according to Australian/New Zealand Standard - On-site Domestic Wastewater Management (AS/NZS 1547-2000).

Absorption - the absorption and/or uptake of effluent into the soil by capillary action.

Absorption trench or bed or area - a land application system which uses the principle of absorption.

Aerated wastewater treatment system (AWTS) - a system which uses the processes of aeration followed by clarification to achieve biological treatment of wastewater.

Biochemical Oxygen Demand (BOD) – the amount of oxygen required for the biological decomposition of organic matter.

Blackwater - wastes discharged from the human body either direct to a dry-vault toilet or through a water closet (flush toilet) and/or urinal.

Collection well - (See Holding Tank).

Compost Toilets - treatment units which employ the process of biological degradation in which organic material is converted into compost material through the action of microorganisms and invertebrates.

Desludging - removal of the accumulated sludge and scum from the septic tank.

Design loading rate (DLR) - the long term acceptance rate (LTAR), reduced by a factor of safety, expressed in L/m2/day or mm/day as applied to the horizontal design area of a land application system.

Domestic wastewater – wastewater originating from household or personal activities including water closets, urinals, kitchen, bathrooms (including shower, washbasins, bath, spa bath but not spa) and laundries. Includes such wastewater flows from facilities serving staff/employees/residents in institutional, commercial and industrial establishments, but excluding commercial and industrial wastes, large-scale laundry activities and any stormwater flows.

Drainage - An indication of the local wetness conditions likely to occur in most years. Soil wetness is further described as very poorly drained, imperfectly drained, moderately well drained, well drained and rapidly drained.

Very poorly drained: Water is removed from the soil so slowly that the water table remains or near the surface for most of the year.

Poorly drained: All horizons remain wet for periods of several months.

Imperfectly drained: Some horizons are wet for periods of several weeks.

Moderately well drained: Some horizons may remain wet for as long as one week after water addition.

Well drained: Some horizons may remain wet for several days after water addition.

Rapidly drained: No horizon is normally wet for more than several hours after water addition.

Effluent - the liquid discharge from a wastewater treatment unit.

Evapotranspiration – the removal of water from soil by evaporation and from plants by transpiration.

Evapotranspiration-absorption (ETA) trench, bed or area – a land application system that embodies the principles of evaporation, transpiration and absorption.

Geotextile a water permeable material used in foundation stabilisation, soil particles moved by water erosion are designed not to pass thorough the geotextile fabric, (care should be taken as there are different fabric spacing sizes and qualities).

Greywater - the domestic wastes from baths, showers, basins, laundries and kitchens specifically excluding water closet and urinal wastes. Greywater does not normally contain human waste unless laundry tubs or basins, are used to rinse soiled clothing or baby's napkins.

Groundwater - the body of water in the soil, all the pores of which are saturated with water. If the body of water is present at all times it represents permanent or true groundwater.

Holding tank - a tank used for holding wastewater prior to pumping out by tanker or to further treatment or land application (sometimes called a collection well).

Land Application Area – the area over which treated wastewater is applied for assimilation of water and pollutants into the natural environment.

Long-term acceptance rate (LTAR) - the maximum rate of percolation of primary or secondary effluent into the soil. It allows for loss to the soil by percolation through the base and side-walls of the system and considers the effect of biomat development on percolation in the soil.

Pathogens - micro-organisms that are potentially disease causing; these include, but are not limited to bacteria, protozoan and viruses.

Primary treatment - the separation of suspended material from wastewater by settlement and/or flotation in septic tanks, primary settling chambers etc., prior to effluent discharge to either a secondary-treatment process, or to a land application system. Primary treatment also involves anaerobic digestion of some organic material.

Scum - the floating mass of wastewater solids buoyed up by entrained gas, grease or other substances which form an accumulating layer on the liquid surface inside the treatment tank.

Secondary treatment - Aerobic biological processing and settling or filtering of effluent received from a primary treatment unit. Effluent quality following secondary treatment is expected to be equal to or better than 20g/m3 5-day biochemical oxygen demand and 30g/m3 suspended solids.

Septic tank - a single or multiple chambered tank through which wastewater is allowed to flow slowly to permit suspended matter to settle and be retained, so that organic matter contained therein can be decomposed (digested) by anaerobic bacterial action in the liquid. The term covers tanks used to treat all waste greywater or blackwater.

Setback - the distance that a wastewater system must be situated from any facility, boundary or body of water.

Sewage Management - any activity carried out for the purpose of holding or processing, or reusing or otherwise disposing of, sewage or by-products of sewage.

Sewerage - the network of collection drains carrying domestic wastewater or effluent away from properties for off-site treatment.

Sludge - the semi-liquid solids settled from wastewater.

Sodic - a soil condition in which the percentage of exchangeable sodium is high enough to cause significantly increased clay dispersivity, decreased soil structure stability and to potentially decrease soil permeability.

Transpiration - the transfer of water to the atmosphere through plants.

Wastewater - the used water arising from domestic activities in dwellings, institutions or commercial facilities consisting of all waste, greywater, or blackwater.

Wastewater system - an on-site domestic wastewater system that receives, treats and absorbs wastewater within the property boundaries of the site of generation.

Water-table - the upper surface of groundwater below which the soil is permanently saturated with water.

Wetland - A system for further treatment of effluent consisting of a bed of rock or other durable media in which wetland plants are grown.

A1.2 - Installation approval and accreditation

A1.2.1 Domestic on-site wastewater management systems should be installed and operated in accordance with Environment and Health Protection Guidelines – On-site Sewage Management for single households and AS/NZS 1547:2000.

A1.2.2 The design, installation and operation of domestic on-site sewage management systems are regulated under local government legislation which requires Council approval is needed for the installation, construction or alteration of a human waste treatment device or storage facility and a drain connected to it.

A1.2.3 The *Local Government (Approvals) Regulation 1993* sets out specific requirements for onsite sewage management approvals, including matters for Council consideration, performance standards and circumstances where prior Council approval is not required. Under Part 3 of the Regulation an approval to operate a domestic on-site sewage management system is also required.

A1.2.4 Human waste storage and domestic waste treatment devices are required to be assessed and accredited by the Director-General of the NSW Health Department to enable Council to approve the installation. The system types outlined under treatment systems are accredited systems.

NOTE: Council may also consider approving an alternative onsite treatment and disposal method on a trial basis if there is demonstrated compliance with the performance objectives of this plan and the Local Government (Approvals) Regulations 1999. Supporting documentation detailing the method of treatment, engineering design theory, performance and the operation and maintenance of the installation is required to be included with such applications to install.

A1.3 - Treatment systems

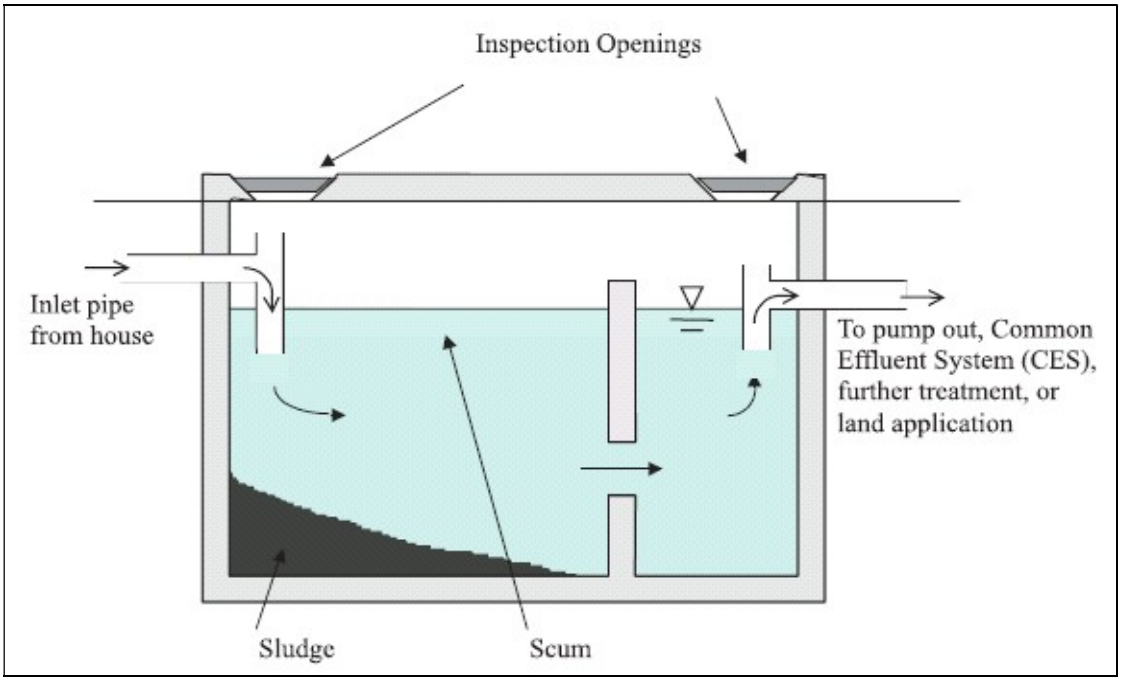
Primary treatment - septic tanks

A1.3.1 Septic tanks provide primary treatment of wastewater. Upon entering the tank, the solids settle to the bottom and a layer of scum is formed on the top which consists of oils and fats. This layer creates anaerobic conditions under which bacteria digest the solids within the wastewater. The wastewater then flows to either a soil absorption system (such as a trench), further on-site treatment, or to a common effluent system. See **Figure A1.1** below.

A1.3.2 It is recommended that outlet filters be installed on all septic tanks. They are installed inside the septic tank on the outlet, and provide an additional barrier to the carry-over of solids from the septic tank with the discharging effluent. Several brands are available, they are relatively inexpensive, and can be retrofitted to existing septic tanks. They require periodic maintenance which is as simple as hosing the accumulated material off the filter into a bucket and tipping the waste back into the main chamber of the septic tank. These filters will improve final effluent quality and prolong the life of the land application area.

A.1.3.3 As the septic tank provides only a primary level of treatment, disinfection and removal of nutrients is not carried out. Therefore, the wastewater can only be applied below the ground surface. Land application methods are discussed in this Appendix.

Figure A1.1 - Cross section of a septic tank



Source DLG (1998)

Secondary treatment - aerobic wastewater treatment systems (AWTS)

A1.3.4 AWTS typically include the following processes (see **Figure A1.2** below):

a. settling of solids and flotation of scum in an anaerobic primary chamber (septic tank)

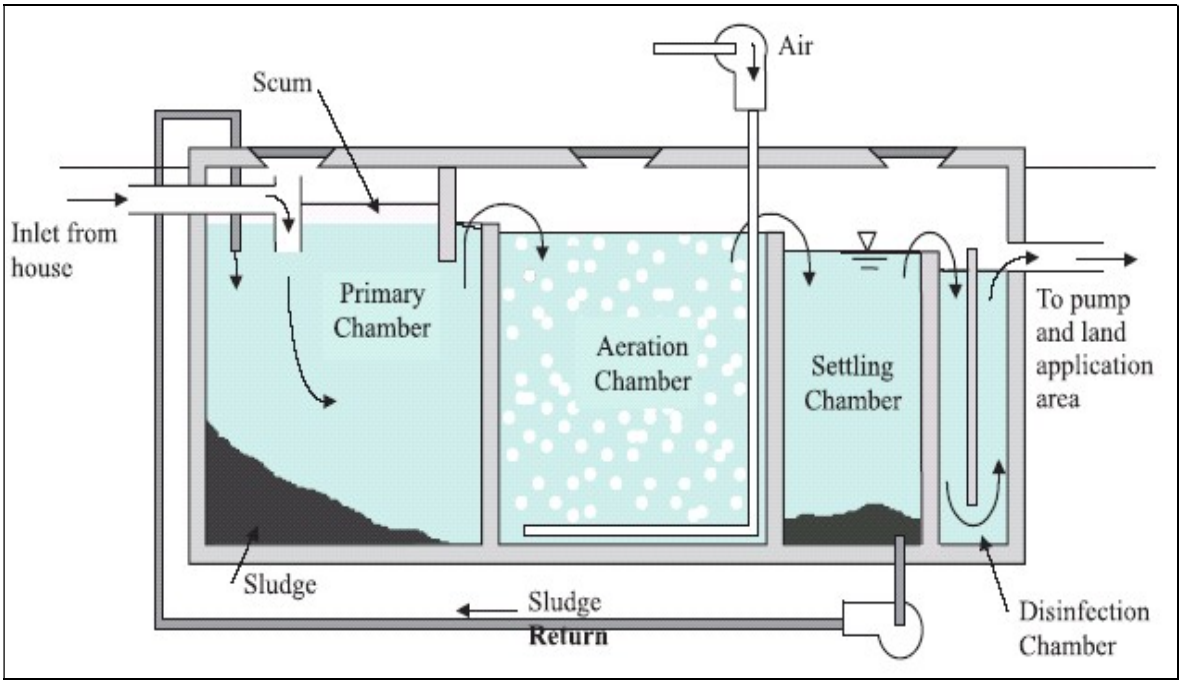
b. oxidation and degradation of organic matter through aerobic biological processes

c. clarification - secondary settling of solids

d. disinfection using chlorination, or other approved means if surface land application of effluent is to occur

e. regular removal of sludge to maintain the process. (DLG, 1998).

Figure A1.2 - Cross section of an AWTS



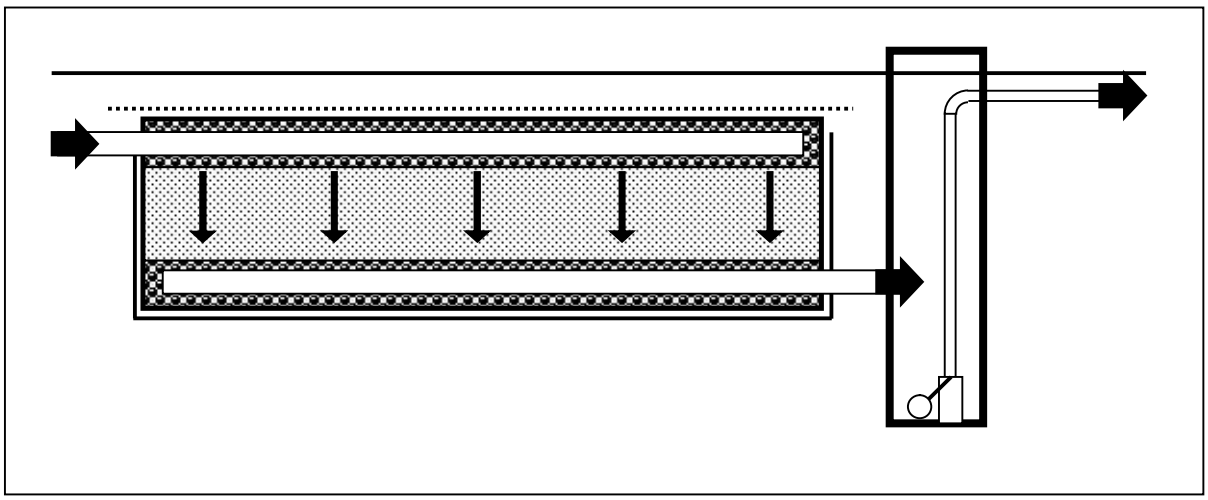
Source DLG (1998)

Secondary treatment - septic tank with packed bed filters

A1.3.5 Packed bed filters are biological and physical treatment units. These filters, which use graded media such as sand and gravel in treating small to medium volume wastewater flows, can produce a high quality final effluent. They are aerobic fixed film bioreactors (where biological treatment occurs on the organic film coating the media), and in addition to physical (screening and sedimentation) and chemical (adsorption of dissolved pollutants) processes, they perform as a biological filter. It is particularly important that professional assistance be sought in the design of a packed bed filter as the characteristics of the filter media are particularly important. The grain size must be small enough to screen out as much suspended solids as possible, while being large enough to avoid clogging. It must also enable microorganisms to colonise the filter in order to maximise the biological treatment processes. Guidance on the design of these systems can be found in (DLG, 1998).

A1.3.6 There are two types of packed bed filters (single pass (intermittent) filters or recirculating filters). In the majority of cases, the filter material is graded sand. In single pass filters, the wastewater is collected after it has percolated through the sand and is piped to the disposal area. A single pass filter is shown in the **Figure A1.3** below.

Figure A1.3 - Cross section of a single pass sand filter



Source: Geary et al, 2005

A1.3.7 Recirculating filters are able to produce wastewater to advanced levels of treatment. Primary treated wastewater from the septic tank is delivered to the recirculation tank where mixing and biochemical treatment take place. Pumps in the recirculation tank deliver wastewater to the filter bed in frequent timer-controlled doses. With each dose, the wastewater percolates through the filter (which could be coarse sand/fine gravel, peat or other media such as crushed glass, polystyrene pellets, fabric, foam, zeolite), and the contaminants are removed and broken down by naturally occurring microorganisms living on the filter media. The highly aerobic flow from the filter bed drains back to the recirculation tank for mixing with incoming wastewater. After a few more passes through the filter bed and recirculation tank, the treated wastewater is ready for land application or reuse.

Secondary treatment - biological filter systems

A1.3.8 These systems utilise a combination of solids composting and packed bed filtration to treat wastewater to a secondary standard. See **Figure A1.4** below. Raw solids are composted and broken down on the top of the unit and the liquid load trickles down through alternating layers of organic and other media. Some biological filters can provide an advanced secondary quality effluent suitable for subsurface irrigation.

Secondary treatment - reed beds

A1.3.9 Constructed wetlands are purpose-built structures that use the functions and processes that occur in natural wetlands to treat wastewater. Constructed wetlands may be used to further treat wastewater that has undergone primary or secondary treatment before land application. The two types of constructed wetland used for wastewater management are free water surface wetlands and subsurface flow wetlands. Physical, chemical and biological processes act to reduce organic, suspended solid, nutrient and pathogen loads within the effluent. Aquatic plants (sometimes called macrophytes) play an essential role in the treatment process and require careful consideration during all phases of constructed wetland management.

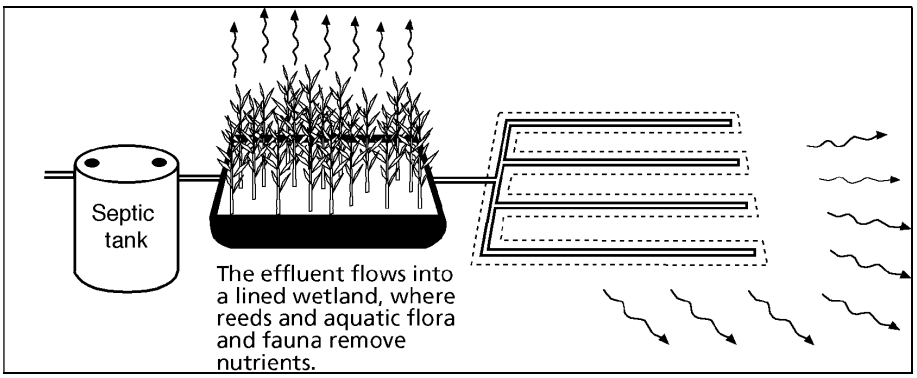
A1.3.10 Free water surface wetlands consist of emergent, submerged or floating native aquatic vegetation in a shallow bed or channel, with the water surface exposed to the atmosphere. Wastewater should be adequately disinfected before it is applied to a free water surface wetland.

A1.3.11 Subsurface flow wetlands (reed beds) contain at least 30 cm of permeable media, such as rock, gravel or coarse sand, which supports the root system of the emergent vegetation. The treated wastewater flows through this medium and is not in direct contact with the atmosphere.

A1.3.12 Constructed wetlands can be effective sediment traps and good sites for the breakdown of organic material. Their performance in removing nutrients is less predictable. Long-term removal of nitrogen is possible in some cases, but phosphorus removal is unreliable. Under some conditions these systems can even release nutrients to the wastewater.

Figure A1.4 - Reed bed system

Source: www.dlg.nsw.gov.au
Secondary treatment - waterless composting toilets

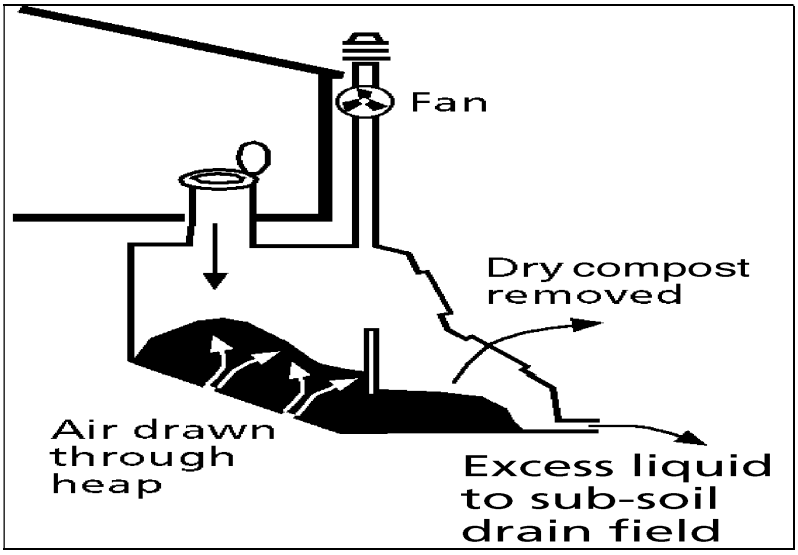


Composting or waterless toilets

A1.3.13 Composting or waterless toilets accept toilet wastes (and sometimes garbage wastes) and utilise the natural process of composting to effect decomposition of organic material. See **Figure A1.5** below. Air is introduced through an opening to pass through the composting materials and exit through a vent. Excess liquids need to be allowed to drain for collection or evaporation. As a result of aerobic decomposition processes and predation and natural die-off within the compost pile, the numbers of pathogenic microorganisms are significantly reduced. The biological degradation of the organic wastes converts the sewage into a humus-like material. A number of different proprietary types of composting toilets are commercially available.

Figure A1.5 - Cross section of a composting toilet

Source: www.dlg.nsw.gov.au



Greywater treatment systems

A1.3.14 In general, there are three main options for greywater: direct diversion of washing machine greywater (other sources of greywater may not be diverted), primary treatment and subsoil application or secondary treatment with disinfection and surface/shallow subsurface irrigation. If greywater is stored for more than 24 hours it must be treated and disposed of in accordance with all-waste on-site wastewater management principles. Greywater treatment systems must be accredited by NSW Health and an approval must be sought from Council. Diversion of washing machine water does not require Council approval.

NOTE: Further information on the use of greywater is available on Council's website at www.shellharbour.nsw.gov.au

A1.3.15 A variety of proprietary greywater treatment systems exist, many of which rely on coarse filtration using rock, sand or other media in a discrete filter module, or below ground in a trench filled with filter media. A commonly used greywater system involves the collection of greywater and its immediate redistribution to the landscape for sub-surface lawn and garden watering. No storage is allowed, although a surge tank can be incorporated for coping with sudden influxes and for housing a distribution pump.

Treatment system maintenance

A1.3.16 Maintenance should be carried out in accordance with the certificate of accreditation and Council's permit conditions.

A1.3.17 Maintenance of the treatment system is important to ensure effective long term operation and various aspects are discussed below:

a. Have a suitably qualified maintenance contractor service the system. Servicing should include:

   i. checking the structural integrity of the tank/s and lid/s

   ii. checking sludge and scum levels and arranging/supervising pump out when required (pump out may be required every 3-5 years)

   iii. checking the condition and operation of pumps, blowers, timers, float switches and other components, and replacing or repairing any faulty parts

   iv. ensuring adequate air delivery and timing of aeration

   v. ensuring correct operation of sludge return systems and skimmers

   vi. checking biomass accumulation on the media (fixed growth systems) or settleability using Imhoff Cone (suspended growth systems)

   vii. in the case of systems employing chlorine disinfection, replacing spent chlorine in the disinfection chamber as required (note free residual chlorine in the pump out chamber should be in the range 0.2-2.0 mg/L), or in the case of UV disinfection systems, cleaning and replacing the UV lamp as required

   viii. assessing liquor characteristics such as colour, odour, pH, clarity and dissolved oxygen, to measure treatment performance

   ix. making adjustments as required to improve effluent quality.

b. use household cleaning products sparingly and check that they are suitable for septic tanks. Never place large quantities of bleaches, disinfectants, fabric softeners or other antibacterial solutions down toilets, sinks or other fixtures that drain to the septic tank

c. keep as much fat and oil out of the system as possible. Install sink strainers to trap food particles and dispose fats and oils with the regular waste collection service

d. use detergents that are low in sodium and phosphorus

e. conserve water.

A1.4 - Water conservation and improving wastewater quality

A1.4.1 Good water conservation is an important aspect in the overall management of onsite systems. It is important to the ongoing performance of both the treatment and land application systems that they are not overloaded hydraulically, or by particular chemical constituents contained in wastewater.

A1.4.2 AAA rated plumbing is recommended for all water fixtures. Using the following water saving devices, the household's water consumption can be reduced substantially:

a. dual flush 6/3 L pan and cistern

b. AAA rated taps, limiting flow to less than 9 L/minute

c. AAA rated shower heads to limit flow to 6 L/minute

d. AAA rated dishwasher, using not more than 18 litres per wash

e. AAA rated washing machine, front loading, limiting water use to not more than 22 litres per dry kg of clothes.

A1.4.3 Organic matter, oils and fats can enter the waste stream from various sources. These pollutants can be reduced by avoiding disposal of food wastes, oils and fats down the sink. Compost food and other organic wastes where possible and place oils and fats in sealed containers for disposal with the Council waste collection system. Only install "Insinkerator" style garbage disposal units if the system manufacturer states that it is appropriate.

A1.4.4 Bleaches, disinfectants and other cleaning compounds can harm wastewater treatment systems, such as septic tanks, because they kill bacteria that colonise the treatment system and help treat wastewater. Use these products sparingly and always check that they are safe for septic systems.

A1.4.5 Avoid placing oil, paint, petrol, acids, degreasers, photography chemicals, cosmetics, lotions, pesticides and herbicides in the wastewater system. Even small amounts of these products can harm the performance of the onsite effluent management system.

A1.4.6 Only low sodium detergents should be used to ensure that the soil structure and hence its absorption capacity is maintained as close as possible to a natural condition. Sodium in laundry powders is frequently used as a filler. Therefore, in general, liquid detergents are preferred over powder.

A1.4.7 Also, low phosphorus detergents should be used to ensure that optimum plant growth is maintained and that excess phosphorus is not leached into the environment.

A1.5 - Land application options

A1.5.1 The design, siting, and sizing of the Land Application Area (LAA) should meet the performance requirements and criteria as set out in AS/NZ 1547:2000, and should be undertaken once the site and soil assessment has determined soil categories and loading rates as well as environmental constraints and opportunities.

A1.5.2 The type of land application system to be employed also depends on the level of treatment/quality of effluent produced. Primary treated effluent may only be applied subsurface, below 150 millimetres depth. Secondary treated effluent which has been disinfected may be applied to the surface or subsurface by spray or drip irrigation.

Absorption trenches

A1.5.3 Absorption trenches can be used where the sites soils are neither too quickly nor too slowly permeable. They are generally approximately 400mm deep incorporating a perforated pipe in a bed of aggregate which is then covered by geotextile and topsoil. Trenches must be installed with a level base and parallel to the contour, with all the trenches in one dedicated area. The system must distribute wastewater evenly over the area and may incorporate a distribution box to divide the effluent flow to dose each trench with a similar portion of the flow.

A1.5.4 Resting soil absorption systems by using dual land application areas allows the clogging layer to dry, become aerobic and degrade. Application areas can be rotated every three to six months. The resting area can also serve as an emergency unit or for use during wet weather. Alternating areas is a particularly effective strategy for slightly clayey soils.

Evapo-transpiration beds

A1.5.5 This term is used to describe subsurface bed systems that use direct evaporation and plant evapo-transpiration as the primary method of effluent uptake. Usually a proportion of the hydraulic load will still leave the system through soil absorption hence the title evapo-transpiration/absorption (ETA) bed. Evapo-transpiration (ET) systems have a fully sealed base through the use of an impermeable liner and therefore do not have effluent output through soil absorption. These two systems operate under the same principles, which is their major output is through evapo-transpiration.

A1.5.6 An ETA/ET system typically consists of a shallow bed ranging in depth from approximately 300 mm to 600 mm. This depth will depend on the site and soil conditions but the closer the base of the bed is to the surface, the greater the evapo-transpiration of effluent, but the lesser the internal effluent storage capacity. Length and width dimensions will vary based on the minimum surface area required for effective long-term operation. ETA bed length to width ratios are often equal or close to one, but this may depend upon method of construction and the shape of the land area available. Because of the low profile nature of ETA beds they can be an effective option for sites with shallow soils or in areas of high water table (Patterson 2002).

Surface irrigation

A1.5.7 Irrigation areas should be bunded or elevated to prevent stormwater run-on. Low-growing crops that are eaten without cooking should not be grown on the irrigation area, and serious consideration should be given to fencing off the area to prevent human and/or animal access when the soil is wet and liable to pugging. Advisory signs should be erected to inform people that they should avoid contact or consumption with the effluent being used.

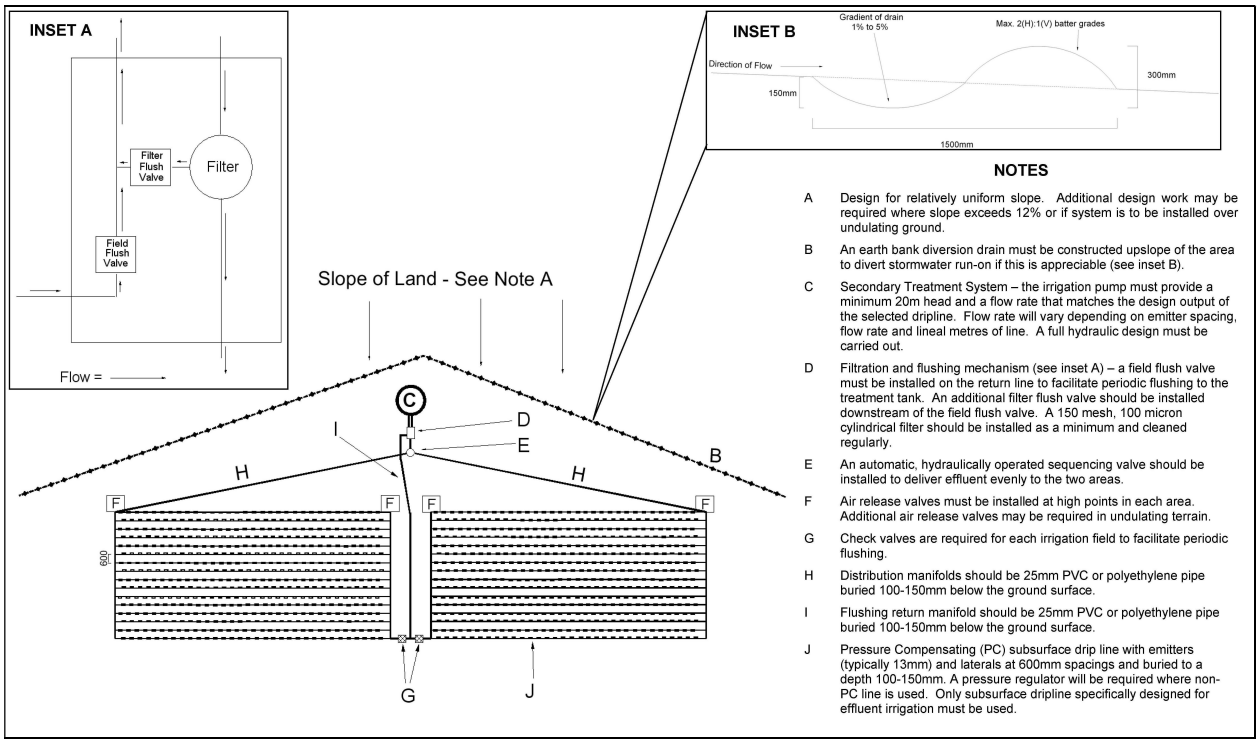
A1.5.8 Drip, trickle or spray application techniques can be used. Soaker hoses, garden sprinklers and standard water hose fittings must not be used. Distribution systems must not be capable of being connected to the mains water supply. Sprays are installed so that all effluent is contained within the land application area and that spray drift will not contaminate active recreational areas and swimming pools. Spray systems should use low pressure, low volume spray heads that produce coarse droplets, with a spray head plume radius, and height that will not allow the effluent to pool or drift beyond the designated irrigation area. Irrigation and buffer areas should be appropriately vegetated.

Subsurface irrigation

A1.5.9 Subsurface irrigation must be dosed by a pump, offering controlled discharge to reduce the potential for runoff or pooling of wastewater. This is achieved through the use of pressure compensating irrigation pipe specially designed for use with effluent. Subsurface irrigation is possible on slopes steeper than most other types of land application. Modern subsurface irrigation systems have few moving parts, can be fully automated and have the potential to offer a long and low maintenance service life.

A1.5.10 It is most important that the effluent is low in TSS and BOD5 to reduce the potential for biofilm growth in the irrigation lines or blocking of the emitters. Systems should be protected by high quality filters. A typical subsurface irrigation system would comprise a minimum 120 micron filter on the supply line, an appropriate length of typically 13-19 mm pressure compensating irrigation line with emitters typically spaced at 30-60cm centres. In some cases the irrigation line and emitters are treated with bio-slime inhibitor, in others such an inhibitor is introduced by dosing from a sacrificial cell. Root control chemicals can also be introduced into the system to restrict the growth of fine roots into the emitters. The **Figure A1.6** below shows a typical layout.

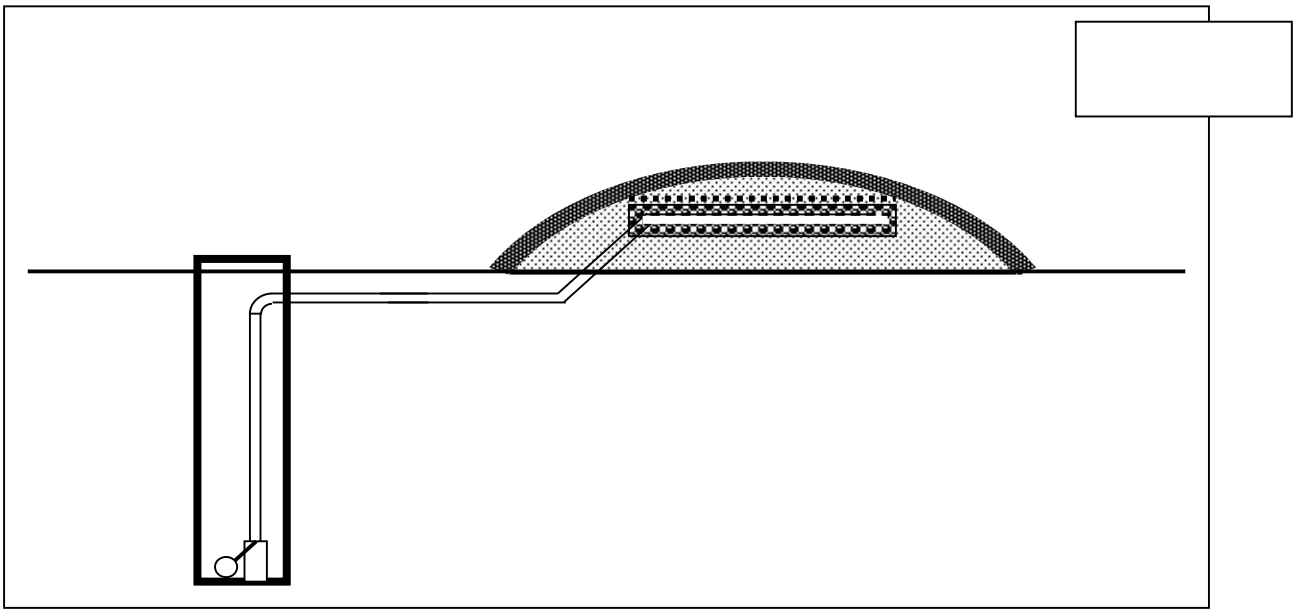
Figure A1.6 - Generic sub-surface irrigation scheme



Mounded system disposal

A1.5.11 Mounds dose primary or secondary treated effluent, by pump or siphon, to a pressurised distribution manifold of drilled pipes set in an aggregate distribution bed which sits near the top of an appropriately sized sand-fill media mound. The wastewater is further treated as it passes through the mound in much the same way as it would be if it passed through an intermittent sand filter, before entering the native soil beneath. Mounds have the benefits of increasing separation distance between the point of application and the soil and groundwater, they facilitate nitrogen reduction and they permit increased evaporation and transpiration due to their being raised above ground level. Amended media designs offer opportunities for phosphorus removal where this is a requirement. Mound design and sizing requires professional input but with appropriate design higher hydraulic loading rates can be applied than to conventional trenches. Mounds can offer an attractive landscape option in situations where soils, high groundwater tables or climate otherwise restrict alternatives. A typical mound design is shown in the **Figure A1.7** below.

Figure A1.7 - Cross section of a mound



Management

A1.5.12 Land Application Areas and mounds must be monitored and maintained to operate effectively. The following is recommended:

a. regularly harvest (mow) vegetation within the LAA or mound and remove this to maximise uptake of water and nutrients

b. monitor and maintain the subsurface irrigation system following the manufacturer's recommendations, including flushing of irrigation lines

c. regularly clean in-line filters

d. ensure that the irrigation system is working effectively to ensure good even dispersal of effluent

e. do not erect any structures over the LAA or mound

f. minimise vehicle access to the LAA or mound, to prevent compaction

g. ensure that the LAA is kept level by filling any depressions with good quality topsoil (not clay).

A1.6 - Site and soil assessment

A1.6.1 Site and soil assessment should only be undertaken by suitably qualified and experienced professionals familiar with wastewater management and the description and assessment of the topography, soils and environmental constraints of a site.

A1.6.2 Site and soil constraints and required separation distances from sensitive receptors (waterways, bores, buildings, boundaries etc) will determine the amount of available land for application of the wastewater and help determine a suitable location for the land application system. The characteristics of the receiving soil will determine an appropriate loading rate for the hydraulic component of the wastewater, and together with the existing or proposed vegetation for the land application area, enable assessment of the minimum area required for the sustainable application of the nutrient (nitrogen and phosphorus) content of the wastewater. The preferred land application method will then determine the minimum level of wastewater treatment required and hence guide the selection of treatment system.

A1.6.3 Guidance as to the required level of detail of site and soil assessment and the methodologies to be employed is to be found in AS/NZS 1547: 2000 and E&HPG.

A1.7 - Reporting requirements for different levels of development

A1.7.1 Selecting an appropriate site for an on-site sewage management system based on the site and soil characteristics is crucial to its long-term functionality and environmental health. It is therefore important that this issue is considered as early in the process of the development of land as possible. Broad scale investigation at this time can direct subdivision layout and result in exclusion of areas where on-site wastewater management is not sustainable. Whilst the factors which require consideration in a single-lot application have been discussed above, and this level of investigation represents the most detailed level of reporting, a desk-top investigation at subdivision stage or earlier, if appropriate, may make the single lot investigation more efficient.

A1.7.2 Guidance on appropriate investigation and reporting levels is contained in E&HPG and Appendix 4.1 B and 4.1C of AS/NZS1547:2000.

A1.8 - References

A1.8.1 *Australian/New Zealand Standard 1547:2000 On-site domestic-wastewater management. (Standards Australia).*

A1.8.2 *Environment and Health Protection Guidelines – On-site Sewage Management for Single Households (Department of Local Government, 1998).*

A1.8.3 *Geary, P. and Gardner, E. (1996). On-site Disposal of Effluent. In Proceedings from the one day conference Innovative Approaches to the Management of Waste and Water, Lismore 1996.*

A1.8.4 *Geary, P., Stafford, D., and Whitehead, J.H. (2005) On-site Domestic Wastewater Treatment and Reuse Royal Australian Institute of Architects Environment Design Guide DES 24.*

A1.8.5 *McDonald, R.C., Isbell, R.F., Speight, J.G., Walker, J., and Hopkins, M.S. (1990). Australian Soil and Land Survey Field Handbook 2nd Edition, Inkata Press, Melbourne, Sydney.*

A1.8.6 *Munsell Soil Colour Charts (2000). Revised Washable Edition.*

A1.8.7 *NSW Agriculture (1997). The New South Wales Feedlot Manual. NSW Inter-departmental Committee on Intensive Animal Industries (Feedlot Section).*

A1.8.8 *Patterson R.A. (2002) Evapo-transpiration Bed Designs for Inland Areas, SepticSafe Technical Sheet, DLG, Sydney.*

A1.8.9 *USEPA (2002). Onsite Wastewater Treatment Systems Manual. United States Environmental Protection Agency.*

APPENDIX 2 - OUTDOOR DINING

Consent under the *Roads Act 1993*

A2.1 Outdoor dining areas located on or over a public footpath must have been issued with consent from Council prior to the commencement of operations. Consents are reviewed periodically and are subject to a number of requirements including the need for public liability insurance cover where Council must be named as an interested party. Consent enquiries are to be directed to Council's Property Leases/Licenses Section.

Licence agreements

A2.2 Outdoor dining areas located on public land must have entered into a licence agreement with Council prior to the commencement of operations. Licence agreements must be renewed periodically and are subject to a number of requirements including the need for Public Liability insurance cover where Council is named as an interested party. Licence agreement enquiries are to be directed to Council's Property Leases/Licenses Section.

Approved food premises

A2.3 Outdoor dining areas are only permitted when they are operated as an integral part of an approved restaurant/café or similar.

Consumption of alcohol

A2.4 The area must not be used for the consumption of alcohol except where the consumption is by customers eating a meal at the restaurant.

A2.5 The consumption of alcohol will not be permitted within any area identified as an alcohol free zone under the provisions of the *Local Government Act 1993*.

A2.6 Any restaurant intending to serve alcohol requires a separate licence under the *Liquor Act 2007*. Further information can be obtained from the Liquor Administration Board.

APPENDIX 3 - SHELLHARBOUR CITY CENTRE COMMERCIAL DEVELOPMENT

A3.1 - Masterplan precincts/block or precinct development strategies

Precinct definition

A3.1.1 The Shellharbour City Centre comprises a number of sites or precincts and each have their own development pattern and function within the Masterplan. It is important to recognise and differentiate between each of these sites and precincts in terms of their existing development form and the proposed structure under the Masterplan and to identify the objectives and development strategies and principles for each of these sites.

A3.1.2 The strategy for each precinct relates to the overall principles and objectives of the Masterplan. The Masterplan contains a detailed Section on precincts which clearly defines them and sets out design objectives/concepts.

A3.1.3 These should form the basis for precinct/block development strategies required to precede DAs. The Masterplan should be used as the briefing document for preparation of block/precinct development strategies (B/PDS).

Block/precinct development strategy

A3.1.4 A block/precinct development strategy should be provided for large sites, blocks or precincts within the City Centre prior to a development application being submitted for approval for any works including subdivision. Large sites include properties greater than 5,000m2.

A3.1.5 Responsibility for the preparation of B/PDS is by the proponent who will engage appropriately qualified professionals, for example, statutory and strategic land use planner, urban designer, architect, civil engineer, transport planner/engineer.

A3.1.6 Approval of and any consequent sought amendment of a B/PDS will be under delegation by Council's development assessment staff in consultation with relevant Council Sections.

B/PDS elements/provisions

A3.1.7 A B/PDS should comprise the following:

a. A notional subdivision plan (if applicable)

b. A clear delineation of access lanes

c. Explanation of how public domain requirements will be implemented and when

d. Details on the proposed building footprints, envelopes, heights and setbacks, which will direct future building growth

e. A clear designation of public transport, pedestrian circulation and facilities

f. A clear indication of parking/traffic circulation/facilities

g. A mobility and access plan between public and private domain (including catering for those with a disability)

h. Explanation of how the proposal supports the masterplan and how the proposed end state development will be served by appropriate amounts of parking.

A3.1.8 The B/PDS should include an analysis of how the Masterplan can be implemented by site specific development and should have provisions on:

a. Design intent, site and public domain design issues.

b. Design principals and concepts integrating:

   i. building envelope and form
   ii. subdivision
   iii. solar access in public and private domain
   iv. wind tunnel avoidance
   v. reflectivity
   vi. views and vistas
   vii. gateway features
   viii. lighting
   ix. active uses
   x. land use
   xi. crime prevention through environmental design
   xii. access for persons with a disability (see **Chapter 16 and Appendix 6**).
   xiii. facades
   xiv. architectural style
   xv. colours and materials
   xvi. transport, traffic, parking, bicycle, pedestrians and servicing facilities
   xvii. road reserve design
   xviii. public art
   xix. landscaping, street trees
   xx. energy and water efficiency in landscaping
   xxi street furniture including pedestrian, bus shelters and weather protection
   xxii. appropriate solar access for public domain and different uses.

c. General structural guidelines which relate to:

   i. land use
   ii. building envelopes and setbacks
   iii. building height
   iv. central block and on-site parking
   v. servicing and service access
   vi. level changes.

d. Building envelope guidelines which include:

   i. design context and project integration
   ii. active and semi-active street frontage location
   iii. entries and access
   iv. pedestrian shelter

v. facade treatment
vi. roofscape
vii. corner elements
viii. gateway features
ix. focal point buildings
x. building materials
xi. signage and advertising
xii. energy and water efficiency/recycling
xiii. water sensitive urban design
xiv. solar access

A3.1.9 Additionally the B/PDS will address any provision of the DCP and or Masterplan as Council sees fit.

A3.1.10 The B/PDS should be prepared in consultation with Council.

A3.1.11 The B/PDS provisions will be in plan, elevations, sketches, diagrams (including shadow diagrams), photos, written provisions as Council sees fit.

A3.1.12 Height, building envelopes/footprints, setback should accord with the Masterplan.

A3.1.13 The B/PDS will reference parking provisions in the **Chapters 13 and 14** of this DCP.

A3.2 - Development applications which don't require or have not been preceded by a precinct or block development strategy

A3.2.1 Such applications should comprise:

a. precinct or block development strategy elements (from Block/precinct development strategy) relevant to the proposal

b. an analysis of how the Shellharbour City Centre Masterplan can be implemented by the proposal, clearly addressing the relevant criteria under Block/precinct development strategy

c. reference parking provisions in **Chapters 13 and 14** of this DCP.

A3.3 - Public domain works

Streetscape materials

A3.3.1 A range of bold, simple, robust materials have been chosen for the new streetscape which reinforce the character and function of the public domain. They are as follows:

Footpaths

a. Insitu concrete with exposed aggregate, rocla trihex pavers at street corners.

b. Treepits: rocla ecohex permeable pavers - colour charcoal, unhoned.

c. Trim to building edge: rocla pavers 290 x 290 mm. 145 x 290 mm colour charcoal, honed finish.

Street furniture

a. Seats: street and garden furniture GFG 012 with arm rests and natural oiled jarrah battens. Powdercoat black finish to steelwork.

b. Bins: Street Furniture Australia surface fixed zincalume finish 55L L83 mini orb with stainless steel convex lid.

Lighting

a. Lighting within the public domain must be provided to specification as detailed by Council.

Plant species

a. Plant species have been chosen to reflect the character of the surrounding south coast and the indigenous vegetation of the locality.

A3.4 - Site specific works

The following guidelines should be followed when submitting Development Applications for landscape works within the lot boundaries where the works are forward of the building and contribute to the public domain.

Materials

A3.4.1 The preferred materials for paving where building is setback from lot boundary and at the building entrances, are (see **Figure A3.1** below):

a. Insitu concrete with exposed aggregate to match public domain footpaths.

b. The public domain rocla trihex pavers colour charcoal, honed finish (290 x 290 mm, 290 x 145 mm) or an alternative paver as approved by Council.

c. Where building setbacks occur on main Street the public domain concrete unit trim should be continued to the building edge.

d. Where entrance ways and building setbacks occur adjacent to corners paved in rocla trihex paving provided in the stage 1 infrastructure works, the trihex paving should be continued to the building edge to match the public domain.

e. Existing pavers which have been cut along the lot boundary should be removed and replaced with new pavers to interlock into existing, and ensure a seamless transition at the lot boundary.

f. Footpath crossings should be paved in rocla trihex paving.

g. The sub-grade treatment for paving will need to meet Council's requirements.

Figure A3.1 - Paving materials



Rocla Ecohex permeable pavers

Rocla Ecohex permeable pavers and Rocla honed concrete unit pavers

Exposed aggregate insitu concrete

Lighting

3.4.2 External lighting within the lot boundary should be designed to complement lighting provided within the public domain and is to be approved by Council.

Planting works

3.4.3 Where planting works occur within the lot boundary native species are the preferred choice. Where space allows small to medium trees should be considered.

A3.5 - Cultural requirements

Cultural and public facility requirements for Council have been assessed (Shellharbour Town Centre Cultural Environment Study August 1998) which has provided valuable input to this study. This study promotes the following Cultural Environment Principles.

A3.5.1 Design the whole town centre as a series of spaces and connections which contribute to an overall cultural identity.

A3.5.2 Encourage logical connections between cultural facilities and commercial outlets.

A3.5.3 Integrate civic and community services into people-focused areas of the urban fabric.

A3.5.4 Acknowledge the role of spontaneous cultural activity in supporting 'city animation' and design to accommodate informal gathering/meeting places for every day interactions.

A3.5.5 Recognise the encompassing energy of key commercial cultural service providers such as the cinema complex and locate complementary activities such as restaurants accordingly.

A3.5.6 Use a place making approach to urban spaces to ensure an energetic integration of design, function and cultural outcomes.

A3.5.7 Recognise the need of the Shellharbour community for a place that celebrates the symbolic significance of the City Centre in creating a distinctive cultural identity.

A3.5.8 Locate areas of open space near cafes and restaurants to maximise spontaneous cultural exchange and 'people watching' opportunities.

A3.5.9 Create comfortable, exciting destinations, especially for families, who come to experience the City Centre.

A3.5.10 Design areas where parents can relax while children play nearby.

A3.5.11 Use site specific public art and design to focus and interpret spaces. Allow for interactive, fun, bold, playful works as well as more ceremonial elements.

A3.5.12 Design for overall good natural surveillance and easy policing of all public areas.

These principles provide a major input to the urban design of the Centre.

A3.6 - Site integration

A3.6.1 The plan seeks to create a flexible structure which integrates:

a. the existing enclosed Stockland Shellharbour Shopping Centre with the rest of the site to the west with a slightly curving main street

b. the main street (Memorial Drive) with central block parking areas to the north and south

c. existing land uses with those proposed by use of mixed-use development to make a seamless transition (mixed-use development allows for mixes of retail, residential and commercial uses)

d. "activity areas" such as existing shopping mall with proposed town centre facilities such as cinemas, shops, showrooms and offices in a pedestrian friendly manner

e. the existing bulky goods area to the west.

A3.7 - Place making

A3.7.1 Create a variety of human scaled, people places and spaces with emphasis on the public domain. Create:

a. major public parks for active and passive users

b. a pedestrian oriented main street enclosed by 2, 3 & 4 storey development built to the property line and with a wide verandah/awning over the footpath

c. squares in sunny locations (southern side of street) and sheltered from wind for informal meeting and gatherings

d. a major terraced public space which takes advantage of views and is enclosed by 2, 3, 4 storey plus (up to 6 storey) buildings

e. other street spaces of different character based on different uses but enclosed by 2, 3, 4 storey buildings

f. integration of a city square and shopping centre with public streets and spaces

g. central block parking courts which accommodate shopper and visitor parking in an attractive, terraced, landscaped setting.

NOTE: "Entry Gateway Features" are located on the main access to the City Centre and should be a prominent feature that can be seen on approaching the City Centre. "Focal Point Buildings" are located on important corners to give emphasis to special places. See Figure A3.3 below.

Figure A3.2 - Design of entry gateway features and focal point buildings

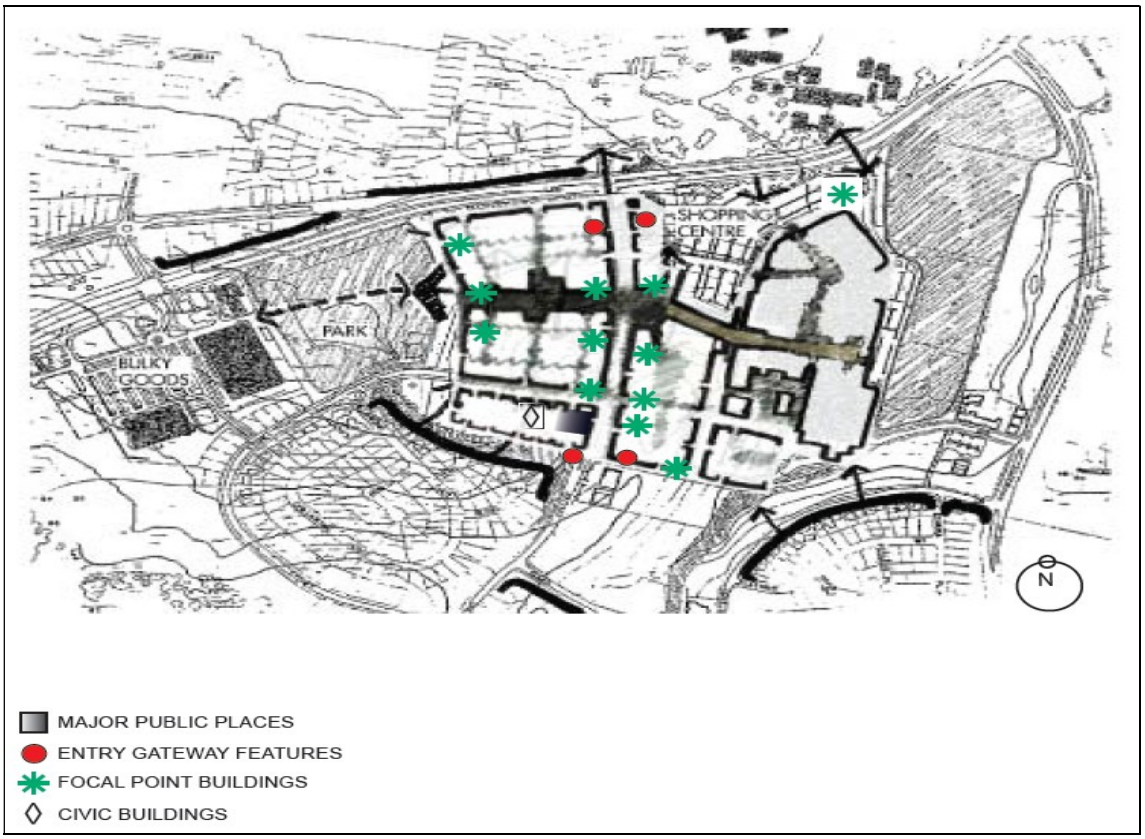


Entry Gateway Features



Focal Point Buildings

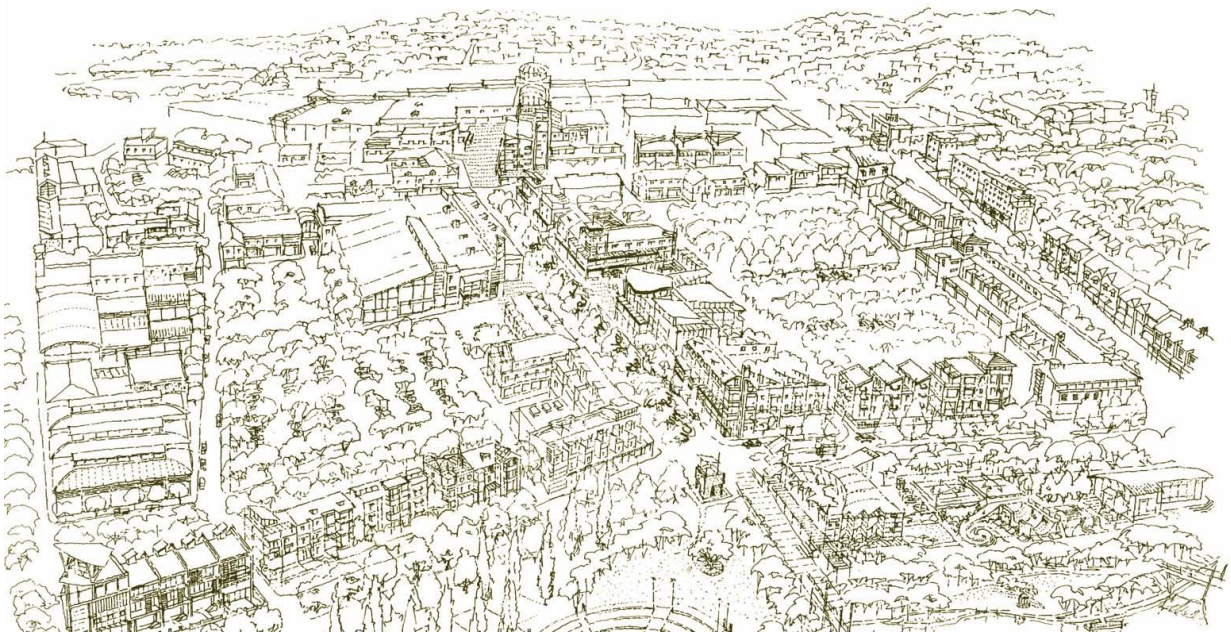
Figure A3.3 - Location of major public places, entry gateway features, focal point buildings and civic buildings



A3.8 - Shellharbour City Centre Masterplan

Figure A3.4 - Notional Masterplan plan and perspective





Concept

A3.8.1 The Master Plan is a provision of this DCP and is based on the principles to create a fully integrated centre - one where pedestrian friendly, retail, entertainment, commercial, cultural and residential uses co-exist and benefit from their interaction. It must be reinforced that the city will only thrive if the pre-conditions for commercial activity - parking, access, pedestrian traffic and quality streets are given priority.

A3.8.2 Major features of the Masterplan include:

a. a grid block development framework

b. an integrated public transport/pedestrian amenity system

c. a more flexible, less congested, road system

d. generally mixed use development with specific areas recommended for compatible uses (retail/entertainment, showroom/bulky goods, commercial/residential and mixes of the aforementioned)

e. a major City Park on the western side of the City Centre which incorporates active uses, water features and passive areas

f. a “main street” retail/entertainment area which is public domain, 24 hours accessible and connects the Harrison Park with the Stockland Shellharbour.

Planning/development principles

A3.8.3 Establish strong connections with existing retail/commercial development.

A3.8.4 Create a flexible framework for future growth.

A3.8.5 Enhance open space and drainage areas as valuable public domain elements.

A3.8.6 Create strong and attractive public domain.

A3.8.7 Seek appropriate sites for future civic and entertainment precincts.

A3.8.8 Encourage a diversity of commercial, retail, entertainment and civic uses.

A3.8.9 Encourage mixed use development (retail/commercial, retail/residential) where possible to improve vitality and viability of Centre.

A3.8.10 Ensure ready access and circulation of public transport.

A3.8.11 Ensure adequate parking with potential for some future structured/underground parking.

A3.8.12 Create public places, civic focus and people places taking advantage of short and long views and proximity to open space/drainage features.

A3.8.13 Link Stockland Shellharbour Shopping Centre and Memorial Drive with a public space that is of appropriate scale and has a sense of enclosure surrounded by active uses.

A3.8.14 Develop a central spine to focus activity with distinct public spaces along its length.

A3.8.15 Facilitate the creation of a vibrant, active, safe and pedestrian orientated main street.

A3.8.16 Improve levels of integration for pedestrians, cyclists, bus users and motorists and clearly define and contain the City Centre edge.

A3.8.17 Respond to realistic market demand in staging.

A3.8.18 Ensure attractive edge treatment to New Lake Entrance Road.

A3.8.19 Create a highly visible and urban character so that the City Centre is easily recognisable.

A3.8.20 Encourage a modern and contemporary architectural style, high standard and quality building design in the City Centre.

A3.8.21 Work towards ensuring an appropriate balance between economic, social and environmental issues.

A3.8.22 Ensure good levels of visual permeability and pedestrian connectivity within and between precincts.

Landuse strategy

A3.8.23 The Masterplan illustrates a notional distribution of land uses compatible with the proposed master plan. The principal features of this plan are:

a. the large existing retail/commercial floor space and bulky goods area (Stoney Range)

b. the provision of additional retail, entertainment and cultural uses along the "main street" connecting Stockland Shellharbour to the Harrison Park

c. the provision of bulky goods uses overlooking New Lake Entrance Road

d. the provision of support retail/showrooms perhaps with commercial or residential uses over along College Avenue and Cygnet Avenue

e. the provision of residential uses in areas of high amenity and on the edges of the city centre. These could, in many cases, contain mixed uses with retail, entertainment, commercial, home office at ground level and residential above

f. the provision of central block public car parking for retail/entertainment/visitor use and private under building parking

g. the provision of a major city park at the western end of the City Centre

h. service trades/support uses do not realistically need to be located within the centre, however, opportunity will exist in some cases to provide service/support uses (e.g. auto service etc) in undercroft building areas fronting onto and accessed from rear lanes and central block parking areas

i. The key criteria for ensuring the success of the City Centre are:

    i. concentrate activity on the main street (Memorial Drive)

    ii. connect the main street with Stockland Shellharbour by way of a new major entry point into the shopping centre

    iii. create attractive and active public spaces along the main street and at the connection of main street and Stockland Shellharbour (the City Square).

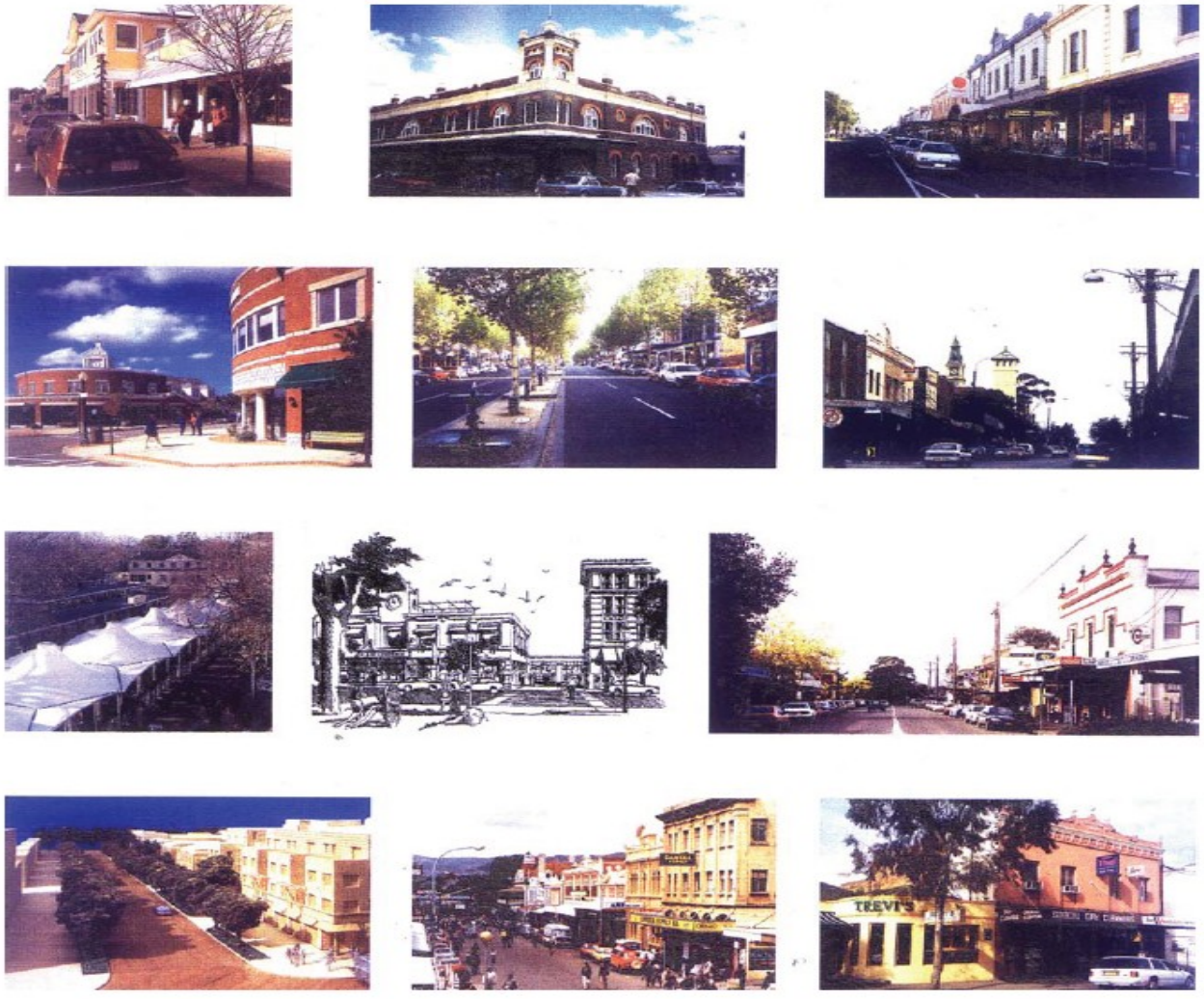
Desired future character

Main street atmosphere

Figure A3.5 - Main street



Figure A3.6 - Main street images



A3.8.24 **Figure A3.6** above evokes the desirable characteristics of the “main street”. features include:

a. wide public footpaths with pedestrian shelter

b. the lower section of main street west of College Avenue (Memorial Drive) to be a wide street (25 m) with central planted median with two travel lanes, two parallel short term parking lanes and wide footpaths, creating a boulevard feel

c. the upper section of “main street” east of College Avenue (Lamerton Crescent) to connect and integrate with the entry to Stockland Shellharbour. Desirably the “Main Street” character will continue into the shopping centre as an unroofed pedestrian street

d. promote active frontages to generate activity on street level

e. a diversity of building types and styles but with a common vocabulary

f. buildings to be broken into a series of vertical elements to create a vertical street rhythm

g. emphasis (height and detail) of building corners

h. buildings to have a defined parapet, cornice or roof element

i. generally 2 - 3 storey development, with potential for taller buildings to the south of the City Square and on certain corners

j. a mix of entertainment, retail, cultural and commercial uses with opportunities for residential apartments above

k. encourage an iconic building on the south side of the City Square.

Street level atmosphere

Figure A3.7 - Street level atmosphere

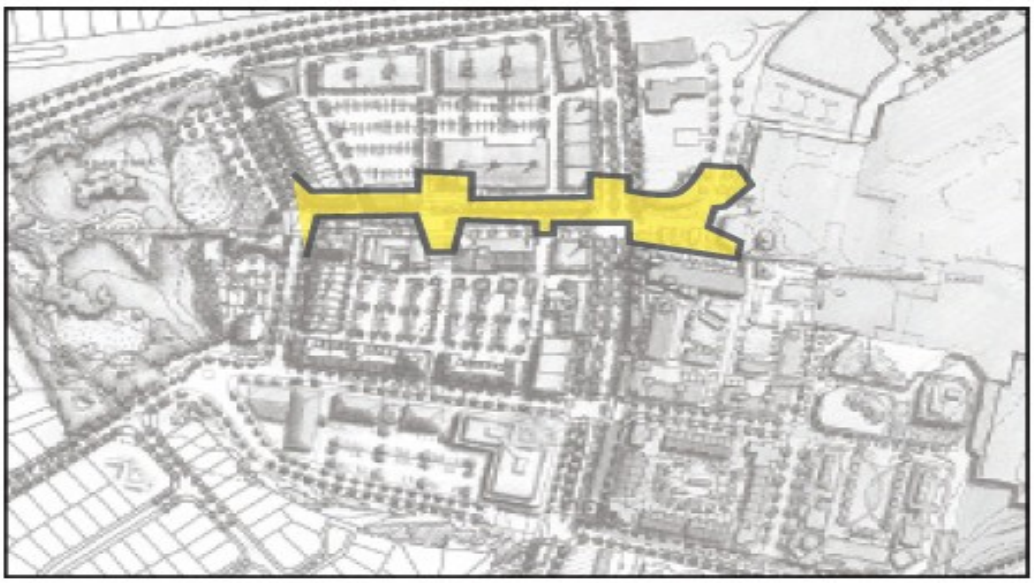
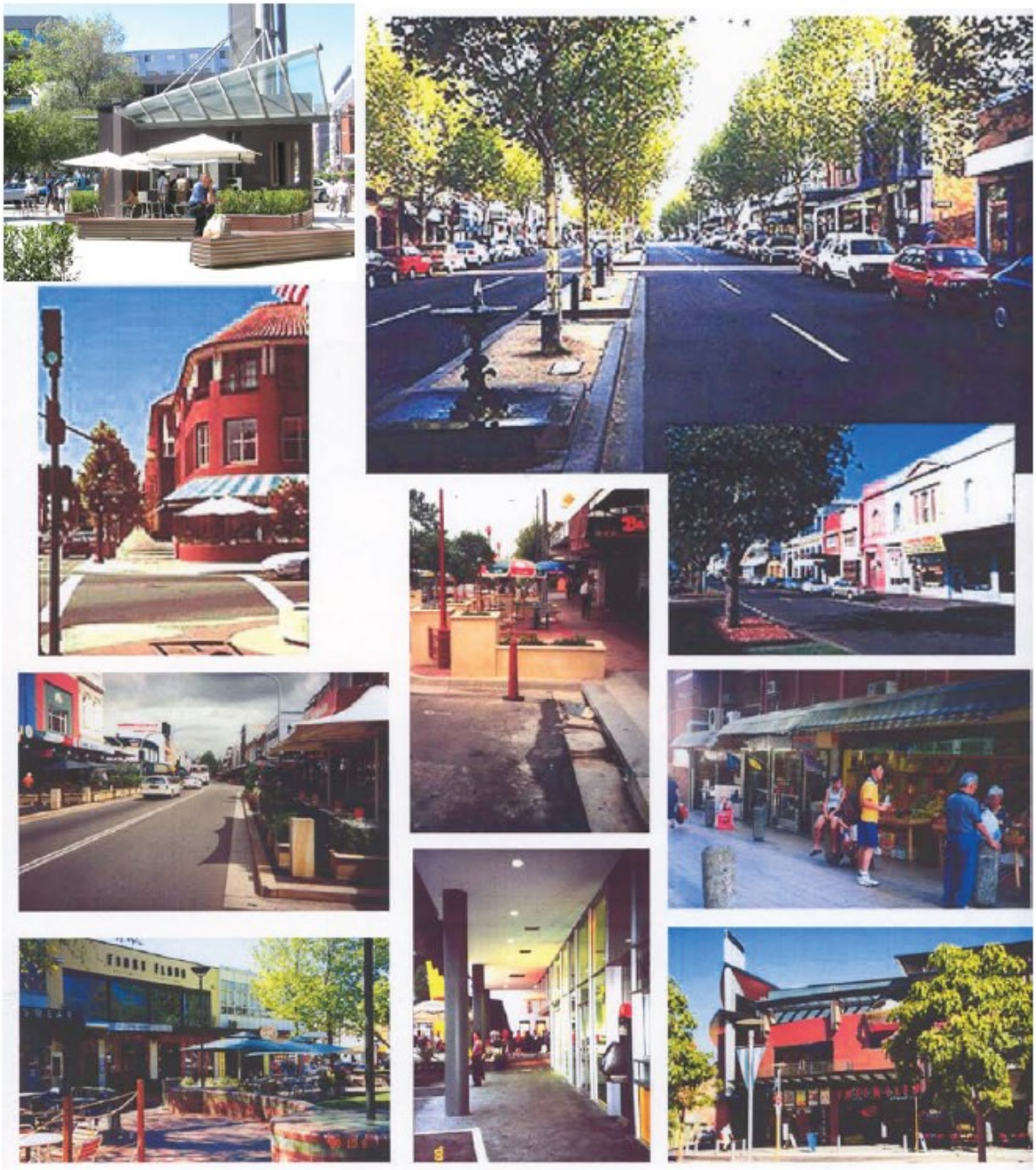


Figure A3.8 - Street level images



A3.8.25 **Figure A3.8** above provides a feel for the general atmosphere desired at street level. Features include:

a. wide footpaths with awnings and verandahs (up to 3 m wide)

b. café/restaurants spilling out onto footpaths

c. high quality landscaping and street furniture

d. activity centres to generate genuine people places

e. informal activities (markets, performance spaces, etc) to support the social, cultural and retail focus of the centre

f. connections with the past to instil a local culture and sense of place

g. attractive, comfortable pedestrian environment

h. consistent, formal street tree planting providing shade and visual appeal

i. design for active uses at night

j. a major public space (City Square) at the interface between Memorial Drive and the entry to Stockland Shellharbour.

Urban places and spaces

Figure A3.9 - Urban places and spaces

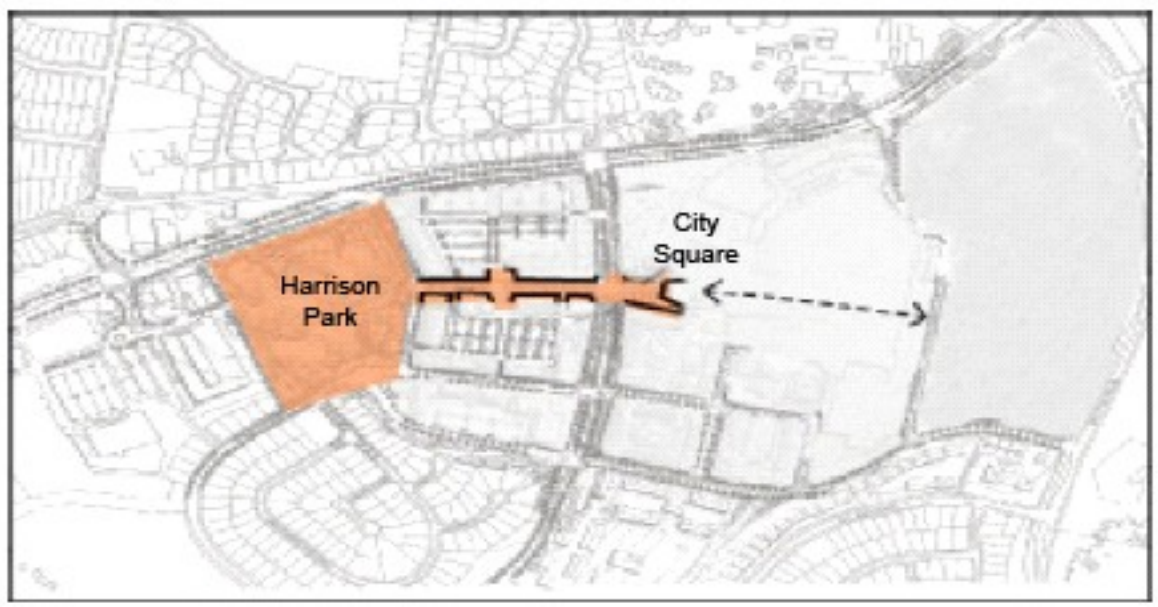
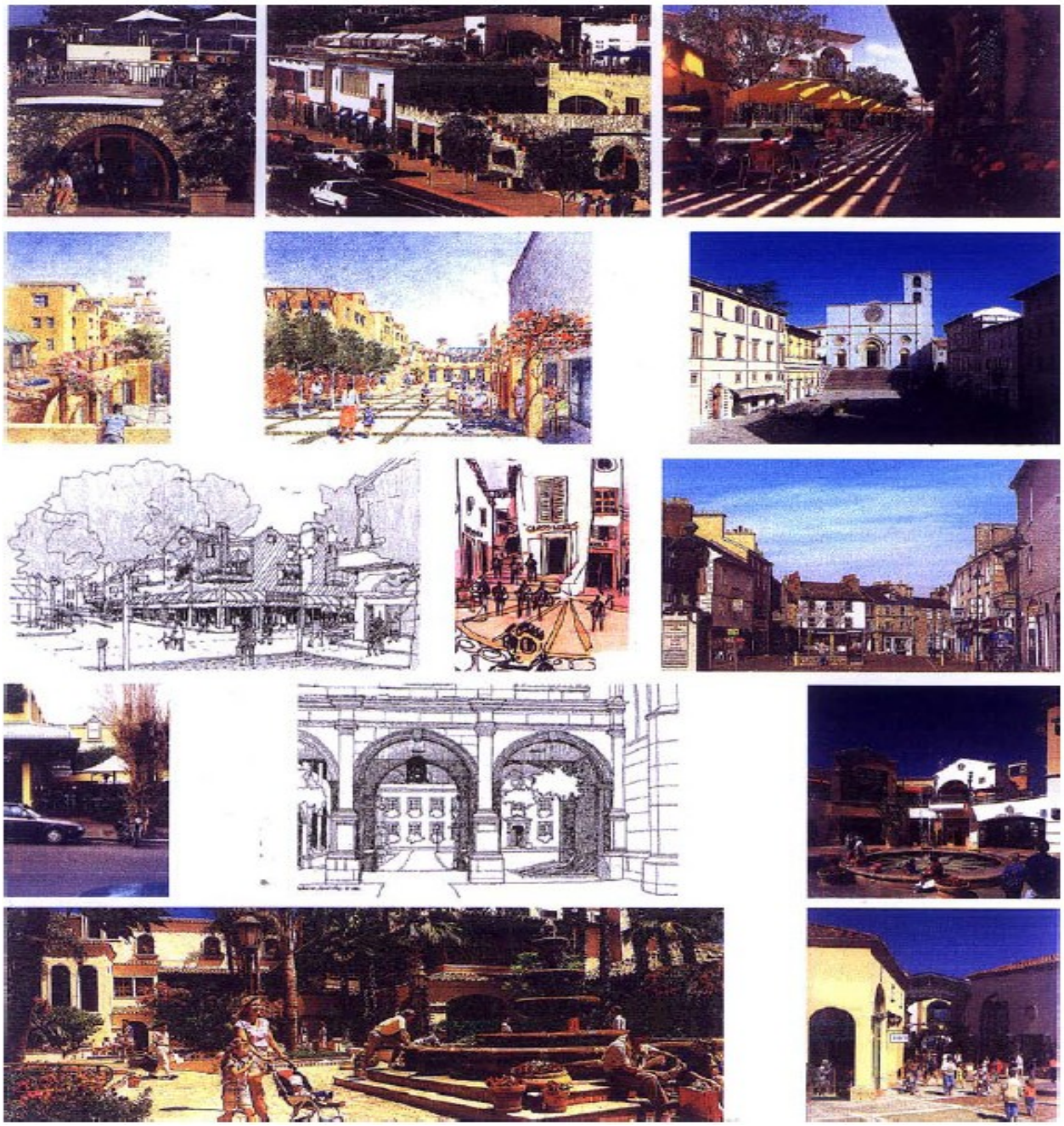


Figure A3.10 - Urban places and spaces images



A3.8.26 **Figure A3.10** above reflects the desired character of places and spaces created by the Master plan.

They indicate the following characteristics:

a. wide footpaths

b. interesting terraces, stairs and level changes

c. a sense of spatial enclosure by building generally to street alignment

d. informal and formal spaces accessed off the main street (Memorial Drive)

e. the use of landscaping, fountains, shading devices to improve pedestrian comfort

f. creation of attractive lanes and walk-throughs (where appropriate) linking main street with parking areas at the rear

g. a major civic space just east of College Avenue (City Square)

h. the inclusion of public art in all major public spaces and throughout the public domain.

Urban boulevards

Figure A3.11 - Urban boulevards



Figure A3.12 - Urban boulevards images



A3.8.27 **Figure A3.12** above suggests contributing elements to the character of the above streets.

A3.8.28 New Lake Entrance Road should be seen as part of the City Centre and the City Centre should create an attractive frontage to it. Travel speeds should be reduced for this section of New Lake Entrance Road and additional access points will improve the functioning and viability of the whole centre. It should have:

a. strong landscape avenue planting and softening of the road by central median planting, including vertical banners

b. buildings to face New Lake Entrance Road across an accessway and serviced by central block parking, some on street kerb side parking

c. bulky goods architecture to be of high quality and contribute strongly to the streetscape

d. architecture to create an image of “City Centre”

e. architecture to provide an enlivened night-time environment with carefully controlled signage.

A3.8.29 College Avenue should be influenced by the following characteristics:

a. strong avenue planting (including median)

b. wide footpaths

c. a mix of retail, small showroom and commercial uses which will enliven the street yet not generate significant on-street parking;

d. co-ordinated signage;

e. on-street parking along College Avenue.

Parking area/rear lane character

Figure A3.13 - Parking Areas

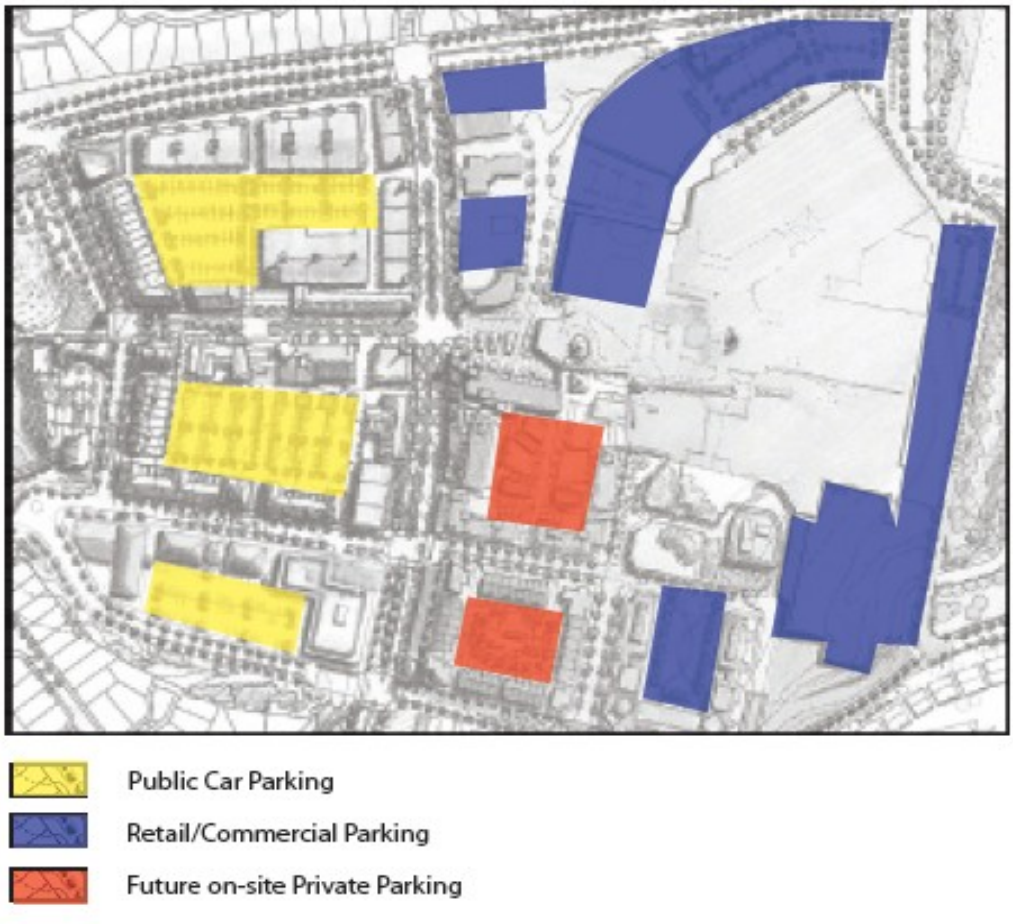
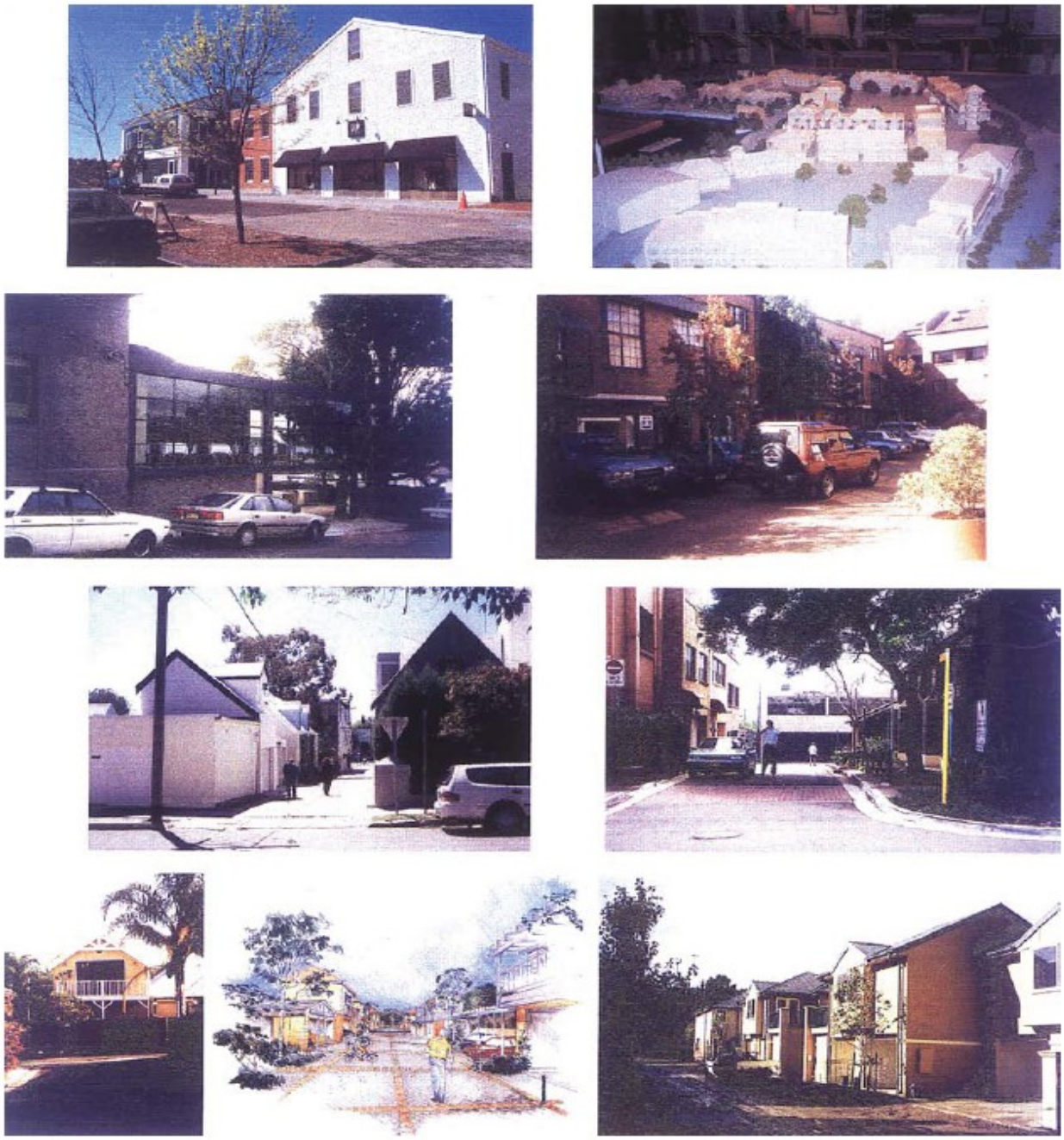


Figure A3.14 - Parking area and lane images



A3.8.30 Parking areas and access lanes should be considered as an integral part of the public domain and not as residue or service only areas. See **Figure A3.14** above. They should be characterised by:

a. good landscaping

b. clear, concise and safe pedestrian environments

c. potential for secondary retail or service trade uses to trade directly onto rear lanes/parking areas particularly where assisted by changes in level

d. general treatment of central parking areas as parking courts

e. where possible active uses and shop frontages should be encouraged to create a safe environment

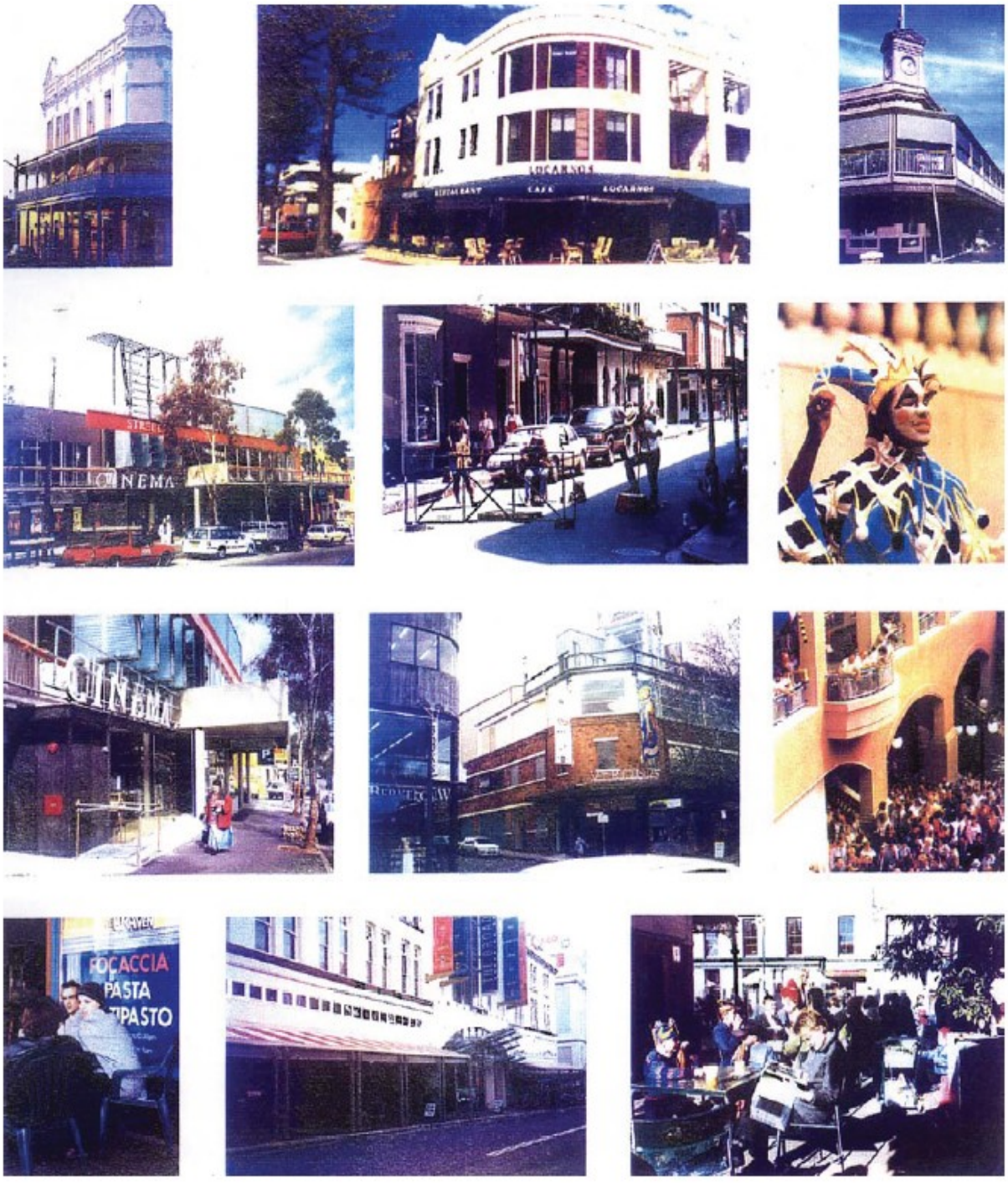
f. where permitted residential/mixed use development should overlook rear lanes and parking areas where possible to provide passive surveillance.

Entertainment uses

Figure A3.15 - Entertainment Area



Figure A3.16 - Entertainment area images



A3.8.31 **Figure A3.16** above indicates some of the major characteristics of entertainment uses which will contribute to the character of the centre. These include:

a. a lively variety of colours and materials

b. the use of wide verandahs over the footpaths, particularly where level changes assist and views are available

c. potential for multi-level viewing of main street and town square

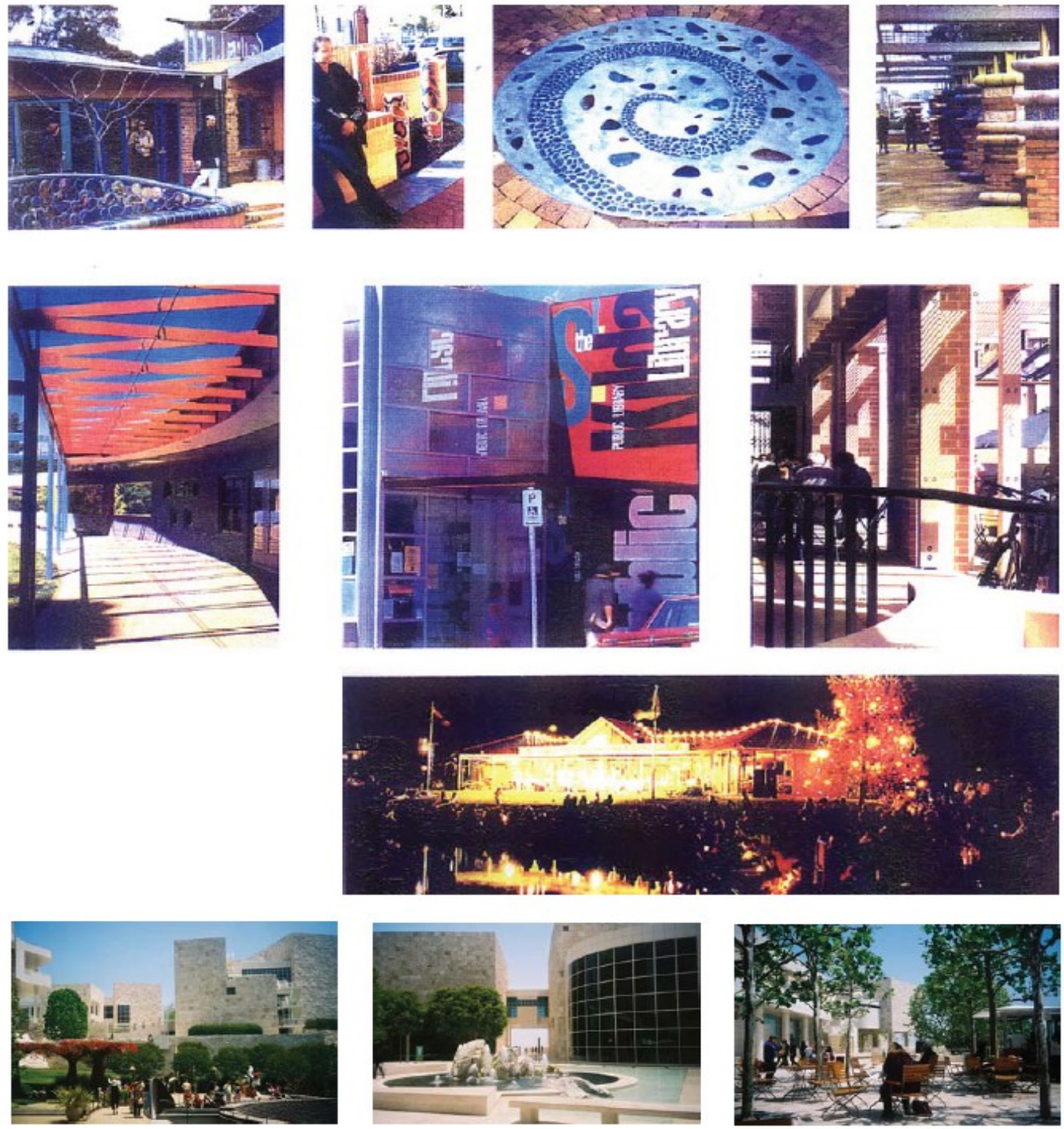
d. synergetic land uses to enliven the public domain

Civic and cultural uses

Figure A3.17 - Civic and cultural area



Figure A3.18 - Civic and cultural images



A3.8.32 **Figure A3.18** above aims to show the types of possible character of the civic and cultural facilities. These include:

a. public and cultural facilities - library, museum, arts centre, performance areas, civic facilities and civic administration

b. strong interaction between cultural uses, commercial and entertainment uses in the centre

c. potential for large social/cultural gatherings in the City Park

d. recreation courts and skate park on edge of park

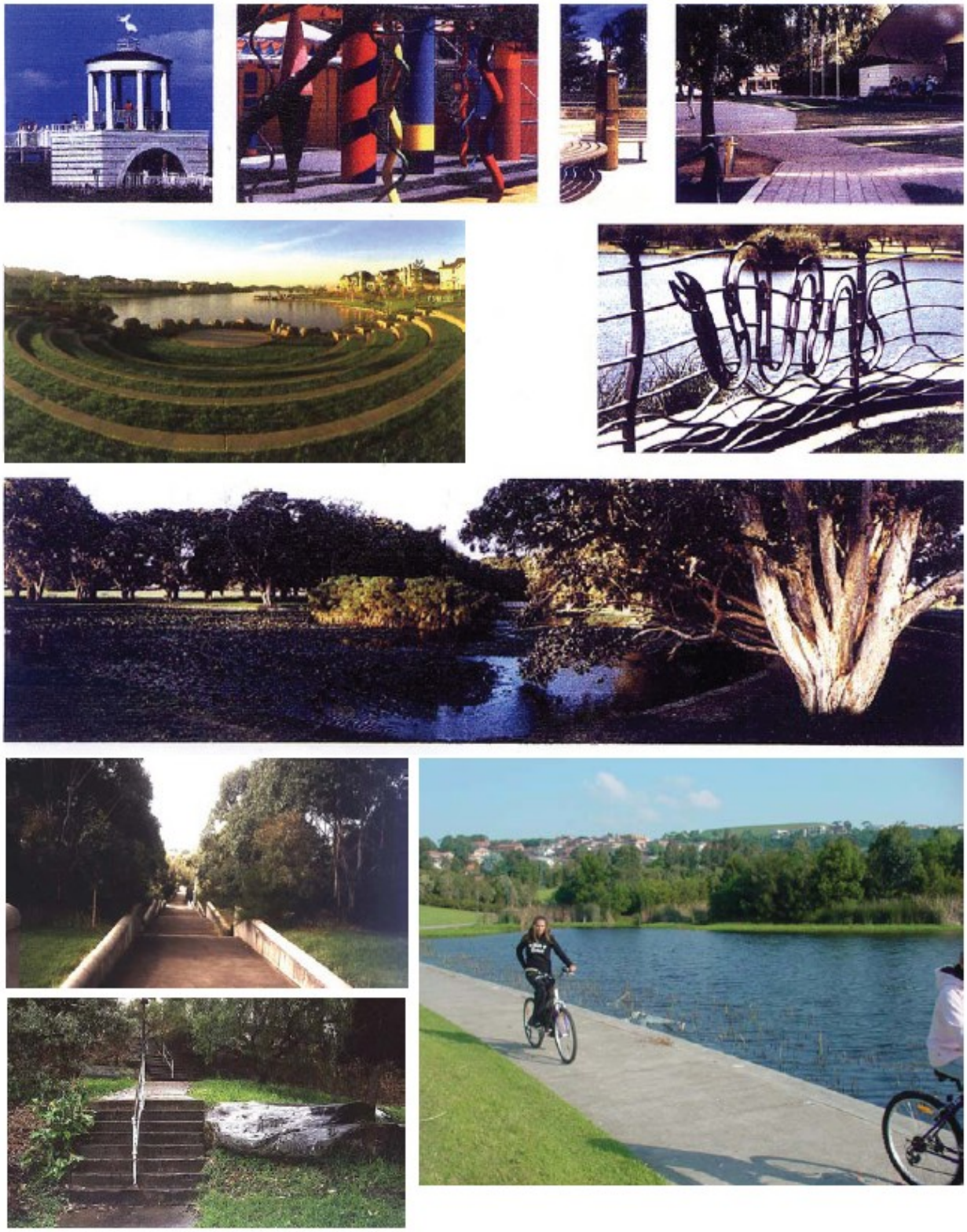
e. banners, signs, public art, entertainment and lighting to enliven the streetscape.

Character of city parks

Figure A3.19 - Harrison Park (formerly City Park)



Figure A3.20 - City park type images



The objective is to provide edge activities to overlook the main park areas to add to its safety and activity.

A3.8.33 **Figure A3.20** above indicates some of the possible characteristics contributing to the City Parks. These include:

a. different personalities for different parts of the park - a formal recreation/cultural edge, a natural wetland/lake system and a passive area of park/bush land

b. structures for different activities incorporated into park design (amphitheatre, lookout, sculpture garden, walking paths, nature trail, etc.

c. a large wetland/lake with perhaps a hard edge to the city side, a bird refuge island in the lake, and a natural wetland habitat on the southern and western edges

d. skate park, hard courts and play areas to be part of the recreation edge.

APPENDIX 4 - TELECOMMUNICATIONS AND RADIO COMMUNICATIONS

A4.1 - Definitions

The meanings of the following terms used in this policy, are included here for clarification only and do not replace the definitions contained within the legislation.

Co-location: the practice of locating a number of different communications facilities, often owned by different carriers, on one facility or structure.

Community sensitive: *locations* these may include areas:

- Where occupants are located for long periods of time, for instance residences
- That are frequented by children, for instance schools, child care centres
- Where there are people with particular health concerns for instance hospitals, aged care centres
- Considered significant to indigenous communities.

Cumulative impact: the sum of the impacts from a number of different sources or over time.

Electromagnetic radiation (EMR) or electromagnetic energy (EME): the radiation in the microwave and radio frequency band of the electromagnetic spectrum.

Low-impact facility: a facility that is exempted from State and Council local planning laws under the *Telecommunications (Low-impact Facilities) Determination 1997*.

Radio communications: a base station or radio communications link, satellite-based facility or facility radio communications transmitter.

Telecommunications facility: any part of the infrastructure of a telecommunications network. It includes any telecommunications line, equipment, apparatus, telecommunications tower, mast, antenna, tunnel, duct, hole, pit, and pole or other structure or thing used, or for use in connection with a telecommunications network.

Telecommunications network: a system, or series of systems, that carries, or is capable of carrying, network communications by means of guided and/or unguided electromagnetic radiation.

A4.2 - Relevant legislation and industry codes of practice

Telecommunications Act 1997

The *Commonwealth Telecommunications Act 1997* establishes a regime for carriers' rights and responsibilities when inspecting, maintaining or installing telecommunications facilities.

This policy clarifies the expectations of Council on carriers who operate under the Act.

Radio Communications Act 1992

The *Radio Communications Act 1992* regulates radio communications transmitters. It provides for the licensing of radio communications equipment and applies mandatory standards to its use.

This policy clarifies the expectations of Council on carriers who operate under the Act.

Telecommunications Code of Practice 1997

The *Telecommunications Code of Practice 1997* establishes obligations on carriers in land-access situations such as when inspecting land, installing low-impact facilities and maintaining facilities. It also requires carriers to comply with recognised industry codes and standards.

This policy clarifies and standardises the expectations of Council in respect to land-access situations.

Telecommunications (Low-impact) Facilities Determination 1997

The *Telecommunications (Low-impact) Facilities Determination 1997* exempts telecommunications infrastructure classified as "low-impact" from compliance with State and local government regulations. This classification relates primarily to visual appearance and size, rather than emissions. See http://www.comlaw.gov.au. .

The Mobile Phone Base Station Deployment Industry Code (C564:2011)

The Code replaces the *C564:2004 Deployment of Mobile Phone Network Infrastructure Industry Code published by Communications Alliance in December 2004.*

The objectives of this revised Code are:

- to encourage an upfront collaborative approach between Carriers, local Councils and the community for proposed deployment of new mobile phone base stations
- to enhance the level of information supplied to Councils and the community with respect to mobile phone base stations
- to specify and improve standards in particular relating to consultation, accessibility and availability of information
- to identify at an early stage community sensitive locations and to apply a Precautionary Approach towards the deployment of mobile phone base stations
- to ensure appropriate levels of notification and consultation are undertaken by the Carriers to local Councils and communities.

The Code supplements the requirements already imposed on Carriers under the existing legislative scheme by requiring them to consult with local communities and to adopt a Precautionary Approach in planning, installing and operating mobile phone base stations. See Communications Alliance website.

Other

- *ARPANSA Technical Report on Radio Frequency EME Exposure Levels - Prediction Methodologies. See http://www.arpansa.gov.au*
- *ARPANSA Template for Environmental EME Reports. See ttp://www.arpansa.gov.*au

- *State Environmental Planning Policy (Infrastructure) 2007*: provides a consistent planning regime for infrastructure and the provision of services across NSW, along with providing for consultation with relevant public authorities during the assessment process. The SEPP supports greater flexibility in the location of infrastructure and service facilities, including telecommunications/radio communications facilities, along with improved regulatory certainty and efficiency.
- *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008:* the policy provides exempt and complying development codes that have State-wide application, identifying, in the General Exempt Development Code, types of development including aerials, antennae, communications dishes that may be carried out without the need for development consent. See the Department of Planning and Environment website.
- *NSW Telecommunications Facilities Guideline* including Broadband. See the Department of Planning and Environment website.
- *Guidelines for Better Visual Outcomes - Low Impact Mobile facilities*. See Australian Mobile Telecommunications Association website.

A4.3 - Siting guidelines

Visual amenity

A4.3.1 Carriers are to design antennas and supporting infrastructure in such a way as to minimise or reduce the visual and cumulative visual impact from the public domain and adjacent areas.

A4.3.2 Infrastructure design must be consistent with the character of the surrounding area.

A4.3.3 Within the local context, the infrastructure design must take account of: -

a. Colour

b. Texture

c. Form

d. Bulk and scale.

A4.3.4 Infrastructure must:

a. Be well-designed

b. Be integrated with the existing building structure unless otherwise justified in writing to Council

c. Have concealed cables where practical and appropriate

d. Be unobtrusive where possible.

A4.3.5 Wherever technically feasible, antennas and mast structures should either not be visible, or should be as visually unobtrusive as possible, from the fronting road at pedestrian eye level. Wherever technically feasible they should be located to minimise their obtrusiveness. This may for instance result in infrastructure being located towards the rear of a building roof top.

A.4.3.6 Wherever possible, towers should be of 'slimline monopole' construction. A discussion on facility design can be found in the Mobile Carriers Forum's Guidelines for Better Visual Outcomes – Low-impact Mobile Facilities that can be accessed at www.mcf.amta.org.au.

A4.3.7 The site must be restored following construction of the infrastructure.

A4.3.8 Infrastructure must be removed when no longer being used.

Co-location

A4.3.9 Co-location is the practice of locating a number of different telecommunication facilities often. Owned by different carriers on one (1) facility or structure.

A4.3.10 Co-location may reduce the cumulative visual impact of a number of different facilities in an area.

A4.3.11 Co-location may, however not always be a desirable option where:

a. Adding additional antennas increases emissions

b. It may be visually unacceptable

c. There are physical and technical limits to the amount of infrastructure that structures are able to support

d. The required coverage cannot be achieved from the location.

A4.3.12 Carriers should demonstrate a precautionary approach and account for the principles of ecologically sustainable development in determining effective measures to minimise the negative impacts of co-location.

Location

A4.3.13 The applicant should demonstrate that, in selecting a site, it has adopted a precautionary approach and accounted for the principles of ecologically sustainable development in regards to minimising EMR exposures consistent with the *Mobile Phone Base Station Deployment Industry Code (C564:2011)*

A4.3.14 Preferred land uses include:

a. Industrial areas

b. Rural areas

c. Low-use open space.

A4.3.15 The applicant should demonstrate particular consideration of likely community sensitive locations. Community sensitive locations may include areas:

a. where occupants are located for long periods of time (eg residences)

b. that are frequented by children (e.g. schools, child care centres)

c. where there are people with particular health concerns (e.g. hospitals, aged care centres).

A4.3.16 A facility should not be located in an area where in the opinion of Council the landform, vegetation or features of a proposed location have special aesthetic, architectural, ecological or conservational value, or where such features will not adequately screen or reduce the impact of the facility.

Heritage

A4.3.17 The applicant is to have regard to avoiding or minimising the visual impact of any proposed facility on the heritage significance of any adjoining or nearby heritage item and/or contributory items within a Heritage Conservation Area (HCA) as identified in LEP 2013.

A4.3.18 Where a facility is proposed upon land containing an item of environmental heritage or land within a HCA as identified in LEP 2013. A heritage impact assessment report will be required.

A4.3.19 A facility should not be located in a locality where in the opinion of Council the streetscape is dominated by heritage buildings or the heritage significance of adjoining or nearby items of environmental heritage and/or HCA's may be adversely impacted upon.

A4.3.20 A facility should not be located on roof tops where the building is an item of environmental heritage item or is located within a HCA as identified in LEP 2013.

Facility physical design controls

A4.3.21 Infrastructure must be of high quality design and construction.

A4.3.22 Proposals should consider the range of available alternate infrastructure including new technologies, to minimise unnecessary or incidental EMR emissions and exposures. The plan for the facility must include measures to restrict public access to the antenna(s). Approaches to the antenna(s) must contain appropriate signs warning of EMR and provide contact details for the owner and/or site manager of the facility.

Facility health controls

A4.3.23 Documentary evidence is required which proves that the proposed facility complies with the relevant Australian exposure standard as specified by the Australian Communications and Media Authority.

NOTE: The current Australian Standard as specified by the Australian Communications and Media Authority is Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), 2002, 'Radiation Protection Standard - Maximum Exposure Levels to Radiofrequency Fields - 3kHz to 300GHz', Radiation Protection Series Publication No. 3, ARPANSA, Yallambie Australia available from http//www.arpansa.gov.au.

A4.3.24 Development applications in community sensitive locations and that are within 300 metres of existing not low-impact type facilities licensed by the Australian Communications and Media Authority are to be accompanied by an EMR assessment in accordance with the ARPANSA prediction methodology and report format demonstrating that the development is not subject to exposure standards above that specified by the Australian Communications and Media Authority.

A4.3.25 The Development application must also be supported with a map which analyses the cumulative effect of the proposal and shows the proposal's EMR levels, bearing in mind the relevant Australian exposure standard.

A4.3.26 The choice of site should also take into account likely future adjoining land uses.

A4.3.27 In determining the above criteria under Siting Guidelines, the applicant must undertake a site/locality analysis according to the Development application requirements.

A4.4 - Development applications requirements

A4.4.1 DAs will need to be accompanied by:

a. A 360° prediction map of exposure levels at 1.5 metres above publicly accessible surfaces for a proposed facility within 300 metres of a likely community sensitive location, or for other sites upon request

b. Certification from a suitably qualified and practising professional that the exposure details contained in the EMR assessment report/application is true and accurate.

A4.5 - Policy compliance checklist

The following is a checklist for DA proponents and assessors.

Visual amenity

A4.5.1 Has the proposed facility been designed so as to minimise visual impact from the public domain?

A4.5.2 Does the design minimise or reduce the cumulative visual impact from the public domain?

A4.5.3 Does the design take account of:

a. colour

b. texture

c. form

d. bulk and scale?

A4.5.4 Is the proposed infrastructure well designed:

a. integrated with the existing building structure

b. incorporating concealed cables

c. integrating the shelters with building structure

d. unobtrusive as possible

e. consistent with the character of the surrounding area?

A4.5.5 For any proposed tower(s), has 'slimline monopole' construction been considered?

A4.5.6 Does the proposal include restoration or enhancement of the site following construction of the infrastructure?

A4.5.7 Does the proposal include removal of the infrastructure when it is redundant?

Co-location

A4.5.8 Does the proposed facility require co-location? If so;

a. does it minimise cumulative emissions for neighbouring residents or other sensitive land uses?

b. does it result in an unacceptable visual impact?

Location

A4.5.9 Has the applicant demonstrated that, in selecting a site, it has adopted a precautionary approach in regards to minimising EMR exposures?

A4.5.10 Is the proposed facility in a preferred land use area?

A4.5.11 If the proposed facility is in an area containing community sensitive locations, has it considered the Mobile Phone Base Station Deployment Industry Code?

APPENDIX 5 - BANK STABILISATION

A5.1 - Development application information

A5.1.1 The following information outlines the minimum requirements that must be included and/or addressed with a development application.

a. The design of any bank stabilisation must consider a range of techniques and not be limited to hard engineering solutions. Designs are to allow for habitat complexity and transition between terrestrial and aquatic environments through appropriate design and use of native foreshore and estuarine vegetation.

b. All proposals for estuaries and other tidally influenced waterways are to clearly demonstrate that the guidelines in Environmentally Friendly Seawalls - A Guide to Improving the Environmental Value of Seawalls and Seawall-lined Foreshores in Estuaries 2009 have been considered and where appropriate incorporated into the design. The applicant must demonstrate how these guidelines have been appropriately applied prior to the approval of any foreshore stabilisation or rehabilitation works.

c. A site specific approach must be adopted to ensure that the environmental sensitivity of a site is considered and foreshore protection measures do not exceed what is required to appropriately address foreshore recession.

d. All structural designs must be certified by a suitably qualified engineer. It must be clearly demonstrated that structural components have been designed with consideration given to any flooding or coastal processes.

e. Native riparian and estuarine vegetation is to be retained where possible.

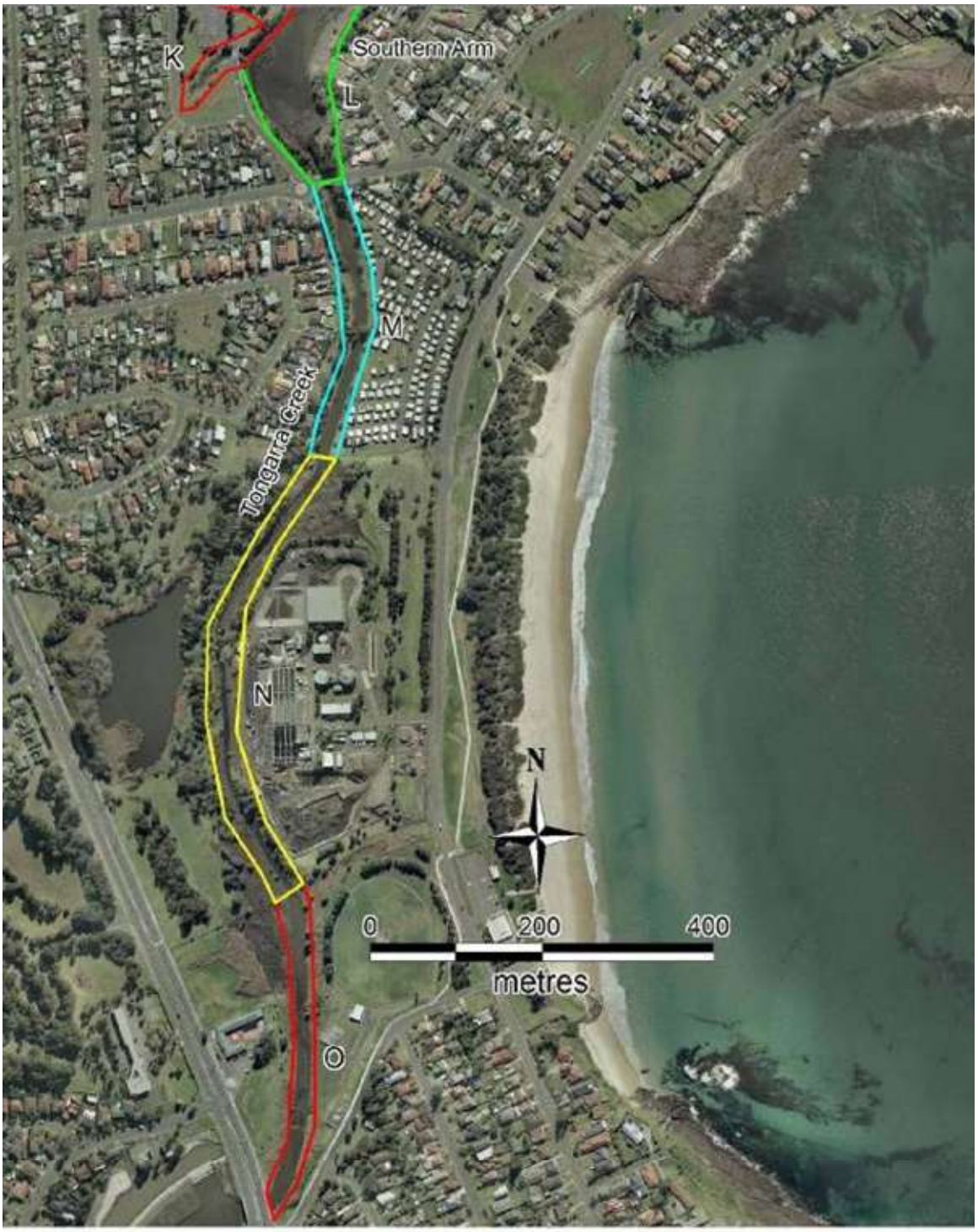
f. Design options for tidal reaches of Elliott Lake as identified on the maps in **Figure A5.1 and A5.2** below, are to be prepared in accordance with these general requirements and the recommendations for specific reaches listed in Table 2 Foreshore Options for Tidal Reaches of Elliott Lake (2009).

g. All planting schedules for any works proposed within tidal reaches of Elliott Lake as identified on the maps in **Figure A5.1 and A5.2** below, are to be developed in accordance with those detailed in the Baseline Biodiversity Survey, Elliott Lake, Shellharbour (2008) and approved by Council. **Figure A5.1 and A5.2** below correlate with the planting schedules contained in this document.

Figure A5.1 - Bensons and Oakleigh Creeks - Reaches A to L (northern arm of Elliott Lake)



Figure A5.2 - Tongarra Creek - Reaches M to O (southern arm of Elliott Lake, parallel to Shellharbour North Beach)



PART 5 - APPENDICES RELATING TO PART 3 - PROVISIONS FOR VARIOUS TYPES OF LANDUSES

APPENDIX 6 - ACCESS FOR PEOPLE WITH A DISABILITY

A6.1 - The Premises Standards

Authority of the Premises Standards

The Federal Disability Discrimination Act 1992 (DDA), and the *NSW Anti-Discrimination Act 1977*, make it unlawful to discriminate against a person with disability in relation to access to, or use of, premises.

While the DDA states it is unlawful to discriminate it does not provide information to assist people responsible for buildings to design, construct or manage buildings in ways that do not discriminate.

The DDA does, however, allow for the development of disability standards to clarify what non-discrimination means.

Disability standards, and in this case the Premises Standards, effectively replace the general non-discrimination requirements of the relevant parts of the DDA.

If a building complies with the Premises Standards those responsible for the building cannot be subject to a successful discrimination complaint in relation to the matters covered by the Standards.

Application of the Premises Standards

The Premises Standards applies to any new building where an application for approval for its construction was submitted to a Council or accredited certifier on or after 1 May 2011.

It also applies to a new part of, or new work on, an existing building, such as an extension or modification, where an application for approval for building work was submitted to a Council or accredited certifier on or after 1 May 2011.

In NSW this is generally the point at which the construction certificate is applied for.

In relation to new parts or new work on an existing building, when an application for a construction certificate is made by the owner of a building or a lessee (where the lessee occupies the whole building) they may be required to also upgrade the 'affected part' of a building.

Affected part means the principal pedestrian entrance to the building and any part of the building that is a necessary part of a continuous accessible path of travel from the principal pedestrian entrance to the new part or upgraded part of the building.

This requirement does not apply when the applicant for a construction certificate is one of a number of lessees in the building.

In some circumstances Crown projects may not require a construction certificate and where this is the case the Premises Standards apply to projects where building work began on or after 1 May 2011.

NOTE: At the same time the Premises Standards were introduced, changes were also made to the BCA to reflect the requirements of the Premises Standards. This means that the two laws now essentially set out the same requirements.

In some cases, where a complying development certificate is sought there is no requirement for a construction certificate. However, it is a statutory condition of complying development certificates that work be carried out in accordance with the BCA. So, in the case of a complying development certificate any new building work undertaken will have to comply with the BCA, including the access requirements.

Classes of buildings covered by the Premises Standards

A6.1.1 The Premises Standards applies to most classes of buildings including:

a. Class 1b – this includes buildings generally used for short-term accommodation such as small hostels, B&B, Farmstay, holiday cabins and bush retreats. The Premises Standards specifies the situations in which access must be provided to some of these facilities.

b. Class 2 – this includes a block of flats or apartment buildings. The Premises Standards only applies to certain common areas in new Class 2 buildings (not Class 2 buildings that existed before the Premises Standards came into force even if they are upgraded or renovated). The Premises Standards also only applies to a new Class 2 building if one or more units within the building are used for public short-term accommodation. However, the BCA access requirements apply to all new Class 2 buildings irrespective of whether or not they contain a short-term rented unit.

c. Class 3 – this includes hotels and motels, residential parts of a school or university and residential parts for staff of a health-care facility.

d. Class 5 – this includes offices and buildings used for professional purposes.

e. Class 6 – this includes shops and other buildings used for the sale of goods or delivery of services to the public including shopping centres, local café and restaurants, hairdressers, markets and bars.

f. Class 7 – this includes car parks (7a) and buildings used for storage and wholesale outlets (7b)

g. Class 8 – this includes laboratories and factories used for the production or assembly of goods.

h. Class 9 – this includes hospitals and health-care buildings (9a), assembly buildings such as cinemas, theatres and convention centres (9b) and aged care buildings (9c).

i. Class 10 – this includes non-habitable buildings or structures such as swimming pools and toilet facilities in a public park.

The Premises Standards does not apply to the internal parts of units within Class 2 buildings, Class 1a buildings (private single houses or townhouses) or Class 4 buildings (single dwellings within another class of building such as a caretaker's flat).

Premises Standards includes, in Schedule 1, an Access Code for Buildings (the Access Code) that provides details of access requirements, limits and concessions for all these classes of buildings.

It is important that the specific requirements set out in the Premises Standards, and specifically within the Access Code, relating to each of these classes of buildings are considered at the concept formation stage of a project to ensure design and budgetary issues are addressed early.

A6.2 - Responsibility for complying with the Premises Standards

A6.2.1 The Premises Standards specify who is responsible for ensuring compliance with its requirements including:

a. Building certifier – a 'building certifier' is a person (or authority) who has responsibility for, or control over, the building or construction approval process for a building. This may include private certifiers, building surveyors and local councils.

b. Building developer – a 'building developer' is a person or organisation with responsibility for, or control over, its design or construction including designers, architects, property developers, builders, project managers and property lessees.

c. Building manager – a 'building manager' is a person who has responsibility for, or control over, any of the matters in the Access Code following construction of the building who is responsible for ensuring the accessibility of the building is maintained including: property owners, property lessees, property managers and operational staff.

Complying with the Premises Standards

- It is unlawful under the DDA to contravene the Premises Standards.
- Enforcement of the Premises Standards is through the DDA complaints mechanism.
- Anyone who has responsibility for, or control over, the design, development, construction, certification and management of a building could be subject to a complaint if they fail to ensure compliance with the Access Code (Schedule 1 of the Premises Standards).

> **Note:** it is reasonable to conclude that compliance with the BCA will ensure compliance with the Access Code of the Premises Standards.

- The Access Code is written in the same style as the BCA in that it includes a number of Performance Requirements that are expressed in broad terms and references a number of technical Deemed-to-Satisfy Provisions.
- Those responsible for buildings can ensure the building complies with the Access Code by complying with relevant Deemed-to-Satisfy Provisions of the Access Code, or proposing an alternative to the relevant Deemed-to-Satisfy Provisions that satisfies the Performance Requirements of the Access Code.

Deemed-to-satisfy compliance and referenced Australian Standards

The Access Code incorporates a number of Australian Standards by reference.

These include:

- AS 1428.1:2009 General requirements for access – New building work (and Amendments 2010), which is the primary Australian Standard relating to building access for people with disability
- AS/NZS 1428.4.1:2009 Means to assist the orientation of people with vision impairment – Tactile ground surface indicators (and Amendments 2010)
- AS/NZS 2890.6:2009 Off-street parking for people with disabilities, and
- AS 1735 Parts 1, 2, 3, 7, 8, 12, 14, 15 and 16 which deal with lifts.

These Australian Standards are referred to in order to provide further technical detail to support the Deemed-to-Satisfy Provisions of the Access Code. These references are consistent with current practice in the BCA. Details of the referenced Australian Standards can be found in Part A3 of the Access Code.

If there is a difference between the technical requirements of the Access Code and any document referenced in the Access Code, including Australian Standards, the Access Code takes precedence.

The Premises Standards only requires compliance with the specific editions of Australian Standards that are referenced in the Access Code. Later and earlier versions of those Australian Standards are not recognised.

However, this would not prevent a building owner or operator from complying with a newer Australian Standard as an alternative approach if to do so would satisfy the Performance Requirements of the Access Code.

Everyone involved in the design, construction and certification of buildings needs to have access to the relevant Australian Standards if they intend following the Deemed-to-Satisfy path for compliance with the Access Code.

Note: While the Premises Standards only require compliance with certain Australian Standards, proponents are encouraged to reference and comply with Australian Standard 1428.2. This standard sets out the requirements for the design of buildings and facilities for people with disabilities. Where appropriate, these requirements are enhanced from the minimum requirements of Part 1. Part 2 also includes requirements for items which are not covered in Part 1, and is intended to be used in conjunction with Part 1. Compliance with Part 2 will ensure compliance with Part 1. Additional information relating to access in kitchens and laundries is provided in Appendix A of AS 1428.2. A summary of the access requirements for specific types of buildings and facilities is provided in Appendix B of AS 1428.2

Alternative approaches

The Premises Standards allow for and encourage innovative solutions to meet the Performance Requirements through the development of new technologies and through the use

of alternative approaches, so long as the proposed solution provides equivalent or better access than the Deemed-to-Satisfy Provisions.

For example, there may be situations, particularly in relation to existing buildings such as heritage buildings, where it might not be possible to meet the Deemed-to-Satisfy Provisions of the Access Code, but an alternative approach might be proposed and approved.

Building professionals are familiar with this approach, which is referred to as an Alternative Solution in the BCA.

Unjustifiable hardship

In exceptional circumstances, particularly in relation to new work on existing buildings, there may be some technical, economic or other constraints on the extent to which full compliance with the Premises Standards can be achieved.

The Premises Standards includes a defence of unjustifiable hardship to deal with exceptional circumstances.

The Building Professionals Board has set up a process including an Access Advisory Committee to assist those in NSW applying for an assessment of unjustifiable hardship. www.bpb.nsw.gov.au.

An application of unjustifiable hardship should be an action of last resort and applicants must demonstrate they will comply with the requirements of the Premises Standards to the greatest extent possible.

An application can only be made by the certifying authority at the construction certification phase of a project and cannot be made at the development consent stage.

A6.3 - Responsibilities at the development consent stage

The trigger for the application of the Premises Standards is at the construction certificate application stage and not at the development consent stage.

However, early decisions about the location, orientation and overall concept of a development can have significant impact on subsequent compliance with the Premises Standards.

Therefore proponents and their designers are strongly encouraged to ensure that access for people with disability is considered and integrated at the design concept formation stage prior to development application lodgement.

Proponents should be aware that a number of conditions may be applied to relevant development consents including, for example:

Building access for people with disability

A6.3.1 Access for people with disability must be provided to and within buildings, including sanitary facilities, in accordance with the *Disability (Access to Premises - Buildings) Standards 2010* (the Premises Standards) and the *Building Code of Australia.* Detailed plans sufficient to enable the Certifying Authority to assess compliance must be provided prior to release of the Construction Certificate.

Car parking for people with disability

A6.3.2 Car parking spaces for people with disability must be provided at the rate specified in the *Disability (Access to Premises - Buildings) Standards 2010 (the Premises Standards)* and the *Building Code of Australia*. An accessible path of travel must be provided from required accessible car parking spaces to an accessible entrance of a building.

Disability discrimination

A6.3.3 The *Disability Discrimination Act 1992 (Commonwealth)* and the *Anti-Discrimination Act 1977 (NSW)* impose a broad range of obligations on persons relating to the prevention of disability discrimination. Development consent does not relieve the applicant, Principal or other Certifying Authority, or any other person of their obligations to ensure compliance with this legislation.

NOTE: It is recommended that advice on access should be obtained from a suitable qualified and experienced person. Proponents might refer to the Association of Consultants in Access Australia as one source of information on how to contact such a person www.access.asn.au

A6.4 - Providing access reports at construction certification stage

A6.4.1 Before issuing a construction certificate, the certifier, whether that is Council or a private certifier, is responsible for assessing whether compliance with the requirements of the Premises Standards will be achieved.

A6.4.2 On occasion, particularly in relation to developments of significant public importance; where complex compliance issues are raised, or where Alternative Solutions are proposed an Access Report prepared by a suitably qualified person may be required by the Principal Certifying Authority prior to the issuing of the construction certificate.

NOTE: Regarding the use of access consultants, proponents should consider seeking advice from a suitable qualified and experienced person to assist with various project phases from concept design to occupation certificate stage. The Association of Consultants in Access Australia is one source of information on how to contact such a person www.access.asn.au

A6.5 - Public places and landscaping

A6.5.1 While not covered by the Premises Standards, any development of public places such as public reserves, public malls, public plaza/squares, footpaths and public places as defined in Section 4(1) of the *Local Government Act* is covered by the general non-discrimination provisions of the DDA.

A6.5.2 The design of public places must comply with the requirements of the DDA and should apply principles derived from the Premises Standards, BCA and relevant Australian

Standards. Consultation with relevant Council Divisions should be undertaken at concept formation stage.

A6.5.3 Landscaping in paved areas should ensure that the pavement does not become uneven by, for instance, root systems pushing up the pavement. Landscaping should also ensure overhanging branches do not result in hazards for blind people or people with low vision.

APPENDIX 7 - PLANT LISTS FOR SHELLHARBOUR LGA

A7.1 - Suitable plant species

* Species not recommended for the average size lot.

(L) Local native species (Sydney to Nowra)

Table A7.1 - Suitable Eucalyptus

BOTANICAL NAME	COMMON NAME	HEIGHT	COMMENTS
E. amplifolia*	Cabbage Gum	10-20m	• tolerates poorly drained low lying areas
E. bosistoana*	Coast Grey Box	10-20m	• upper branches smooth white
E. botryoides*	Bangalay	10-20m	• occurs in a variety of habitats close to coastal areas • mainly well drained soils
E. cladocalyx 'Nana'	Dwarf sugar gum	6m	• small variety suitable for small gardens
E. citriodora* (Corymbia)	Lemon Scented Gum	15m	• smooth grey trunk, aromatic leaves
E. crebra*	Narrow-leaved Ironbark	10-20m	• coarse dark bark, tall slender trunk
E. eugenioides*	Thin-leaved Stringy Bark	15m	• suitable for clay soils
E. eximia (Corymbia)	Yellow Bloodwood	10m	• small tree • grey tessellated bark yellow underneath • yellow flowers
E. eximia 'Nana' (Corymbia)	Small Yellow Bloodwood	5m	• attractive tree • yellow flowers
E. gummifera* (Corymbia)	Red Bloodwood	10m	• straight single trunk or multi stemmed • tessellated grey bark red underneath • poor soil conditions
E. globoidea*	White Stringy Bark	20m	• suits sandy, gravely, loamy soil
E. haemastoma* (L)	Scribbly Gum	10m	• white smooth bark with scribbly markings • park specimen
E. leucoxylon	Red Flowered Yellow Gum	6-10m	• one of few small eucalyptus variable shape • smooth, mottled bark
E. longifolia*	Woollybutt	up to 30m	• low, spreading crooked branches • suits poor conditions
E. maculate*	Spotted Gum	20+m	• tall, straight, smooth barked tree • blue/cream mottled trunk
E. microcorys*	Tallowood	20+m	• attractive horizontal branching habit • suits deep loam, but will tolerate clay and sandy soils
E.paniculate*	Grey Ironbark	15-20+m	• hard, deep furrowing grey bark • heavy or loamy soils

BOTANICAL NAME	COMMON NAME	HEIGHT	COMMENTS
E. piperita* (L)	Sydney Peppermint	15m	• rough fibrous bark, aromatic foliage
E. pilularis*	Blackbutt	20+m	• dark fibrous stocking of bark covering most of the trunk • upper trunk/limbs smooth white
E. quadrangulata*	White Topped Box	20+m	• long straight trunk, dense crown • suits clay loam or clay soils
E. robusta*	Swamp Mahogany	10-20m	• coastal areas only • swampy, sandy or clayey soils
E. saligna* (L)	Sydney Blue Gum	35m	• bluish grey bark • clayey soils • susceptible to leaf lerp
E. saligna x botryoides (L)		15m	• tolerates poor soils • flaky bark • susceptible to leaf lerp
E. smithii*	Gully Gum	30m	• fine bluish foliage • coastal slopes • clayey soils
E. sideroxylon	Mugga Ironbark	Up to 30m	• irregular crown • pendant grey-green leaves • dark brown-black bark
E. stricta (L)	Blue Mountains Mallee	5m	• exposed rocky sandy sites • mallee-multi trunked • smooth grey mottled bark
E. tereticornis*	Forest Red Gum	10-20m	• smooth white or mottled bark • large open crown

Table A7.2 - Suitable trees

BOTANICAL NAME	COMMON NAME	HEIGHT	COMMENTS
Acacia binervata (L)	Two Veined Hickory	10m	• bright green large shrub tree • away from coastal areas
Acacia floribunda (L)	White Sally	4m	• attractive, abundant flowering • graceful tree • pendulous branches
Acacia longifolia (L)	Sydney Golden Wattle	6-10m	• sandy soils • coast to mountains
Acacia longifolia var sophorae (L)	Coast Wattle	6m	• very salt tolerant • sea front plantings • roots have a binding effect
Acacia mearnsii (L)	Black Wattle	8m	• fast growing • short lived
Acmena smithii (L)	Lilly Pilly	6-20m	• hardy tree – suits wide range of soils • specimen tree or group plantings
Agonis flexuosa	West. Aust. Weeping Myrtle	8-12m	• willow like and peppermint scented foliage • good shade tree
Allocasuarina torulosa (L)	Forest Oak	12-20m	• graceful tree • hard deep furrowed bark with a corky appearance • spreading, drooping habit
Allocasuarina verticillata (L)	Drooping She Oak	5-10m	• distinct drooping habit • exposed coastal areas to sheltered sites
Alphitonia excelsa (L)	Red Ash	6-10m	• suited to drier locations • suitable shade tree or part of mass planting • numerous small creamy flowers Dec-Mar
Angophora costata* (L)	Smooth Barked Apple	15m	• Distinct twisting branching, attractive trunk, park specimen
Angophora floribunda* (L)	Rough Barked Apple	10-20m	• spreading tree, crooked branching • rough grey bark • similar to eucalypt tree
Backhousia citriodora	Lemon Scented Wattle	6-8m	• neat small shade tree or screening specimen • lemon scented foliage • clusters of white flowers
Backhousia myrtifolia (L)	Grey Myrtle	up to 10m	• shrub like in exposed location • larger tree in protected sites • screening or shade trees
Banksia integrifolia (L)	Coast Banksia	up to 10m	• coastal areas – salt tolerant • sandy and clayey soils • yellow 'bottle brush' flowers Jan-June
Banksia serrata (L)	Old Man Banksia	6-10M	• moderately salt tolerant • sandy soils, sunny positions • use as part of a mixed native/exotic shrubbery • attracts birds

BOTANICAL NAME	COMMON NAME	HEIGHT	COMMENTS
Brachychiton acerifolius (L)	Illawarra Flame Tree	15m	• Brilliant red flowers • Deciduous • susceptible to Kurrajong Leaf Tier
Brachychiton populneus (L)	Kurrajong	15m	• Flaring solid trunk, attractive foliage, susceptible to Kurrajong Leaf Tier
Callistemon citrinus (L)	Bottle Brush	3m	• salt, wind and water logging tolerant • fast growing • prolific spring flowering, crimson brushes • used singularly or in massed shrubbery
Callistemon salignus (L)	Pink Tips Bottle Brush	5-10m	• salt, wind and water logging tolerant • full sun • shade tree, background or screen plant
Callistemon viminalis	Weeping Bottle Brush	5-7m	• wind, drought conditions and water logging tolerant • weeping habit • shade, background or screen tree
Callistemon varieties			• numerous other varieties and sizes available • a plant worth investigating
Casuarina cunninghamiana (L)	River Oak	20-25m	• tolerates wet soils • needs regular water supply
Casuarina glauca (L)	Swamp Oak	up to 20m	• suitable for coastal conditions • tolerates salty, wet soils
Casuarina littoralis (L)	She Oak	10m	• weeping habit, winter flowering
Casuarina torulosa (L)	Forest Oak	6m	• Screening plant, group planting, fine needle-like foliage
Ceratopetalum apetalum* (L)	Coachwood	10-20m	• tall tree suitable for sheltered areas • white flower clusters Nov-Dec
Ceratopetalum gummiferum (L)	NSW Christmas Bush	10m	• very attractive tree, showy red/white flowers
Clerodendrum tomentosum (L)	Native Clerodendrum	4m	• tall shrub to a small tree, white showy flowers, protected position
Doryphora sassafras * (L)	NSW Sassafras	15m +	• large broad tree, white flowers in winter, park specimen
Elaeocarpus reticulatus (L)	Blueberry Ash	6-10m	• large shrub/small tree • sheltered areas on sandy soil • mass of pendulous white flowers Oct-Dec
Elaeocarpus reticulatus 'Prima Donna'	Pink Blueberry Ash	6m	• small tree, sheltered position, pendulous pink flowers, blue berry like fruits

BOTANICAL NAME	COMMON NAME	HEIGHT	COMMENTS
Hymenosporum flavum (L)	Native Frangipani	6-12m	• small shade tree or tall shrub part of a shrubbery • warm position with protection from strong winds
Leptospermum flavescens (L)	Yellow Tea Tree	6-12m	• damp sandy soils • salt tolerant • used as a light open screen or as a small shade tree
Leptospermum cvs.	Tea Trees	2.5-6m	• a number of ornamental varieties available ranging from low cascading varieties to tall shrubs suitable for screening
Lophostemon confertus	Brush Box	7-15m	• short trunk, dense headed crown • attractive trunk bark – creams and reddish/brown
Melaleuca armillaris (L)	Bracelet Honey Myrtle	5-10m	• soft dense foliage • suitable for screening
M. decora (L)		up to 20m	• large tree • papery bark • swampy or heavy soils
M. quinquenervia (L)	Broad-leaved Paperbark	up to 10m	• salt and wind tolerant • very tolerant to waterlogged sites • suits a wide range of soil and climate conditions
M. stypheloides (L)	Prickly-leaved Paperbark	15m	• small tree • tolerates poorly drained heavy soils
Melia azedarach (L)	White Cedar – Deciduous	15m	• wind tolerant, fast growing • spreading, light textured canopy • prone to attack by white cedar moth
Stenocarpus salignus (L)	Scrub Beetwood	Up to 10m	• White flowers, attractive foliage, sheltered position
Stenocarpus sinuatus	Queensland Firewheel	15m	• unusual showy flowers, well drained soils, sheltered position
Syncarpia glomulifera * (L)	Turpentine	20m	• tall tree • flowers a mass of creamy white stamens Oct-Dec
Syzygium australe (L)	Brush Cherry	5-8m	• small tree • dense, glossy crown • red or blue berries after flowering
Toona australis (L)	Red Cedar	15m	• tall slender trunk • deciduous • pink new growth • park specimen
Tristaniopsis laurina (L)	Water Gum	6m	• wind and water logging tolerant • neat habit suitable for small gardens

BOTANICAL NAME	COMMON NAME	HEIGHT	COMMENTS
			• shade tree, screening, background planting
Waterhousea floribunda	Weeping Lilly Pilly	10m	• weeping habit • glossy leaves • white fluffy flowers

Table A7.3 - Suitable shrubs

BOTANICAL NAME	COMMON NAME	HEIGHT	COMMENTS
Acmena smithii 'minor' (L)	Dwarf Lilly Pilly	1.5-2m	• dense leafy shrub suitable for mass plantings or as a leafy backdrop and infill
Baekea virgata	Tall Baekea	2m	• small white flowers, sheltered positions
Baekea imbricata		1m	• small compact shrub, dainty white flowers, mass planting
Banksia ericifolia (L)	Heath-leaved Banksia	5m	• salt and wind tolerant • fast growing, compact shrub • screening, windbreak plants • attracts nectar feeding birds
Banksia marginate	Silver Banksia	Up to 5m	• large shrub, unique yellow flower spikes, bird attracting
Banksia robur	Swamp Banksia	2m	• broad shrub, large leathery leaves, yellow flower spikes, bird attracting, adapt to dry soils
Banksia spinulosa (L)	Hairpin Banksia	5m	• small multi-stemmed shrub • suitable for mixed shrub planting • attracts nectar feeding birds
Bauera rubioides	Dog Rose	2m	• pink flowers, fine attractive foliage, moist sandy soils, good drainage
Blandifordia nobilis	Christmas Bells	1m	• attractive bell shape flowers, moist areas
Boronia dentata	Boronia	1m	• pink flowers, attractive foliage
Boronia megastigma & cvs	Scented Boronia	1m	• highly scented flowers, sandy soils, short lived
Boronia ledifolia	Sydney Boronia	1m	• aromatic foliage, sandy soils, short lived
Correa species	Small shrubs	1.5-2m	• excellent shrubbery plants • some are salt tolerant • attracts nectar feeding birds
Crinum pedunculatum	Swamp Lily	1m	• strap like leaves, large white showy flower heads, susceptible to caterpillar attack
Crowea exalata	Small Crowea	600mm	• attractive foliage, pink star shaped flowers, sandy loam soils
Crowea saligna	Crowea	1m	• attractive shrub, pink star shaped flowers, sandy loam soils
Darwina citriodora	Lemon Scented Myrtle	1.5m	• aromatic foliage, unique orange flowers, compact shrub
Dodonaea viscosa	Hop Bush	4-5m	• salt and wind tolerant • fast growing neat habit • good screening shrub
Doryanthes excelsa (L)	Gymea Lily	2m	• broad flat strap like liaves, vase shape shrub, large red flower spikes, feature plant

BOTANICAL NAME	COMMON NAME	HEIGHT	COMMENTS
Epacris longiflora (L)	Fuchsia Heath	1m	• red/white tubular flowers, sandy soils
Eriostemon myoporoides	Longleaf Waxflower	1-2m	• white/pink flowering winter-spring • useful as groups in a shrubbery or as massed planting
Grevillea species (exclude G. robusta)	Low-medium Shrubs	1-5m	• numerous species available common to the east coast - avoid rare varieties
Hakea dactyloides (L)	Broadleaved Hakea	3m	• hardy shrub suitable for windbreaks, screening or mixed plantings
Hakea laurina	Pinchusion Hakea	6m	• fast growing, salt tolerant • useful informal barrier or among shrubbery
Hakea salicifolia (L)	Willow-leaved Hakea	5m	• moderate salt, wind, water logging tolerant • suits poor sandy soil in full sun • windbreaks, screening, mixed plantings
Hakea sericea	Needle Bush	3m	• spiky foliage • suitable for people/animal barriers
Hibiscus heterophyllus (L)	Native Hibiscus	6-10m	• tall specimen shrub • suitable in protected positions, leaves can cause skin irritation
Kunzea ambigua	Tick Bush	Up to 5m	• massed white flowers along stem, insect attracting, scented flowers
Leptospermum species	Tea Tree	0.6-2.5m	• salt and wind tolerant • fast growing • small shrubs for colour in the shrubbery
Melaleuca species	Paperbark	0.6-3m	• smaller shrubs having showy flowers • some can tolerate wet roots • others thrive in dry conditions • useful for screening, part of a mixed shrubbery or mass plantings
Pimelea ferruginea	Rice Flower	1.5m	• compact round shrub, pink flowers, suitable most soils
Pittosporum varieties		2-10m	• various sizes • variegated varieties also available
Prostanthera species	Mint Bush	1-4m	• various shrubs available • aromatic foliage • protected semi-shaded position • used as understory planting
Puttenaea spp.	Bush Pea	Various	• yellow/red pea shaped flowers along stems, protected sites, sandy to clay soils
Telopea speciosissima	Waratah	3m	• brilliant red flowers, well drained flowers

BOTANICAL NAME	COMMON NAME	HEIGHT	COMMENTS
Tetratheca rubioides	Pink Eye	1m	• compact shrub, pink flowers, well drained soils
Westringia fruticose & cvs	Coast Rosemary	1-1.5m	• very hardy • salt and wind tolerant • suits any soils • screening, shrubbery mass or group plantings
Xanthorrhoea spp.	Grass Tree	Up to 5m	• slow growing, grass like foliage, unique trunk, feature plant
Zieria granulate (L)	Zieria	1-3m	• protected areas • specimen or group plantings

Table A7.4 - Suitable groundcovers

BOTANICAL NAME	COMMON NAME	SPREAD	COMMENTS
Anigozanthos flavidus & cvs	Kangaroo Paw	Up to 2m	• strap like leaves • unique flowers • various colours
Brachycome multifida	Swan River Daisy	1.5m spread	• fast growing • sunny position • border or mass plantings
Cissus antarctia/ Hypoglauca (L)	Water Vine	4m spread	• vigorous climber or groundcover • fast, thick cover • dark glossy green foliage
Dampiera diversifolia	Kangaroo Lobelia	2m spread	• brilliant blue/purple flowers • low growing creeper
Dianella caerulea & cvs (L)	Paroo Lily	500mm	• strap like leaves • unique flowers • variety colours
Grevilleas	Prostrate Groundcovers	up to 2m spread	• excellent groundcovers • quick growing • tolerate full sun • well drained soils
Hardenbergia violacea (L)	Sarsparilla Vine	3m spread	• climber or groundcover • wind tolerant • fast growing • good weed suppressor
Hibbertia scandens & varieties (L)	Climbing Guinea Flower	up to 2m spread	• salt tolerant • sun exposed position • large yellow flowers
Kennedia rubicunda (L)	Dusky Coral Pea	3m spread	• fast growing • quick cover of bare ground
Lomandra longifolia & cvs (L)	Mat Rush	1.5m	• grass like foliage • salt tolerant • hardy specimen
Myoporum parvifolium	Creeping Boobialla	1m spread	• pale green, fine leaf groundcover • white flowering
Pandorea pandorana (L)	Wonga Vine	6m spread	• fast growing • climber-vigorous, evergreen • excellent for quick cover
Scaevola aemula	Fairy Fan Flower	1m	• low growing creeper • attractive fan shape flowers • suitable for most soils
Viola hederacea (L)	Native Violet	2m spread	• kidney shaped leaves • attractive blue/white flowers, • shade tolerant

Table A7.5 - Suitable palms

BOTANICAL NAME	COMMON NAME	HEIGHT	COMMENTS
Archontophoenix cunninghamiana (L)	Bangalow Palm	Above 15m	• smooth trunk • semi shade to full sun • attractive palm
Livistona australis (L)	Cabbage Tree Palm	Above 15m	• fan shape leaves • slender tall trunk • sunny position • attractive palm
Macrozamia communis (L)	Burrawang	2m	• leathery palm-like fonds • vase shape • feature plant

Table A7.6 - Suitable ferns

BOTANICAL NAME	COMMON NAME	HEIGHT	COMMENTS
Asplenium australasicum (L)	Birds Nest Fern	2m	• broad strap like leaves • vase shape • semi shade to shade • ideal understorey planting
Blechnum nudum & cvs (L)	Fishbone Water Fern	1.5m	• vase shaped • semi shade to shade • group plantings
Cyathea australis (L)	Rough Tree Fern	Up to 12m	• slow growing • attractive graceful fonds • protected shaded areas
Cyathea cooperi (L)	Coopers Tree Fern	6m	• attractive arching fonds • protected shaded areas
Dicksonia Antarctica (L)	Soft Tree Fern	4m	• vase shaped • semi shade • group plantings

A7.2 - Unsuitable plant species

Note: The plants listed in **Table A7.7** have been considered as ones to be discouraged from use in gardens throughout the Shellharbour City Council area. Some of these plants are currently used in gardens and are already major weeds e.g. Cotoneaster spp and Lantana camara, and their replacement should be encouraged, others such as Pampass grass and Rhus tree have been declared noxious weeds and must be removed by law. Species such as Equisetum spp should never be made available for use in gardens as they present significant weed risks.

Table A7.7: - Unsuitable trees

BOTANICAL NAME	COMMON NAME
Acacia baileyana	Cootamundra Wattle
Acacia podalyriifolia	Silver Wattle
Acacia saligna	Golden Wreath Wattle
Acer negundo	Box Elder
Acer pseudoplatanus	Sycamore Maple
Ailanthus altissima	Tree of Heaven
Alnus spp.	Alders
Cinnamomum camphora	Camphora laurel
Cupaniopsis anacardioides	Tuckeroo Tree
Erythrina x sykesii	Coral Tree
Ficus elastic	Rubber Tree
Grevillea robusta	Silky Oak Tree
Gleditsia triacanthos	Honey Locust
Jacaranda mimosifolia	Jacaranda
Lagunaria patersonii	Norfolk Island Hibiscus
Ligustrum sinense	Small Leaf Privet
Ligustrum lucidum	Large Leaf Privet
Olea Africana	Wild Olive
Olea europaea subspp africana	African Olive
Paulownia spp.	Paulownia or Powton Tree
Pinus radiate	Pine Tree
Populus spp	Poplar Tree
Pittosporum undulatum	Native Daphne
Prunus laurocerasus	Cherry Laurel
Robinia pseudoacacia	False Acacia
*Salix spp	Willow Tree
Schefflera actinophylla	Umbrella Tree
Schinus areira	Peppercorn Tree
Solanum mauritianum	Wild Tobacco Bush
*Toxicodendron succedaneum	Rhus Tree
Ulmus procera	English Elm

Table A 7.8 - Unsuitable shrubs

BOTANICAL NAME	COMMON NAME
Ageratina adenophora	Crofton Weed
Agave americana	Yucca Plant
*Baccharis halimifolia	Groundsel Bush
Buddleia spp.	Butterfly Bush
Canna indica	Canna Lily
Caesalpinia decapetala	Mysore Thorn or Thorny Poinciana
Cestrum parqui	Green Cestrum
*Chrysanthemoides monilifera	Bitou Bush
*Cortaderia spp	Pampas Grass
Coreopsis lanceolata	Coreopsis
Cotoneaster spp	Cotoneaster
Coprosma repens	Mirror Plant
Crataegus monogyna	Hawthorn
Cytisus scoparius	English Broom
Erica spp.	Portuguese heath/and other exotic heaths
*Genista spp	Broom
Hypericum perforatum var augustifolium	St John's Wort
Impatiens spp	Impatients, Balsam, Busy Lizzy
Lantana camara	Lantana
Lilium formosanum	Formosa Lily
Lycium ferocissimum	African boxthorn
Nerium oleander	Oleander
Ochna serrulata	Mickey Mouse Plant
*Opuntia spp	Prickly Pear
Psoralea pinnata	African scurfpea
Phyllostchys spp	Bamboo
Polygala myrtifolia	Myrtle-leaf Milkwort
Polygala virgata	Purple Broom
Pyracantha augustifolia	Firethorn
Raphiolepis indica	India Hawthorn
Rosa rubiginosa	Briar rosa
Rubus fruticosus	Blackberry
Ricinus communis	Castor Oil Plant
Sambucus nigra	Elderberry
Senna pendula var glabrata	Cassia
Senna pendula	Cassia
*Ulex europaeus	Gorse
Zantedeschia aethiopica	Arum Lily

Table A7.9 - Unsuitable groundcovers/climbers

BOTANICAL NAME	COMMON NAME
Acetosa sagittate	Turkey Rubarb
Agapanthus orientalis	Lily-of-the-Nile
Alocasia macrorrhiza	Elephant Ears
Anredera cordifolia	Madiera Vine
Araujia hortorum	Moth Vine
Asparagus asparagoides	Bridal Creeper
Asparagus scandens	Bridal Creeper
Bryophyllum delagoense	Mother of Millions
Cardiospermum grandiflorum	Balloon Vine
Crocosmia x crocosmiiflora	Montbretia
Delairea odorata	Cape Ivy
Dipogon lignosus	Dolichos Pea
Gazania rigens	Gazania
Gazania tomentosum	Grey Gazania
Gloriosa superba	Glory Lily
Hedera helix	English Ivy
Hedychium gardneranum	Wild Ginger/Ginger Lily
Hieracium spp	Hawkweed
Hydocotyle ranunculoides	Pennywort
Ipomoea cairica	Coastal Morning Glory
Ipomoea indica	Morning Glory
Jasminum polyanthum	White Jasmine
Lonicera japonica	Honeysuckle
Macfadyena urguis-cati	Cat's Claw Creeper
Myrsiphyllum asparagoides	Bridal Veil Creeper
Nephrolepis cordifolia	Fishbone Fern
Parietaria judaica	Pellitory/Sticky or Asthma Weed
Passiflora edulis	Passionfruit
Persicaria capitata	Japanese Knotweed
Protasparagus plumosus	Climbing Asparagus
Protasparagus aethiopicus	Asparagus Fern
Pyrostegia venusta	Golden Shower
Ranunculus repens	Creeping Buttercup
Senecio angulatus	Creeping Goundsel
Sollya heterophylla	Blue Bell Creeper
Tecomaria capensis	Cape Honeysuckle
Thunbergia alata	Black-eyed Susan
Tradescantia fluminensis	Wandering Jew
Tropaeolum majus	Nasturtium
Vinca major	Blue Perwinkle
Watsonia bulbifera	Bugle Lily

Table A7.10 - Unsuitable herbaceous plants

BOTANICAL NAME	COMMON NAME
Agapanthus praecox ssp orientalis	Agapanthus
Ageratina adenophora	Crofton Weed
Arctotheca calendula	Capeweed
Arctotheca populifolia	Beach Daisy
Artemisia verlotiorum	Mugwort or Chinese Wormwood
Bryophyllum delagoense	Mother-of-Millions
Canna indica	Canna Lily
Carduus nutans	Nodding Thistle
Coreopsis lanceolata	Coreopsis
Conium maculatum	Hemlock
Crassula spp.	Stonecrop
Cirsium vulgare	Black or Spear Thistle
Echium plantagineum	Paterson's Curse
Echium vulgre	Viper's Bugloss
Ephorbia paralias	Sea Spurge
Erigeron karvinskianus	Seaside Daisy
Eshscholzia californica	Californian Poppy
Freesia alba x leichtlinii	Freesia
Foeniculum vulgare	Fennel
Gaura lindbeimeri	Gaura
Hedychium gardnerianum	Ginger Lily
Hypericum perforatum	St John's Wort
Senico madagascariensis	Fireweed
Onopordum acanthium	Scotch Thistle
Persicaria capitata	Japanese Knotweed
Ranunculus repens	Creeping Buttercup

Table A7.11 - Unsuitable bulbs/tuberous plants

BOTANICAL NAME	COMMON NAME
Crocosmia X crocosmiiflora	Montbretia
Lilium formosanum	Formosan Lily
Oxalis articulate	Wood-sorrel
Romulea rosea	Onion Grass
Tritonia lineata	Tritonia
Watsonia meriana 'Bulbillifera'	Watsonia
Zantedeschia aethiopica	Arum Lily

Table A7.12 - Unsuitable grasses

BOTANICAL NAME	COMMON NAME
Arundo donax	Giant Reed
Andropogon virginicus	Whisky Grass
Cortaderia jubata	Pink Pampas Grass
Cortaderia selloana	Pampas Grass
Eragrostis curvula	African Lovegrass
Nassella trichotoma	Serrated Tussock
Nassella neesiana	Chilean Needle Grass
Pennisetum alopecuroides	Swamp Foxtail Grass
Pennisetum setaceum	Fountain Grass
Sporobulus africanus	Parramatta Grass
Sporobulus fertilis	Giant Parramatta Grass

Table A7.13 - Unsuitable palms

BOTANICAL NAME	COMMON NAME
Phoenix canariensis	Canary Island Date Palm
Syagrus romanzoffianam	Cocos Palm

Table A7.14 - Unsuitable aquatics

BOTANICAL NAME	COMMON NAME
*Alternanthera philoxeroides	Alligator Weed
*Cabomba caroliniana	Cabomba
Elodea canadensis	Canadian Pondweed
*Eichornia crassipes	Water Hyacinth
*Equisetum spp	Horsetail
Ludwigia peruviana	Ludwigia
Myriophyllum aquaticum	Parrots Feather
*Pistia stratiodes	Water Lettuce
*Salvinia molesta	Salvinia

Planting of these species will have significant impacts on our environment, avoid the use of these species in the landscape.

* Declared Noxious Weeds under the *Noxious Weeds Act 1993*. Contact the Illawarra Noxious Weed Authority for further information.

APPENDIX 8 - CONTAMINATION REMEDIATION

A8.1 - General

A8.1.1 Council deals with sites not posing a significant risk of harm, under the provisions of the *Environmental Planning & Assessment Act 1979* EP&A Act, in accordance with *Managing Land Contamination: Planning Guidelines* (MLC) and State Environmental Planning Policy No. 55 remediation of Land.

A8.1.2 A Council who acts substantially in accordance with the (MLC) when carrying out specified planning functions is taken to have acted in good faith and receives statutory protection under the EP&A Act.

A8.1.3 Council Section 149 Certificates for sites may identify contamination or potential contamination issues.

A8.1.4 In determining all development applicantions, Council must consider the possibility of land contamination and the implications it has for any proposed or permissible future uses of the land. A precautionary approach will be adopted to ensure that any land contamination issues are identified and dealt with early in the planning process.

A8.1.5 Council will conduct an initial evaluation as part of the development process to determine whether contamination is an issue, and whether sufficient information is available for Council to carry out its planning functions in good faith.

A8.1.6 The initial evaluation will be based on readily available factual information provided by the applicant and information available to Council such as previous investigations about contamination on the land, previous zoning and uses of the subject land and restrictions relating to possible contamination such as notices issued by NSW State Government. Council may also conduct a site inspection of the subject land.

Under the *Contaminated Land Management Act 1997* (CLM Act), the NSW State Government intervention in relation to contaminated land is triggered when contamination poses a significant risk of harm to public health or the environment.

A8.2 - Contamination assessment requirements

A8.2.1 Applications for the development or subdivision of land identified as contaminated must be accompanied by a detailed site assessment report prepared by a qualified environmental consultant that satisfies the requirements of the State Environmental Planning Policy No. 55 - Remediation of Land and is prepared in accordance with Managing Land Contamination, Planning Guidelines (NSW DUAP/EPA 1998) and the Guidelines for Consultants Reporting on Contaminated Sites, (OEH, 2011).

A8.2.2 The likelihood of any land contamination must be considered to ensure that changes in the land use will not increase risks to human health or the environment. A qualified environmental consultant must assess the extent of the contamination in accordance with Managing Land Contamination, Planning Guidelines (NSW DUAP/EPA 1998) and the Guidelines for Consultants Reporting on Contaminated Sites, (OEH, 2011).

A8.2.3 All contamination assessment reports and if required remedial actions plans must be provided to the consent authority for written approval prior to any approval for development.

A8.2.4 For sites containing underground petroleum storage systems, immediately after underground storage tanks, fuel lines and any other utilities that have the potential to cause contamination have been removed the following requirements are to be satisfied prior to any further development of the site:

a. A site assessment report is to be prepared to characterise any on-site contamination, off site receptors and contaminant migration. Site assessment reports and validation are to be prepared by a suitably qualified environmental consultant in accordance with the Environmental Protection Authority's Guidelines for Assessing Service Stations, (UPSS Reg) 1994 (GASS) and the Underground Petroleum Storage Systems Regulation 2008 and any applicable guidelines made under this regulation.

b. In the event that site remediation is required, a remediation plan is to be prepared in accordance with GASS, SEPP 55 Remediation of Land, and the *Environmental Planning and Assessment Act 1979* the (EP&A Act).

c. Upon completion of any remediation works a site validation report is to be prepared in accordance with GASS or the UPSS Reg.

A8.3 - Stages of addressing site contamination

Potential sources of site history information for preliminary site investigations (stage 1)

A8.3.1 These include:

- Past aerial photographs
- Council records - planning, development and building applications, complaints pollution incident reports
- Local historical publications
- Local newspapers (past and present)
- Past and present telephone books
- WorkCover Authority dangerous goods branch
- Sydney Water Corporation - trade waste agreements
- Integral Energy - past and present electrical substations
- State Rail Authority
- Current and previous site owners
- NSW DECC past and present scheduled premises, notices and unhealthy building lands, pesticides
- NSW Agriculture

Stage 1 - Preliminary site contamination investigation

A8.3.2 In addition to the requirements outlined in SEPP 55, Council may also require a preliminary investigation to be submitted when:

a. Council has reasonable grounds to believe the land is contaminated because of the land's history, condition, or other information known to Council.

b. The site has been investigated and/or remediated but there is insufficient information available about the nature and extent of contamination and/or remediation, or the circumstances have changed.

c. There are restrictions on, or conditions attached to, the use of the site by a regulatory or planning authority that are, or may be, related to contamination, but there is insufficient information available about the nature and extent of contamination.

d. Council records have demonstrated that the site is associated with pollution incidents or illegal dumping of wastes.

e. The site is adjoining land that has been associated with activities that may cause contamination and it is likely that this may have contaminated the subject premises.

A8.3.3 The preliminary site contamination investigation must be carried out in accordance with the Managing Land Contamination, Planning Guidelines (NSW DUAP/EPA 1998) and the Guidelines for Consultants Reporting on Contaminated Sites, (OEH, 2011) or the requirements of relevant guidelines made or endorsed by the NSW State Government under the CLM Act. The proponent is responsible for engaging a suitably qualified environmental consultant to undertaken the preliminary site contamination investigation. In addition, the proponent is responsible for all costs borne in engaging the consultant and site auditor, if requested by Council. If Council is satisfied that the preliminary site contamination investigation justifiably concludes that the site is suitable for the proposed use, then Council will not require any further investigations to be conducted.

Stage 2 - detailed site contamination investigation

A8.3.4 Council will require a detailed site contamination investigation to be undertaken when the results of the preliminary investigation demonstrate the potential for, or existence of contamination that may not be suitable for the proposed use of the land. In some cases, Stage 1 and Stage 2 investigations may be combined where the land is known to contain or have contained a potentially contaminating activity.

A8.3.5 The objectives of a detailed site investigation are to:

a. define the extent and degree of contamination

b. assess the potential risk posed by contaminants to human health and the environment

c. obtain sufficient information for the development of a remedial action plan (if necessary).

A8.3.6 The detailed site contamination investigation must be carried out in accordance with the *Managing Land Contamination, Planning Guidelines* and the *Guidelines for Consultants Reporting on Contaminated Sites, (OEH, 2011*) or the requirements of relevant guidelines made or endorsed by the NSW State Government under the *Contaminated Land Management Act* . The proponent is responsible for engaging a suitably qualified environmental consultant to undertake the detailed site contamination investigation. In addition, the proponent is responsible for all costs borne in engaging the consultant and site auditor, if requested by Council.

A8.3.7 A detailed site contamination investigation report should include the following information:

a. that the site contamination investigation was carried out in accordance with DECC Guidelines

b. whether the site is suitable for the proposed use

c. remediation works necessary (if any) to make the site suitable for the proposed use

d. location, extent and type of any contamination present

e. if remediation is required, the feasible remediation options available to remediate the site

f. whether contaminants have, or are, likely to have travelled beyond the property boundaries.

Stage 3 - Remedial Action Plan (RAP)

A8.3.8 Council will require the submission of a RAP if the detailed investigation concludes that the land is not suitable for the proposed use in its present state. A RAP must be carried out in accordance with the Managing Land Contamination, Planning Guidelines (NSW DUAP/EPA 1998) and the Guidelines for Consultants Reporting on Contaminated Sites, (OEH, 2011) or the requirements of relevant guidelines made or endorsed by the NSW State Government under the *Contaminated Land Management Act*. Prior to determining a subdivision or development application, Council must be satisfied that remedial measures have been, or will be undertaken in accordance with the submitted RAP, to make the site suitable for the proposed use.

A8.3.9 The objectives of an RAP are to:

a. set remediation objectives

b. determine the most appropriate remedial strategy

c. identify necessary approvals that need to be obtained from regulatory authorities.

A8.3.10 The RAP should document the remedial works to be undertaken at the site and also contain an environmental management plan and occupational health and safety plan for remedial works. The RAP should be based on information from investigations and on the proposed land use. The RAP should clearly demonstrate how the proponent or their consultant proposes to reduce risks to acceptable levels and achieve the clean-up objectives of the site.

Stage 4 - Validation and monitoring

A8.3.11 SEPP 55 requires a notice of completion for all remediation work.

A8.3.12 The objective of validation and monitoring is to demonstrate whether the objectives stated in the RAP and any conditions of development consent have been achieved.

A8.4 - Remediation work

Category 1 remediation work

A8.4.1 Category 1 remediation work is remediation work that requires development consent. Refer to SEPP 55, the Managing Land Contamination, Planning Guidelines (NSW DUAP/EPA 1998) and Councils Contaminated Land Policy for the requirements of Category 1 remediation works.

Category 2 remediation work

A8.4.2 Category 2 remediation work is remediation work that does not require development consent. Refer to SEPP 55, the *Managing Land Contamination, Planning Guidelines (NSW DUAP/EPA 1998)* and Councils Contaminated Land Policy for the requirements of Category 2 remediation works.

APPENDIX 9 - FLOODPLAIN RISK MANAGEMENT

A9.1 - Criteria for determining applications

The criteria for determining applications for proposals potentially affected by flooding are structured in recognition that different controls are applicable to different land uses and levels of potential flood inundation and hazard.

A9.1.1 The procedure to determine what controls apply to proposed development involves:

a. firstly, identifying the land use category (**Table A9.2**) of the development. See heading Land use categories table

b. secondly, determine which floodplain and which part of that floodplain the land is located within. Refer to the NSW Government Floodplain Development Manual.

c. then apply the controls outlined under the heading, Development controls.

Note: that the assistance of a suitably qualified civil engineer with experience and expertise in hydrology and hydraulics may be required at various steps in the process to ensure that the requirements of this Plan are fully and satisfactorily addressed.

See under headings, Development controls, Car parking requirements, fencing requirements, which provide controls for development, car parking and fencing in the floodplain. They contain objectives, performance criteria and prescriptive controls.

The objectives represent the outcomes that the Council wish to achieve from each control.

The performance criteria represent a means of assessing whether the desired outcomes will be achieved.

The controls are preferred ways of achieving the outcome. While adherence to the prescriptive controls may be important, it is paramount that the objectives and the performance criteria are clearly satisfied.

A9.2 - Flood Risk Precincts

Each of the floodplains within the LGA can be defined based on different levels of potential flood risk. The relevant Flood Risk Precincts (FRP's) for each of the floodplains include:

High Flood Risk Precincts

A9.2.1 This has been defined as the area within the envelope of land subject to a high hydraulic hazard (as defined with the provisional criteria outlined in the Floodplain Development Manual) in 100 year ARI flood event. The high flood risk precinct is where high flood damage, potential risk to life and evacuation problems would be anticipated or development would significantly and adversely effect flood behaviour. Only in exceptional circumstances will development be permitted in this precinct. In this precinct, there would be a significant risk of flood damages without compliance with flood related building and planning controls.

Medium Flood Risk Precinct

A9.2.2 This has been defined as land below the 100 year ARI flood level (plus 0.5m freeboard) that is not within the High Flood Risk Precinct. It is land subject to low hydraulic hazard (in accordance with the provisional criteria outlined in the Floodplain Development Manual). In this precinct there would still be a significant risk of flood damage, but these damages can be minimised by the application of appropriate development controls.

Low Flood Risk Precinct

A9.2.3 This has been defined as all other land within the floodplain (ie. Within the extent of the probable maximum flood) but not identified within either the High Flood Risk or the Medium Flood Risk Precinct where risk of damages are low for most land uses. The Low Flood Risk Precinct is that area above the 100 year ARI flood level (plus 0.5m freeboard). Most land uses would be permitted within this precinct.

These may be varied in the case of an adopted floodplain risk management plan which may alter or incorporate the definition of parameters within the risk precincts such as, but not limited to, freeboard and riparian zones.

A9.3 - Development controls

The controls apply to all land proposed to be developed within a Flood Risk Precinct described above. The type and stringency of controls have been graded relative to the severity and frequency of potential floods, having regard to categories determined by the relevant Floodplain Risk Management Study and Plan.

If no such study or plan exists, a site specific flood study / flood risk report may be required to be submitted to Council by a suitably qualified civil engineer with appropriate experience and expertise in hydrology and hydraulics in order to determine the risk precinct and controls specifically for the subject property. This form of study will require modelling of storm events up to and including the Probable Maximum Flood (PMF). Flood modelling must include a sensitivity analysis and assume the riparian land is fully vegetated.

A9.3.1 The categories applicable to each floodplain are depicted on the planning matrices contained in the following schedules to this Appendix.

a. The schedules (**Table A9.3**) outline the controls relevant to each floodplain. In the absence of a catchment specific Flood Risk Management Plan (FRMP), the General Schedule (Schedule 1) under the heading Schedules must be followed.

b. Council is to insert controls for other floodplains as flood studies or FRMPs are prepared and become adopted. Flood studies / FRMPs which are yet to be completed are shown in italic.

Schedule 1 – General
Elliot Lake – Little Lake Floodplain
Horsley Creek Floodplain
Macquarie Rivulet
Schedule 2 - Lake Illawarra Floodplain
Schedule # – Oakey Creek
Schedule # – Lake South
Schedule # – Shell Cove
Schedule # – Minnamurra River

Objectives

1. To ensure the proponents of development and the community in general are fully aware of the potential flood hazard and consequent risk associated with the use and development of land within the floodplain.
2. To require developments with high sensitivity to flood risk (e.g. critical public utilities) be sited and designed such that they are subject to no or minimal risk from flooding and have reliable access.
3. Allow development with a lower sensitivity to the flood hazard to be located within the floodplain, subject to appropriate design and siting controls, provided that the potential consequences that could still arise from flooding remain acceptable having regard to the State Government's Flood Policy and the likely expectations of the community in general.
4. To prevent any intensification of the use of High Flood Risk Precinct or floodways, and wherever appropriate and possible, allow for their conversion to natural waterway corridors.
5. To ensure that design and siting controls required to address the flood hazard do not result in unreasonable impacts upon the amenity or ecology of an area.
6. To minimise the risk to life by ensuring the provision of appropriate access from areas affected by flooding up to extreme events.

Performance criteria

A9.3.2 The proposed development should not result in any increased risk to human life.

A9.3.3 The additional economic and social costs which may arise from damage to property from flooding should not be greater than that which can reasonably be managed by the property owner and general community.

A9.3.4 The proposal should only be permitted where effective warning time and reliable access is available for the evacuation of an area potentially affected by floods. Evacuation should be consistent with any relevant emergency management plan or flood evacuation strategy where in existence.

A9.3.5 Development should not detrimentally increase the potential flood affectation on other development or properties either individually or in combination with the cumulative impact of development that is likely to occur in the same floodplain. This must be shown for storm events up to and including the PMF in the absence of a floodplain risk management plan.

A9.3.6 Development should not result in significant impacts upon the amenity of an area by way of unacceptable overshadowing of adjoining properties, privacy impacts (e.g. by unsympathetic house-raising) or by being incompatible with the streetscape or character of the locality.

A9.3.7 Proposed development must be consistent with ESD principles.

A9.4 - Car parking requirements

Objectives

1. To minimise the damage to motor vehicles from flooding.
2. To ensure that motor vehicles do not become moving debris during floods, which threaten the integrity of structures or the safety of people, or damage other property.
3. To minimise damage to garages and their contents from flooding.
4. To minimise any risk to human life as a result of the inundation of basement car parking, other car parking or driveway areas.

Performance criteria

A9.4.1 The proposed car parking should not result in any increased risk to vehicle damage.

A9.4.2 The proposed garage should not detrimentally increase the potential flood affectation on other development.

Controls

A9.4.3 Open car parking (associated with a medium density, industrial, commercial etc or generally where greater than 2 vehicle spaces are required) – the minimum surface level of open space car parking subject to inundation within the high and medium FRP should be designed giving regard to vehicle stability in terms of depths and velocity during inundation by flood waters up to and including the 100 year ARI flood. In unique circumstances where this is not possible, it must be demonstrated how the objectives in this Section will be met. Vehicles must also be shown to not cause a nuisance in the PMF event by being caught in flood waters. In this regard, vehicle bollards or similar method of containment may be required where the velocity depth product exceeds vehicle stability limits.

A9.4.4 Garage addition or open car parking to an existing house e.g. carport – the minimum floor level should be as high as practical but must be no lower than 300mm above adjacent finished ground levels. Garage must be flood proofed in accordance with information under the heading Flood compatible materials. Refer to the heading Land use categories – Concessional Development for the maximum floor areas within the various FRPs.

A9.4.5 Garage as part of new development and redevelopment:

a. not permitted within High FRP unless concessional development. Note, must be in a location where the least displacement of flood waters is likely.

b. in Medium FRP with a cumulative floor area 40sqm or less; minimum floor levels to be as high as practical and no lower than 300mm above adjacent finished ground levels.

c. in Medium FRP with a cumulative floor area greater than 40sqm; minimum floor levels to be at the 100 year ARI flood level or 300mm above adjacent finished ground level whichever is the greater.

A9.4.6 Basement Car Parks:

a. not permitted within High FRP.

b. must be protected from inundation to levels resulting from either the 100 year ARI flood plus freeboard or PMF whichever is the greater.

c. must have reliable access for pedestrians in PMF from basement.

d. all openings such as vehicular and pedestrian entry points, ventilation grates etc must all be located above the 100 year ARI flood plus freeboard or PMF whichever is the greater.

A9.4.7 Car parking areas, garages and carports as well as associated access roads must be located outside of the core riparian zone of any watercourse.

A9.5 - Fencing requirements

Objectives

1. To ensure that fencing does not result in the undesirable obstruction of the free flow of floodwaters.
2. To ensure that fencing does not become unsafe during floods and potentially become moving debris which threatens the integrity of structures or the safety of people.
3. Fencing is to be designed to maintain habitat and connectivity for the movement of flora and fauna within the core riparian zone.

Controls

A9.5.1 Fencing within a floodway or High FRP will not be permissible except for those of a flood compatible nature being permeable or open type as approved by Council.

A9.5.2 Council will require a Development Application for all new solid (non-porous) and continuous fences above 0.6m high, in the High and Medium FRPs unless otherwise stated by exempt and complying development provisions.

A9.5.3 An applicant will need to demonstrate that the fence would create no impediment to the flow of floodwaters. Appropriate fences must satisfy the following:

a. an open collapsible hinged fence structure and / or pool type fence;

b. other than a brick or other masonry type fence (which will generally not be permitted); or

c. a fence type and siting criteria as prescribed by Council.

A9.5.4 Other forms of fencing will be considered by Council on merit.

A9.6 - Filling of flood prone land

A9.6.1 Unless a Floodplain Risk Management Plan for the catchment has been adopted, which allows filling to occur, filling in flood prone areas is not permitted unless a report from a suitably qualified civil engineer with expertise in hydrology and hydraulics is submitted to Council that certifies that the development will not increase flood affectation elsewhere. Any proposal to fill a site must be also accompanied by a cumulative impact assessment with an analysis of the effect on flood levels of similar filling of developable sites in the area. In the absence of an adopted FRMP it must be demonstrated through a cumulative impact assessment, that as a result of the fill:

a. there is no significant increase in flood levels up to the PMF event

b. there is no significant impacts upon flood behaviour on other properties

c. there is no increase in risk to life up to the PMF event.

A9.6.2 Filling of individual sites in isolation, without consideration of the cumulative effects is not permitted. Section 1.6.2 of the NSW Government's Floodplain Development Manual states that a case by case decision making approach cannot take into account the cumulative impact of flooding behaviour, and associated risks, caused by individual developments.

A9.6.3 Wholesale filling of any site is considered unacceptable. In the case of a required elevated floor level for dwelling houses or garages, Council will consider filling of the immediate building footprint only. Note that this does not include structures such as pergolas and courtyards which are required to be constructed at ground level where possible to minimise loss of storage. Driveways associated with garages will need careful consideration to ensure they cause minimal flow diversion and do not create nuisance flow to adjoining properties in minor storm events.

A9.6.4 This analysis must form part of a flood study prepared by a suitably qualified Civil Engineer with expertise in hydrology and hydraulics in accordance with this Appendix.

A9.7 - Information required to be submitted with an application to address this Chapter/Appendix

A9.7.1 Applications must include information which addresses all relevant controls listed in this Appendix and the following matters as applicable.

A9.7.2 Applications for Concessional Development (see under heading Land use categories) on Flood Prone Land must be accompanied by documentation from a registered surveyor confirming existing ground and floor levels.

A9.7.3 Development applications must be accompanied by a survey plan showing:

a. the position of the existing building/s and proposed building/s / works

b. existing and proposed ground levels to Australian Height Datum around the perimeter of the building and / or finished levels of works within the site

c. existing and proposed floor levels to Australian Height Datum

d. location of watercourses and the proposed width of riparian land where applicable

e. the position of the proposed development relative to its flood risk precinct

f. details of the proposed revegetation / rehabilitation of riparian land where applicable.

A9.7.4 Applications for earthworks, filling of land and subdivision must be accompanied by a survey plan (with a minimum contour interval of 0.2m) showing relative levels to Australian Height Datum.

A9.7.5 For large scale developments, or developments in critical situations, particularly where an existing catchment based flood study is not available, a flood study using a fully dynamic one or two dimensional computer model may be required depending on the catchment characteristics being modelled. In most other cases a flood study prepared in a manner consistent with "Australian Rainfall and Runoff", and the NSW Government's Floodplain Development Manual will be required. From this study, the following information must be submitted to Council and clearly shown on plan:

a. water surface contours for 5 year ARI, 100 Year ARI and PMF as a minimum, (Note in some circumstances it may be required to model other events)

b. velocity contours for 5 year ARI, 100 Year ARI and PMF as a minimum, (Note in some circumstances it may be required to model other events)

c. velocity and depth product contours for 5 year ARI, 100 Year ARI and PMF as a minimum, (Note in some circumstances it may be required to model other events)

d. delineation of flood risk precincts in accordance with this document relevant to individual catchments; and

e. flood profiles for 5 year ARI, 100 Year ARI and PMF as a minimum, (Note in some circumstances it may be required to model other events) for total development including all structures and works (such as revegetation, landscaping etc).

NOTE: This information is required for both the pre-developed and post-developed scenarios.

A9.7.6 Where the controls for a particular development proposal require an assessment of structural soundness during potential floods, the following impacts must be addressed:

a. hydrostatic pressure

NOTE: Foundations need to be included in the structural analysis.

b. hydrodynamic pressure

c. impact of debris

d. buoyancy forces.

A9.7.7 Where a property is affected by Ocean Levels, and a flood study is required, the flood study must include a sensitivity analysis including but not limited to:

a. varying ocean levels

b. wave setup

c. entrance conditions (where applicable)

A9.7.8 Where a property is affected by Lake Illawarra and a flood study is required the flood study must include a sensitivity analysis including but not limited to:

a. varying lake levels

b. entrance conditions

NOTE: Each flood profile envelope must be shown and minimum habitable floor levels determined in accordance with the relevant development control matrix. Note where this is required in the absence of an adopted FRMP the criteria will be determined on a merit based approach given the best available information.

A9.8 - Flood Compatible Materials

Table A9.1 - Flood Compatible Materials

BUILDING COMPONENT	FLOOD COMPATIBLE MATERIAL
Flooring and Sub-floor Structure	• concrete slab-on-ground monolith construction • suspended reinforced concrete slab
Floor Covering	• clay tiles • concrete, precast or in situ • concrete tiles • epoxy, formed-in-place • mastic flooring, formed-in-place • rubber sheets or tiles with chemical-set adhesives • silicone floors formed-in-place • vinyl sheets or tiles with chemical-set adhesive • ceramic tiles, fixed with mortar or chemical-set adhesive • asphalt tiles, fixed with water resistant adhesive
Wall Structure	• solid brickwork, blockwork, reinforced, concrete or mass concrete
Roofing Structure (for Situations Where the Relevant Flood Level is Above the Ceiling)	• reinforced concrete construction • galvanised metal construction
Doors	• solid panel with water proof adhesives • flush door with marine ply filled with closed cell foam • painted metal construction • aluminium or galvanised steel frame
Wall and Ceiling Linings	• fibro-cement board • brick, face or glazed • clay tile glazed in waterproof mortar • concrete • concrete block • steel with waterproof applications • stone, natural solid or veneer, waterproof grout • glass blocks • glass • plastic sheeting or wall with waterproof adhesive
Insulation	• foam (closed cell types)
Windows	• aluminium frame with stainless steel rollers or similar corrosion and water resistant material
Nails, Bolts, Hinges and Fittings	• brass, nylon or stainless steel • removable pin hinges • hot dipped galvanised steel wire nails or similar

ELECTRICAL AND MECHANICAL EQUIPMENT- For dwellings constructed on land to which this Plan applies the electrical and mechanical materials, equipment and installation should conform to the following requirements

Main power supply

Subject to the approval of the relevant authority the incoming main commercial power service equipment, including all metering equipment, shall be located above the relevant flood level. Means shall be available to easily disconnect the dwelling from the main power supply.

Wiring

All wiring, power outlets, switches, etc., should, to the maximum extent possible, be located above the relevant flood level. All electrical wiring installed below the relevant flood level should be suitable for continuous submergence in water and should contain no fibrous components. Earth core leakage systems (or safety switches) are to be installed. Only submersible-type splices should be used below the relevant flood level. All conduits located below the relevant designated flood level should be so installed that they will be self-draining if subjected to flooding.

Equipment

All equipment installed below or partially below the relevant flood level should be capable of disconnection by a single plug and socket assembly.

Reconnection

Should any electrical device and/or part of the wiring be flooded it should be thoroughly cleaned or replaced and checked by an approved electrical contractor before reconnection.

Heating and Air Conditioning Systems

Heating and air conditioning systems should, to the maximum extent possible, be installed in areas and spaces of the house above the relevant flood level. When this is not feasible every precaution should be taken to minimise the damage caused by submersion according to the following guidelines.

Fuel

Heating systems using gas or oil as a fuel should have a manually operated valve located in the fuel supply line to enable fuel cut-off.

Installation

The heating equipment and fuel storage tanks should be mounted on and securely anchored to a foundation pad of sufficient mass to overcome buoyancy and prevent movement that could damage the fuel supply line. All storage tanks should be vented to an elevation of 600 millimetres above the relevant flood level.

Ducting

All ductwork located below the relevant flood level should be provided with openings for drainage and cleaning. Self-draining may be achieved by constructing the ductwork on a suitable grade. Where ductwork must pass through a water-tight wall or floor below the relevant flood level, the ductwork should be protected by a closure assembly operated from above relevant flood level.

A9.9 - Land use categories

Table A9.2 - Land use categories (where definitions or specific land use not provided, refer to relevant EPI or the NSW Floodplain Development Manual for definition)

Essential Community Facilities	Critical Utilities and Uses	Subdivision	Residential	Commercial or Industrial	Tourist Related Development	Recreation or Non-urban Uses	Concessional Development
• Community facility which may provide an important contribution to the notification or evacuation of the community during flood events • Hospitals	• Childcare centre • Educational establishments; • Housing for older people or people with a disability (Seniors Living SEPP) • Institutions; • Liquid fuel depot; • Offensive or hazardous industry; • Public building • Public utility (including generating works) • Undertakings which are essential to evacuation during periods of flood or if affected would unreasonably affect the ability of the community to return to normal activities after flood events • Telecommunication facilities and networks. • Utility undertakings	• Subdivision of land which involves the creation of new allotments, with potential for further development.	• Backpackers inn • Bed and Breakfast • Boarding houses • Brothels • Camp or caravan park site – long-term sites only (i) • Dual occupancy development (attached or detached) • Dwelling • Dwelling house or house • Farm stay establishment • Home business, occupation or related • Hotel • Group homes • Medium density housing • Motel	• Amusement park • Bulky goods retail • Bus Depot • Car repair stations • Club • Commercial premises • Gas holder • General store • Health care professional • Heavy vehicle parking • Heliports / Helipad • Industry (general, light, heavy, airport related) • Junkyard • Light industrial retail outlet • Liquid fuel depot • Mine • Mineral sand mine Motor showroom	• Caravan site – short term sites only (i) • Eco-tourism facility • Rural tourist facility • Tourist facility	• Agriculture • Aquaculture • Bush food plantation • Extractive industry • Forestry • Intensive horticulture or plant growing and intensive agriculture, livestock keeping or animal establishment • Picnic ground • Recreation areas and minor ancillary structures (eg. toilet blocks or kiosks); • Roadside stall • Rural industry • Stock and sale yard • Turf farming • Utility installations (other than	• Subject to being permitted with consent under the relevant LEP, one building entitlement per lot on vacant lots existing prior to 7/9/05 and subdivisions approved prior to 7/9/05. All proposed buildings and works are to be sized and situated where they will have the least impact on flood behaviour and adjoining properties. No structures are permitted in floodway. ***In the Case of Residential Development;*** • Additions or alterations to an existing dwelling up to 30m^2 of additional habitable floor area (once only) No structures are permitted in floodway. • Garages or outbuildings with maximum floor area of 40m2 (medium risk) or 20m2 (high risk). • Redevelopment for the purposes of

Essential Community Facilities	Critical Utilities and Uses	Subdivision	Residential	Commercial or Industrial	Tourist Related Development	Recreation or Non-urban Uses	Concessional Development
			• Recreation Establishment • Rural workers dwelling • Tourist cabin • Additions or alterations to dwellings to create greater than 30m^2 additional habitable floor area • Garages or outbuildings with a minimum floor area of 40m2	• Passenger and road transport terminals • Place of worship / assembly • Plant nursery Professional consulting rooms • Racecourse • Recreation facility • Refreshment room or Rural restaurant • Showground • Sawmill and Timber yard • Service station • Shop • Veterinary surgery • Warehouse • Waste Management facilities or works		critical utilities) • Wetland improvement	substantially reducing the extent of flood affectation to the existing building. ***In the Case of Other Development;*** • Additions or alterations to an existing building of not more than 20% of the of the floor area or 150m2 whichever is the lesser (once only). No structures are permitted in floodway. • Redevelopment for the purposes of substantially reducing the extent of flood affectation to the existing building.

A9.10 - Schedules
Table A9.3 - Schedules 1 and 2

Note: Schedule 1 also applies to Little Lake/Elliott Lake, Macquarie Rivulet and Horsley Creek flood plains.

SCHEDULE 1: DEVELOPMENT CONTROLS - General

To be used for the Entire Shellharbour LGA where no catchment specific FRMP exists

Planning Consideration	Flood Risk Precincts (FRP's)																							
	Low Flood Risk								Medium Flood Risk								High Flood Risk							
	Essential Community Facilities	Critical Utilities	Subdivision	Residential	Commercial & Industrial	Tourist Related Development	Recreation & Non-Urban	Concessional Development	Essential Community Facilities	Critical Utilities	Subdivision	Residential	Commercial & Industrial	Tourist Related Development	Recreation & Non-Urban	Concessional Development	Essential Community Facilities	Critical Utilities	Subdivision	Residential	Commercial & Industrial	Tourist Related Development	Recreation & Non-Urban	Concessional Development
Floor Level		3										2,6,7	2or5	2	1	2,4,6							1	2,4,6
Building Components		2										1	1	1	1	1							1	1
Structural Soundness		3		2		2						1or2	1	1or2	1	1							1	1
Flood Affectation		2	2		2	2					1	1or2	2	2	2	2							1	1
Evacuation		2,4	5	3,4	4	3,4					5	3,4	1,4	3,4	1	1							1	1or3
Management & Design		4,5	1								1,6		2,3,5	2,3,5	2,3,5	2,3,5							2,3,5	2,3,5

Not Relevant — Unsuitable Land Use

Note:

a. Freeboard equals an additional height of 500mm

b. Other controls relating to development such as fencing, car parking, filling etc may also apply as outlined in Section 2 of this Plan

c. For additions and alterations in High Flood Risk Precincts the submitted engineers report will need to address all related Planning Considerations with reference to the existing building

Floor Level

1. All Floor Levels to be equal to or greater than the 20 year ARI flood level
2. Habitable floor levels to be equal to or greater than the 100 year ARI flood level plus freeboard
3. All Floor Levels to be equal to or greater than the PMF flood level plus freeboard
4. Floor levels to be as close to the design floor level as practical & no lower than the existing floor level when undertaking alterations or additions
5. Floor levels of shops to be as close to the design floor level as practical. Where the below the design floor level, more than 30% of the floor area to be above the design floor level or premises to be flood proofed below the design floor level
6. Garage floor level to be no lower than 300mm above finished adjacent ground level
7. Garage floor level to be no lower than the 100 year ARI flood level or 300mm above finished ground (whichever is the greater)

Building Components & Method

1. All structures to have flood compatible building components below or at the 100 year ARI flood level plus freeboard
2. All structures to have flood compatible building components below or at the PMF level plus freeboard

Structural Soundness

1. Engineers report to certify that any structure can withstand the forces of floodwater, debris and buoyancy up to and including a 100 year ARI flood plus freeboard
2. Engineers report to certify that any structure can withstand the forces of floodwater, debris & buoyancy up to & including a PMF flood where floor level elevated to the PMF is required to satisfy evacuation criteria
3. Engineers report to certify that any structure can withstand the forces of floodwater, debris & buoyancy up to & including a PMF flood

Flood Affectation

1. Engineers report may be required to certify that the development will not increase flood affectation elsewhere.

   Note: *When assessing flood affectation, the following may be required to be considered:*

   (i) Loss of storage area in the floodplain

   (ii) Cummulative impact of similar development in the floodplain

   (iii) Changes in flood levels & velocities caused by alteration of conveyance of flood waters
2. The impact of the development on flooding elsewhere to be considered in assessment. Engineers report may be required.

Evacuation

1. Reliable access for pedestrians required during 100 year ARI flood
2. Reliable access for pedestrians and vehicles required during a PMF flood
3. Reliable access for pedestrians or vehicles is required from the building, commencing at a minimum level equal to the lowest habitable floor level to an area of refuge above the PMF level, or a minimum of 20m2 of the dwelling to be above the PMF level.
4. The development is to be consistent with any relevant flood evacuation strategy or similar plan
5. Applicant to demonstrate that in the event of a flood, the development will have timely, orderly and safe access for emergency personelle to the site

Management and Design

1. Applicant to demonstrate that potential development as a consequence of a subdivision proposal can be undertaken in accord with this Plan
2. Site Emergency Response Flood plan required (except for single dwelling-houses) where floor levels are below the design floor level
3. Applicant to demonstrate that area is available to store goods above the 100 year ARI flood level plus freeboard
4. Applicant to demonstrate that area is available to store goods above the PMF level plus freeboard
5. No external storage of materials below the design floor level which may cause pollution or be potentially hazardous during any flood
6. All new building envelopes to be created above the 100 year ARI flood level plus freeboard

Schedule 2

LAKE ILLAWARRA FLOODPLAIN DCP MATRIX

Planning Consideration	Flood Risk Precincts (FRP's)																							
	Low Flood Risk								**Medium Flood Risk**								**High Flood Risk** (and Interim Riverine Corridor)							
	Essential Community Facilities	Critical Utilities	Subdivision	Residential	Commercial & Industrial	Tourist Related Development	Recreation & Non-Urban	Concessional Development	Essential Community Facilities	Critical Utilities	Subdivision	Residential	Commercial & Industrial	Tourist Related Development	Recreation & Non-Urban	Concessional Development	Essential Community Facilities	Critical Utilities	Subdivision	Residential	Commercial & Industrial	Tourist Related Development	Recreation & Non-Urban	Concessional Development
Floor Level		3										2, 6 or 7	2or5	2	1	2,4,6							1	2,4,6
Building Components		2		2		2						2	1	2	1	1							1	1
Structural Soundness		3		3		3						3	2	3	2	2							1	1
Flood Affectation		2,3			2,3	2,3						2,3	2,3	2,3	2,3	2,3							1,3	1,3
Evacuation		2,4		3,4	4	3,4						3,4	1,4	3,4	1	1							1	1
Management & Design		4,5											2,3,5	2,3,5	2,3,5	2,3,5							2,3,5	2,3,5

	Not Relevant		Unsuitable Land Use		Concessional development to use the 100 Year including Medium Level Sea Level Rise, all other development to use 100 Year including High Level Sea Level Rise.

Floor Level	
1	All Floor Levels to be equal to or greater than the 20 year ARI flood plus 0.5m (freeboard) unless justified by site specific assessment.
2	Habitable floor levels to be equal to or greater than the 100 year ARI flood plus 0.5m (freeboard).
3	All Floor Levels to be equal to or greater than the PMF.
4	Floor levels to be as close to design floor level as practical & no lower than existing floor level (alterations or additions only).
5	Floor levels of shops to be as close to the design floor level as practical (i.e. 100 Year ARI + 0.5m). Where it is below the design floor level, more than 30% of the floor area to be above the design floor level or premises to be flood proofed below the design floor level.
6	Garage floor level to be no lower than 300mm above finished adjacent ground.
7	Garage floor level to be no lower than the 100 year ARI flood level minus 300mm or 300mm above finished adjacent ground (whichever is the greater).
Building Components & Method	
1	All structures to have flood compatible building components below or at the 100 year ARI flood level plus 0.5m (freeboard).
2	All structures to have flood compatible building components below or at the PMF level.
Structural Soundness	
1	IEAust NPER Structural Engineers report to certify that any structure can withstand the forces of floodwater, debris & buoyancy up to & including a 100 year ARI flood plus 0.5m (freeboard).
2	Applicant to demonstrate that any structure can withstand the forces of floodwater, debris & buoyancy up to & including a 100 year ARI flood plus 0.5m (freeboard).
3	IEAust NPER Structural Engineers report to demonstrate that any structure can withstand the forces of floodwater, debris & buoyancy up to & including a PMF event.
Flood Affectation	
1	IEAust NPER Hydraulic Engineers report required to certify that the development will not increase flood affectation elsewhere.
2	The impact of the development on flooding elsewhere to be considered.
3	No wholesale filling of sites around the foreshore of the lake is permitted, unless supported by a sensitivity analysis indicating that there is no significant impact on flood levels. Also, filling that impacts on active flow areas in the stream networks feeding Lake Illawarra will not be supported. However, filling within existing building areas is permitted. Filling of depressions outside of existing building areas may only be permitted subject to it being demonstrated that there is no loss of flood storage across the site for all events up to the PMF.

LAKE ILLAWARRA FLOODPLAIN DCP MATRIX

Evacuation	
1	Reliable access for pedestrians required during a 100 year ARI flood.
2	Reliable access for pedestrians and vehicles required during a PMF event.
3	Reliable access for pedestrians or vehicles is required from the building, commencing at a minimum level equal to the lowest habitable floor level to an area of refuge above the PMF, or a minimum of $20m^2$ of the gross floor area of the dwelling to be above the PMF level.
4	The development is to be consistent with any relevant flood evacuation strategy or similar plan.
5	Applicant to demonstrate that evacuation of potential development as a consequence of a subdivision proposal can be undertaken in accord with this Plan.
Management and Design	
1	Applicant to demonstrate that potential development as a consequence of a subdivision proposal can be undertaken in accordance with DCP.
2	Site Emergency Response Flood Plan required (except for single dwelling-houses) where floor levels are below the PMF
3	Applicant to demonstrate that area is available to store goods above the 100 year ARI flood plus 0.5m (freeboard)
4	Applicant to demonstrate that area is available to store goods above the PMF level
5	No external storage of materials below the design floor level which may cause pollution or be hazardous during any flood

APPENDIX 10 - STORMWATER MANAGEMENT

A10.1 - Property drainage systems

General

A10.1.1 The purpose of a drainage system may include the following:

a. To reduce the level of ponded rainwater on a property that may constitute a health problem.

b. To reduce surface or sub-surface stormwater that could cause nuisance, damage or hazard on the property.

c. To mitigate effects of improvements on a property that could result in increased nuisance, damage or hazard on other properties.

d. To reduce erosion and resulting environmental impacts.

e. The drainage system should be designed to include:

i. suitable sub-surface drainage to protect structures, mitigate long term surface water ponding and prevent concentrating flows upon adjacent properties

ii. a system for collecting and conveying surface water runoff that will prevent water entering buildings or damaging improvements on the site, minimise nuisance for people accessing buildings, prevent long term surface water ponding, prevent erosion, and protect adjoining and downstream properties from any adverse stormwater impacts resulting from the proposed development

iii. a system of overland flow paths to provide fail-safe protection of buildings on the property and protection to adjoining and downstream properties in the event of pipe blockage or storm events that generate runoff greater than the pipe capacity

iv. suitable means to ensure the quality of stormwater leaving the site must not have a measurable adverse impact upon the receiving waters, especially with regard to sediment and nutrient control, upon completion of construction.

Materials and products

A10.1.2 The requirements for materials and products used in stormwater installations within the subject property, must be in accordance with Australian Standard 3500.3.2-1998 (or subsequent amendments).

Design average recurrence intervals

Table A10.1 - Elements of stormwater design

Element of Stormwater System	Design Average Recurrence Interval
All pipes and associated components for: a. single occupancy b. commercial and industrial developments	20 year
Overland flow paths	100 year

A10.1.3 Longer recurrence interval design storms need to be used in instances where this level of danger to persons or risk of significant property damage warrants such an approach. This would include development on flood prone land and/or subject to overland flow.

Hydrology & hydraulics

Determining flow rates

A10.1.4 Use of the rational method for determining flow rates will be acceptable where the catchment is relatively small (less than 15,000 m2), has fairly uniform characteristics and the level of accuracy (sensitivity) of the results is not critical.

A10.1.5 Where the catchments are large and/or a higher confidence in the flow rate prediction is necessary, peak flow rates should be determined using runoff routing computer models.

A10.1.6 Where an overland flow path needs to be accurately determined, the flow path should be modelled using HEC-RAS Version 2.2 (or a later version if available), or similar.

A10.1.7 Where Council has a catchment modelled as part of the floodplain risk management process, flow rates may be available to be used in the modelling for the proposal.

Surface runoff

Runoff from grassed/pervious areas

A10.1.8 As well as runoff from impervious/hardened areas, runoff from grasses and landscaped areas need only to be collected and piped to Council's system where:

a. regrading or other improvements may concentrate runoff or increase the rate of flow onto adjoining properties or across a public footway (flows across a public footway should not create a nuisance) or

b. long-term ponding of water may occur that could constitute a health hazard or significant nuisance for property users.

Managing stormwater entering properties from upstream lots

A10.1.9 Runoff currently entering the site from upstream properties should not be obstructed from flowing onto the site nor redirected so as to increase the quantity or concentration of surface runoff entering adjoining properties.

A10.1.10 Where this runoff is to be redirected into the street kerb or Council's drainage system the requirements of the Section - **Disposal of Property Runoff** will need to be satisfied.

A10.1.11 Where the overland flow rates are significant, the requirements of the section **Stormwater inundation due to overland flow**, will need to be satisfied.

Managing runoff from existing property improvements

A10.1.12 Where the efficiency of an existing drainage system on the property will be compromised by proposed additional site improvements, the existing system is to be suitably modified to offset any adverse impacts.

Sub-soil drainage system

A10.1.13 Sub-soil drainage systems are to be designed and constructed in accordance with AS 3500.3.2 – 1998 (or subsequent amendments). Sub-soil drains must not be directly connected to street kerbs and gutters.

A10.1.14 Sub-soil drains must firstly be connected to a pit and discharged through a gravity fed system that will not have an adverse impact upon adjacent properties. The disposal should be generally in accordance with Section – **Disposal of Property Runoff**.

Collection of roof water runoff

Gutters

A10.1.15 The size of the gutter and number of downpipes are to be designed to ensure no overflows for storms up to the 20-year ARI.

A10.1.16 Box gutters are to be sized to ensure no overflow for storms up to the 100-year ARI in accordance with AS 2180 – 1986 (or subsequent amendments).

Pipelines

Pipe size

A10.1.17 For smaller catchments the minimum pipe size must be:

a. 90 mm. where the line only receives roof water runoff

b. 100 mm. where the line receives runoff from paved or unpaved areas within the property.

A10.1.18 The minimum pipe velocity should be 0.6m/s and a maximum velocity of 6.0m/s during the design pipes.

A10.1.19 All pipes must be designed for the design ARI storm event.

A10.1.20 Pipes draining larger catchments will need to be designed by a suitably qualified engineer.

Pipe grade

A10.1.21 The minimum pipe grade must be 1% for pipes less than 225 mm and 0.5% for all larger pipes.

A10.1.22 Pipes with a gradient greater than 12% will require anchor blocks at the top and bottom of the inclined section and at intervals not exceeding 3m.

Depth of cover for PVC pipes

A10.1.23 Minimum pipe cover must be as per **Table A10.2** below.

Table A10.2 - Cover for PVC pipes

Location	Minimum Cover
not subject to vehicle loading	100mm for all development
subject to vehicle loading	450mm where not in a road
under a sealed road	600mm
unsealed road	750mm
paved driveway	100mm plus depth of concrete

See AS 2032 Installation of UPVC Pipes (or subsequent amendments) for further information.

A10.1.24 Concrete pipe cover must be in accordance with AS 3725-1989 Loads on buried concrete pipes (or subsequent amendments), however a minimum cover of 450mm will apply.

Connections to stormwater drains under buildings

A10.1.25 Must be carried out in accordance with the requirements of AS 3500.3.2-1998 (or subsequent amendments). Where loads are placed on pipes (by settlement or other forces) the pipe must also be structurally designed.

Above ground pipe work

A10.1.26 Must be carried out in accordance with AS 3500.3.2-1998 (or subsequent amendments).

Building near stormwater & sub-soil drains

A10.1.27 Must be carried out in accordance with AS 3500.3.2-1998 (or subsequent amendments). Typically, where a drain is laid near to a footing the trench must be located beyond a 45° angle from the base of the footing. Allowance needs to be made for future upgrading of the pipeline to handle larger storm events.

A10.1.28 Where an easement across a property contains a pipeline conveying stormwater runoff from roads and parkland, the footing must be extended to a point a minimum of 300mm below the invert of the pipe or to sound rock.

Pits

General

A10.1.29 Stormwater pits or cleaning eyes must be installed to facilitate maintenance of stormwater pipes, orifice plates, debris screens and reflux valves. All drainage systems draining to Council's trunk drainage system or to a public road must have a drainage pit of dimensions not less than 450 x 450mm at the lowest point of the site system just before it leaves the site in the case of drainage systems that do not have an onsite detention system. This pit must contain a debris screen.

A10.1.30 In medium density residential developments (villas and townhouses), the private courtyard of each residence must contain at least one stormwater drainage pit of dimensions not less than 300 x 300mm and be suitably graded to this pit. Stormwater pits should be located in a manner that will ensure sheet stormwater flow between buildings, or between buildings and boundary fences is minimised.

A10.1.31 Pits or cleaning eyes must be installed:

a. at a maximum spacing of 30m along a length of pipe

b. directly above any reflux valves, orifice plates or debris screens.

Inlet pits

A10.1.32 Inlet pits are to be installed at locations to permit the entry of water to a stormwater drain and must have a flush fitting grate.

A10.1.33 Surface inlet pits must be sufficiently large to accept the predicted inflow in accordance with the design ARI storm event.

A10.1.34 Pits and grated trench drains must be positioned within the site to ensure:

a. all runoff from roofed, paved and landscaped areas is collected

b. runoff does not enter garages or buildings

c. long term ponding of stormwater does not occur

d. pedestrian access to buildings is not affected by flow depths and/or flow velocities

e. runoff from paved driveways, courtyards and paths, or concentrated runoff from grassed and landscaped areas, does not flow over the public footway or onto adjoining properties.

Arrestors

A10.1.35 Arrestors are installed to remove contaminants such as sediment, oil and other contaminants from the stormwater before it discharges into the receiving system.

A10.1.36 Sediment arrestors must be installed for the following developments:

a. residential developments of more than three dwellings

b. all commercial developments that may involve the use/transportation of contaminants

c. commercial developments on allotments greater than 1500m2. Where developments directly involve more than one allotment, then the total area of allotments directly involved is to be considered.

A10.1.37 Sediment and oil arrestors must be installed for all industrial developments.

A10.1.38 Any sediment and/or oil arrestors must be designed in accordance with AS 3500.3.2-1998 (and subsequent amendments) and must have an opaque pit lid to prevent sunlight entering into the pit thereby reducing the likelihood of mosquito breeding.

Pit sizes & design

Table A10.3 - Pit sizes and design

Depth (mm)	Minimum Pit Size (mm)
300 ≥ D	300 X 300
600 ≥ D > 300	450 X 450
900 ≥ D > 600	600 X 600
1200 ≥ D > 900	900 X 900 (with step irons)
D > 900	900 X 900 (with step irons)

A10.1.39 All pipes should be cut flush with the wall of the pit.

A10.1.40 The grated covers of pits larger than and including 600 x 600mm are to be hinged to prevent the grate from falling into the pit.

A10.1.41 The base of the drainage pits should be self-flushing and at the same level as the invert of the outlet pipe. Rainwater should not be permitted to pond within the stormwater system.

A10.1.42 Continuous trench drains are to be of a width not less than 150mm and a depth of not less than 100mm. The bars of the grating are to be parallel to the direction of surface flow.

A10.1.43 Pits between 0.9 metres and 6m deep are to have step irons in accordance with AS 1657 (or subsequent amendments). For pits greater than 6m deep other means of access must be provided.

A10.1.44 PVC pits will only be permitted if they are not of greater size than 450 x 450mm (maximum depth 450mm) and are heavy duty.

A10.1.45 In-situ pits are to be constructed on a concrete bed of at least 150mm thick. The walls are to be designed to meet the minimum requirements of clause 4.6.3 of AS 3500.3-1990 (or subsequent amendments). Pits deeper than 1m are to be reinforced concrete.

A10.1.46 Grates are to be galvanised steel hinged grid type. Grates are to be of a heavy-duty type in areas where they may be subject to vehicle loading.

A10.1.47 All pits that will become Council's responsibility must be poured in-situ with a minimum wall thickness of 150mm and as detailed in Council's Subdivision Code.

Building over enclosed drainage easements

A10.1.48 Building over enclosed drainage easements is not permitted.

Building over inter-allotment drainage pipelines

A10.1.49 Generally no fencing, masonry or retaining structures will be permitted to be constructed within or across an easement other than fencing on boundaries. Any section of wall spanning the easement must be constructed to enable its easy removal without resulting in failure of the remainder of the structure. The footings must be constructed to prevent any loading imposed on the pipe.

Easements

A10.1.50 No part of any structure, including footings and eaves overhang, are permitted to encroach onto any transmission line easement or Council drainage easement without Council approval.

A10.1.51 Any structure adjoining an easement must be designed to withstand all forces should the easement be excavated to existing pipe invert level.

A10.1.52 Excavation associated with the development must not result in the loss of support of the drainage easement.

A10.1.53 Paths and driveways may be constructed over easements subject to Council approval.

A10.1.54 Cut and fill platforms must not extend over a drainage easement.

A10.2 - Disposal of property runoff

General

A10.2.1 All water from residential developments including the roof, landscaped and paved areas must be conveyed to the street or other approved system. Where fall is not available to the street and inter-allotment drainage is not available, the acquisition of a drainage easement through a downstream property may be required to achieve adequate legal disposal of all on-site drainage.

A10.2.2 In older subdivision areas where fall to the street and connection to an easement is not available, discussion on alternative stormwater disposal methods with Council is advisable prior to lodgement of a development application.

A10.2.3 A number of locations within the Shellharbour Council area are subject to flood or coastal hazards. Properties within these areas will be required to comply with the relevant Government Policy and **Appendix 9 – Flood plain Risk Management.** Flood studies or assessments may be required in support of proposed developments in these areas.

A10.2.4 Filling of a site to achieve a fall to the street will generally not be accepted. Filling of flood prone sites will be considered separately. Prior to Council approval of any filling of the site, the developer shall satisfy Council that the proposed filling will have no significant effect upon flood risk, both upstream and downstream of the site.

Street kerb & gutter

A10.2.5 Sites that generate less than 50l/s of runoff in the minor storm event will be permitted to discharge the flow via a discharge point at the kerb and gutter immediately fronting the property. A maximum of two pipes of 100mm diameter may be used to discharge to the kerb and gutter. Galvanized steel pipe, sewer grade UPVC pipe or 'Corflow' spirally reinforced PVC pipe must be used from the property boundary to the kerb and gutter. The kerb and gutter connection must be a 100mm diameter galvanised steel section (for 150mm kerb and gutter) or a 150mm x 50mm galvanised rectangular steel section for roll kerb, ensuring that the galvanised section is fully encased by concrete.

A10.2.6 The minimum cover for a pipeline in the footpath reserve between the property boundary and kerb and gutter is 50mm. For dual connections a minimum separation of 100mm is required to maintain the structural integrity of the kerb.

A10.2.7 The pipes must cross the footpath reserve within the immediate property frontage.

Discharge to Council's stormwater system

A10.2.8 Where the minor system discharge from any one site exceeds 50l/s the disposal of runoff must be via a single pipeline connected directly into an existing Council drainage pipeline.

A10.2.9 Where no pipeline exists in the immediate vicinity of the development, disposal must be via a suitably designed and constructed pipeline to the nearest available Council stormwater pit in accordance with Council's Subdivision Code and good engineering practice. The minimum pipe size for the pipe extension must be 375mm in diameter. The pipeline must be design by a suitably qualified civil engineer and submitted for assessment with the development application for the proposal.

A10.2.10 If part/all of the existing drainage system is found to not have the required capacity, then that portion of the system must be augmented/amplified to take the additional flow to Council's current standards. In this instance the developer must refer to Council's Subdivision Code for relevant standards.

A10.2.11 Where connection is to be made directly to Council's underground drainage system, a minimum 150mm diameter pipe must be used (sewer grade PVC, fibre reinforced, or concrete). The connection must be made good with a concrete mix with any damage to the existing pipeline repaired to Council's satisfaction. The new pipeline must finish flush with the internal wall of the existing Council pipe.

A10.2.12 All pipes should enter the pit perpendicular to the pit wall and must be cut flush with the internal wall of the pit. All damage to the wall of the pit must be fully repaired to Council's satisfaction.

Piping through a neighbouring property

A10.2.13 Council will not approve stormwater systems which drain against the natural grade of the land. Where the property falls away from the road frontage and the property does not have the benefit of an interallotment drainage easement or access to Council's drainage system, Council must require the owner to obtain an appropriate drainage easement through the adjoining private property. This will allow the site to discharge its stormwater by gravity.

A10.2.14 Consideration must be given to the path taken by the stormwater during storm events that generate runoff in excess of the design pipe capacity. Where overflows could result in flood damage on adjoining properties, the pipes must be designed to accommodate runoff from storms up to the 1% AEP storm event.

A10.2.15 Where an interallotment drainage easement is to be created, a letter of agreement to the creation of the easement from all the affected property owners must accompany the development application. This is to demonstrate to Council that a suitable easement/s can be obtained. The letter/s must be accompanied with a plan of the location of the proposed easement/s also signed by all the affected property owners. The letter/s is/are not to contain any conditions that may preclude the creation of the easement.

A10.2.16 Pipelines within interallotment drainage easements are to have pits or inspection eyes with connectors to the surface constructed at all bends and junctions. Pits are to be located wholly within the interallotment easement.

Width of drainage easements

Width of interallotment easements should be in accordance with **Table A10.4 below.**

Table A10.4 - Width of drainage easements

Nominal Pipe Diameter	Easement Width
150 mm & 225mm	1.2m
300mm to 400mm	1.5m
525mm	3.0m

See provisions in this Appendix for the procedures involved in creating private drainage easements.

Open channel or watercourse

A10.2.17 Discharge to a suitable natural watercourse or creek may be allowed subject to approval by Council. The watercourse is to be protected against erosion at the point of discharge. In this regard, an outfall apron or energy dissipation structure is to be provided. Stabilising a small length of the watercourse in the vicinity of the outlet is not appropriate as it can cause problems of erosion upstream and downstream of the stabilised section. Only a single discharge point to the watercourse from the development will be permissible.

A10.2.18 Given the proposed method of discharge, the development will be classified as Integrated Development and will therefore require referral to the relevant State government agency to obtain a Part 3A Permit under the *Rivers and Foreshores Improvement Act, 1948*.

A10.2.19 Where a water course/channel is nominated as community land an easement must be created over the pipe, headwall and scour control. This is subject to final Ministerial approval.

A10.2.20 For land adjacent to Lake Illawarra and the ocean it is preferable for stormwater outlets and associated scour control to be contained wholly within the subject site.

Onsite absorption systems

A10.2.21 Single dwelling houses on properties that cannot pipe runoff to the street or do not have access to a suitable interallotment or Council drainage pipeline, may under certain conditions be permitted to discharge stormwater runoff into an onsite absorption system.

A10.2.22 It is to be noted that this is the least preferred allowable option for stormwater disposal for the following reasons:

a. it severely restricts any opportunity to further develop the site without redesigning and reconstructing the system

b. it generally involves substantial earthworks

c. it is difficult to predict changes to the water-table resulting from the installation of such systems

d. infiltration systems generally require maintenance if they are to continue to work effectively.

A10.2.23 If it is proposed to use onsite absorption, then the following requirements must be complied with:

a. The property must not be located within any areas identified, by a qualified geotechnical engineer, as containing soil types that are predominately not conducive to the dispersion of stormwater or likely to induce landslip. The applicant must determine whether or not the property is so affected before further proceeding with any detailed drainage design.

b. Evidence must be supplied by the applicant that all relevant downstream property owners have been approached and are unwilling to grant a private drainage easement that will allow the piping of stormwater to a Council street or suitable piping.

c. The base of the facility must be at least 1 to 1.5m above the seasonal high water table, bedrock, or a low permeability layer.

d. The facility must not be constructed on potential high salinity soils, hazard soils, fill or contaminated land.

e. The total plan area of all impervious areas such as roofs, driveways, paths and paved courtyards on the property do not exceed 35% of the total site area and there is an area downslope of the dwelling at least equal to the impervious areas draining to it on which to construct the absorption trench. Note, this applies to the site cover for existing lots only. New land subdivisions will not be permitted to dispose to absorption systems.

f. The extent of driveways and other paving is to be kept to a minimum.

g. Design and supporting calculations, prepared by a suitably qualified and experienced engineer, of a stormwater management system that will cater for runoff from the site to the minor system design ARI must be supplied by the applicant with the development application. This is to include any necessary geotechnical information required to support the design, an assessment of the in-situ infiltration of the soil profile, consideration of antecedent moisture conditions and performance over a variety of rainfall events. The design is to be accompanied with a report by a geotechnical engineer attesting to the absorption capacity of the system, groundwater table level, reactivity of the soil, and clearly demonstrating that the proposal will not have an adverse impact upon adjoining and/or downstream properties by the direction or concentration of stormwater on those properties to the 1% AEP storm event.

h. Any onsite absorption structures are to be located as far as practicable from the downstream property boundary (minimum 5m) and a minimum of 3m from buildings. If the system is being constructed in conjunction with any new structure (including residential dwellings), the foundations of the structure are to consist of pier and beam and the piers are to be to a solid stratum. The system should not be placed over any paved surfaces.

i. A debris/silt collection pit must be constructed immediately upstream of the underground system, a capped observation riser installed over the underground system and area downstream is to be landscaped in a manner that will ensure a reduction of sub-soil flows into the adjoining property.

j. A positive covenant is to be placed on the Property Title to ensure that the system is adequately maintained according to the approved maintenance schedule. A Restriction as to User is to be placed on the Property Title to ensure that no additional impervious areas are created on the property. The authority to vary the Restriction is to be Council.

k. Onsite absorption systems may be used to distribute stormwater runoff from properties that adjoin bushland where no connection is available to a drainage system. In these cases the absorption trench may be constructed no closer than 2m from the boundary adjoining the bushland and run parallel with the contours.

A10.2.24 Onsite absorption is not permitted in areas where there is a clearly identified soil salinity problem.

A10.2.25 Section 88K of the *Conveyance Act 1919* permits the Court to make an order imposing an easement over land if the easement is reasonably necessary for the effective use or development of other land that will have the benefit of the easement. There are a number of criteria outlined in the Act that must first be satisfied.

New minor structures (including sheds and swimming pools)

A10.2.26 When constructing structures in the rear yards of existing dwellings that already discharge runoff into an onsite absorption system the applicant must demonstrate one of the following:

a. the structure will not have an adverse impact upon the operation of the absorption system or

b. the modifications to the existing system produce no adverse stormwater impacts upon adjacent or downstream properties.

A10.2.27 This will generally require a report prepared by a suitable qualified and experienced engineer, of the existing stormwater management system and its capacity to handle the total (existing and proposed development) runoff. The design is to be accompanied with a report by a geotechnical engineer attesting to the absorption capacity of the system and demonstrating that the proposal will not have an adverse impact upon adjoining and/or downstream properties by the direction or concentration of stormwater on those properties.

A10.2.28 In some instances, it may not be possible to modify the existing system due to soil conditions, amount of runoff etc. In these instances, no development approval is to be granted until it can be demonstrated that a suitable interallotment easement will be granted downstream by the downstream owners.

Use of pumps

A10.2.29 Pumps may only be used to drain seepage and a minor amount of direct runoff from a basement car parking area. The area directing runoff to the pumped system must not be greater than 10% of the total basement area.

A10.2.30 Wet wells must be designed and constructed in accordance with AS 3500.3.2 – 1998 (or subsequent amendments).

A10.2.31 The pumps must be dual submersible pumps and must be sized and constructed in accordance with AS 3500.3.2 – 1998 (or subsequent amendments).

A10.2.32 Direct connection of a pump's rising main directly to the kerb will not be permitted.

A10.2.33 Where connection to the kerb is proposed, the pumped water must be treated prior to discharge to remove any pollutants before being piped across the public footway by gravity flow.

A10.2.34 The design must include calculations showing that the maximum ponding depth for a 1% AEP storm event (in the event of a 3 hour power failure) is not greater than 300mm.

Use of charged lines

A10.2.35 Charged lines will not be permitted for any developments.

Disposal of runoff collected from upstream properties

A10.2.36 Where runoff from upstream properties is intercepted and collected on the subject property it must be disposed of in the following manner:

a. A combined flow of up to 50l/s from the development may be directed across the public footway by means of pipe and surface flow into the street kerb during the 20-year ARI storm event. If this limit is exceeded, consideration must be given to the impact of the additional flows within the street gutter.

b. If the diverted runoff will increase the risk of runoff topping the kerb and passing through downstream lots, or will result in a depth x velocity product in the kerb increasing beyond a value deemed safe then the diverted runoff must be piped to an acceptable underground piped drainage system. The pipe must be sized to convey up to the 100-year ARI storm event with a minimum pipe size as outlined in the provision on – **Discharge to Council's Stormwater System**, in this Appendix.

c. In all other cases the diverted runoff may be discharged into the street gutter in front of the subject property. Runoff from storms up to the 5-year ARI event is to be piped under the footway to the kerb, with an overflow to be provided directing excess stormwater to the street gutter. Where the overflow path is not directly to the street gutter and may result in stormwater entering a neighbouring property, the total flow from the 100-year ARI event is to be piped to the street gutter with the outlet designed to minimise velocities to below the 3m/s.

Overland flow paths

A10.2.37 Overland flow paths designed to contain a 1 in 100-year ARI storm flow are to be provided over all pipelines not designed to cater for this flow. The design of the overland flow path must consider the velocity – depth hazard. The overland flow paths are to be kept free of obstructions and must not be landscaped with loose materials that could be removed during a storm event, such as wood chip or pinebark.

A10.3 - Stormwater quality management

General

A10.3.1 As stormwater flows through a catchment it collects many substances including litter, sediment, nutrients, chemicals, oil and grease, depositing them further downstream. A coordinated and integrated approach, including the management of stormwater discharging from specific sites, is required if the quality of stormwater discharging into these waterways is to be of a standard that will not have a detrimental impact upon these waterways as well as maintaining or improving the quality of the natural environment.

A10.3.2 The philosophy of this Section is to manage the quality of stormwater at or near the source of potential pollutants. This will minimise the transportation of pollutants, thereby minimising potential environmental hazards. In practice this generally involves the design and installation of appropriate devices to treat stormwater before it leaves the subject site where deemed feasible.

Permanent control structures

Infiltration systems

A10.3.3 First flush infiltration systems are small gravel filled trenches wrapped in a geofabric membrane with a slotted pipe in the centre of the gravel bed that will disperse the first part of the runoff from a site into the ground. The 'first flush' runoff from small catchment areas generally has the highest nutrient loading and this type of system will take this small volume off line and allow the main part of the storm flow to pass on to the downstream drainage system.

A10.3.4 The system should be designed to allow the majority of the sediment to be collected at the inlet to the system and have a cleaning eye at the opposite end to allow flushing of any sediment and/or debris back to the cleaning sump if necessary.

A10.3.5 The above is the minimum requirement that is required for the control of stormwater pollutants from sites where new stormwater construction is undertaken.

Porous paving

A10.3.6 Porous paving must satisfy acceptable standards for site suitability, installation, maintenance and protection from material likely to hinder performance.

A10.3.7 The area to be paved does not receive high vehicular traffic volumes or regular use by heavy vehicles.

A10.3.8 The area to be paved is not located immediately downstream from areas likely to contribute significant amounts of sediment, debris, or windblown material.

A10.3.9 Sediment traps, vegetated filter strips or specially designed gutter systems are installed upstream of porous paving so as to reduce sediment inputs and minimise likelihood of clogging, particularly during the construction phase.

Runoff controls for streets & car parks

A10.3.10 Runoff from streets, car parks or other extensive paved areas must be adequately treated before discharge to an infiltration device, piped drainage system or natural waterway.

A10.3.11 A treatment system is designed and installed that incorporates one or more of the following measures:

a. gross pollutant trap

b. sand/gravel filter (or other appropriate device such as an oil and sediment separator)

c. grassed swales

d. vegetated filter strip

e. constructed wetland.

Temporary control measures for construction sites

General

A10.3.12 Appropriate site work practices are to be adopted to control runoff, mitigate soil erosion and trap pollutants before they can reach down slope lands and receiving watercourses.

A10.3.13 To protect downstream properties, Council's drainage system, natural watercourses and bushland areas from the adverse effects of sediment and other pollutants, the applicant must ensure that appropriate site work practices are adopted to ensure pollutants, including sediment, do not enter adjacent lands, street gutters, drains and/or natural and artificial water bodies.

Erosion & Sediment Control Plans (ESCPs)

A10.3.14 All applications submitted to Council involving the disturbance of the existing surface of the earth or placement of fill thereon or changes in the rate and/or volume of runoff entering a watercourse or flowing over land must include an Erosion & Sedimentation Control Plan (ESCP). An ESCP must be submitted for approval along with every application for demolition, earthworks or building works.

A10.3.15 ESCPs must be prepared in accordance with the standards outlined in the publication *Soils and Construction: Managing Urban Stormwater Fourth Edition Vol. 1* (or subsequent amendments) prepared by Landcom.

A10.3.16 Some proposals that involve minimal amounts of earthworks and/or clearing of vegetation, such as a pergola or deck, may be satisfactorily addressed by the submission of a suitably prepared statement when lodging an application.

A10.3.17 All erosion and sedimentation controls must be in place prior to the commencement of works.

A10.3.18 Failure to provide and maintain adequate erosion and sedimentation controls may result in the responsible individual/corporation receiving an on-the-spot fine of up to $1500 under the *Protection of the Environment Operations Act 1997.*

Maintenance of erosion & sedimentation control measures

A10.3.19 Maintenance of erosion and sedimentation control measures involves ensuring that they are kept in effective order. It is important that these measures are maintained so as to minimise the likelihood of sedimentation of waterways.

A10.3.20 Once installed, erosion and sedimentation control measures are to be maintained so as to ensure their continued proper operation until such time as development activities have been completed and the site fully stabilised.

ESCP assessment

A10.3.21 Erosion and Sediment Control Plans for all developments and/or associated works must be prepared to the satisfaction of Council and conform to the specifications and standards contained within this Appendix.

A10.3.22 Details of the proposed means of erosion and sedimentation controls are to be submitted to Council with the application.

ESCP principles

A10.3.23 The following principles should be considered when preparing an ESCP.

a. all runoff from surrounding land is to be diverted away from the area to be disturbed, where legal and possible.

b. all polluted runoff is to be retained and treated on site. Disturbance of vegetation is to be minimised.

c. all disturbed areas are to be stabilised with vegetation as soon as possible after earthworks are complete.

Vehicle access & road cleaning

A10.3.24 All vehicular entrances to the construction site must be stabilised to prevent them becoming a source of sediment. Fences should be erected to ensure vehicles cannot bypass them unless coming from a stabilised area. In some circumstances it will be desirable to install a wheel washing facility to minimise the transport of material onto the road.

A10.3.25 The gravel access as detailed below is only suitable for single dwelling developments. All other developments will require a heavier duty method such as shaker grids or wash-down bays to minimise the transportation of sediment.

A10.3.26 To prevent hazard and nuisance for vehicles using the public road, public roads must be kept free of mud and dirt. Sediment tracked onto the public roadway by vehicles leaving the construction site is to be swept up immediately.

A10.3.27 Where the street has been left in an unsatisfactory manner, Council may arrange for its own staff to clean the street. All costs associated with this work will be deducted from the builder's security deposit. Depending on the time Council's overseers can schedule the work, this may be charged at overtime or even call out rates.

Sediment basins

A10.3.28 Sediment basins must be used on small building sites, on all large construction sites and land subdivision in excess of 5000 m^2 and on sites in environmentally sensitive locations where the standards for use of sediment fences cannot be met. Sediment basins hold the sediment laden runoff onsite allowing time for the sediment particles to settle out. The 'clean' runoff is then pumped from the storage basin.

A10.3.29 The flocculant gypsum may need to be added to accelerate the time taken for water to clear. Alum is not permitted to be used as a flocculant.

A10.3.30 Sediment basins are to be designed using the process outlined in *Soils and Construction: Managing Urban Stormwater Fourth Edition Vol. 1* (or subsequent amendments) prepared by Landcom.

A10.4 - Water conservation measures

Stormwater reuse

A10.4.1 The reuse of stormwater under the right conditions is encouraged. Garden watering systems should incorporate rainwater tanks wherever possible. All new developments must be supported by BASIX Certification.

Rainwater tanks

A10.4.2 Rainwater tanks and use of stored rainwater for non-potable uses (watering gardens, washing, flushing of toilets etc) is to be encouraged.

A10.4.3 Measures must be taken to prevent the breeding of mosquitoes such as the installation of adequate screening.

A10.4.4 Following is the criteria for installation of tanks in residential and rural areas:

a. An application must be lodged detailing the size, location and appearance of any proposed rainwater tank to be installed

b. The water tank, associated drainage, plumbing and supporting structure must be of suitable appearance, design and location, compatible with the immediate surrounding environment. Water collected within the tank is to be used for domestic purposes only and does not replace the requirement for a stormwater detention system. Use of this water for drinking is subject to further requirements which ensure that the water will be healthy for human consumption (see next set of criteria)

c. Overflow from any tank must be piped to the approved drainage system

d. Plumbing from the tank must be separate from the reticulated Sydney Water supply system. Taps associated with the tank are to be clearly marked indicating the source of the water

e. The water tank inlet must be screened to prevent the entry of any animal/foreign matter into the tank and must be designed to preclude or discourage the breeding of mosquitoes

f. The tanks must be coloured externally in a manner that is harmonious with the immediate environment or screened behind a permanent physical barrier that serves that purpose. In any event Council approval will determine the suitability of colours etc

g. No part of any water tank structure must be higher than the roof water guttering of the dwelling/associated structure

h. The design of any water tank support structure (other than a modular style) must be in accordance with the requirements of a qualified practising structural engineer

i. The proposed installation of water tanks within medium density/dual occupancy development must be subject to specific attention within the terms of consideration of a development application.

A10.4.5 Tanks from which the collected water is to be used for human consumption must be fitted with the following:

a. an appropriate “first flush” mechanism to screen out contaminants which may be present on the roof top collection area

b. an appropriate filtration system to ensure that the water is fit for human consumption.

Comprehensive water cycle management plans

A10.4.6 Water cycle management is part of the overall concept of Ecologically Sustainable Development (ESD). Council requires ESD to be considered in all new development applications.

A10.4.7 Development proposals for the following should be designed and constructed in accordance with a comprehensive water cycle management plan.

a. incorporate 15 or more dwellings

b. accommodate 50 or more employees or clients

c. involve the use of more than one hectare of land for commercial, industrial or special use purposes.

A10.4.8 The Plan should detail the whole of the water cycle and identify where and how improved sustainability is achieved. Plans should address, but not be limited to:

a. Supply: importation of mains water, collection of rainwater, interception of groundwater

b. Use: drinking, bathing, washing, cleaning, toilet flushing, industrial processing and irrigation as applicable

c. Treatment: filters, ponds, chlorination, bio cycles, and heating as appropriate

d. Discharge: sewer, stormwater, evapotranspiration, groundwater.

A10.4.9 Plans should consider the public health issues potentially associated with use and reuse of water. Where sewer is available, the disposal of black water to sewer is preferred. Grey water may also be disposed to sewer or alternatively other methods, provided that the public health risk is considered.

A10.4.10 A comprehensive water cycle management plan may include the storage and use of grey water, specification of the type of landscaping to be used and the installation of water efficient appliances.

A10.5 - Stormwater inundation due to overland flow

Introduction

A10.5.1 This Section refers to local overland flow only. Where the catchment area is greater than 15,000m2 and/or affected by backwater, tidal inundation, potential for downstream conduit blockage causing elevated flood levels, catchment diversions or any other potential influence as determined by Council, a flood study must be prepared in accordance with **Appendix 9** Floodplain Risk Management in lieu of this document.

General

A10.5.2 Where overland flow enters a property, due consideration must be given to the effects of stormwater discharges upon persons and property with a view to ensuring there is no increase in hazard, or private and public losses, resulting from stormwater inundation. All development on flood prone land must be compatible with **Appendix 9** Floodplain Risk Management Development Control Plan. All local overland flow studies prepared for a specific development application should make reference to this document and note any specific requirements and/or recommendations which may be applicable to the site.

Design flood standard

A10.5.3 The design standard for consideration of hazard and property inundation is the 100-year Average Recurrence Interval (ARI) storm event. Council may require the adoption of a longer recurrence interval design storm such as the Probable Maximum Flood (PMF), in instances of high danger to persons or greater risk of significant damage.

Key design principles

Adverse impacts upon adjoining properties

A10.5.4 Any work on the property must not increase the quantity of flow through an adjoining property, concentrate or redirect flow or otherwise aggravate stormwater overland flow characteristics on adjoining properties.

Adverse effects upon proposed improvements

A10.5.5 All work must be compatible with the existing constraints of the site, including the overland flow of stormwater. Site improvements must be designed to ensure there will be no significant damage caused by stormwater runoff within the property.

Safety

A10.5.6 People, particularly children, must not be placed at risk of being swept away by overland flow. Any development must not modify the way in which overland flow is conveyed through a property in any way that makes it hazardous, or promote the increased use of a property (or part of a property) that has an existing stormwater inundation safety hazard.

Opportunity to redress existing problems

A10.5.7 All proposed property improvements must be compatible with Council's stormwater management plans for the area. In the absence of such a plan, the proposal should not reduce the opportunity to undertake any reasonable options to redress existing overland flow problems.

New development

A10.5.8 Due regard is to be given to the location and shape of proposed buildings on the land so as to remove obstruction to overland flow or to remove potential to damage structures as a consequence of flow or may cause hazard to occupants.

A10.5.9 Building over a flow path will not be permitted due to the potential for blockage. Areas under buildings are not to be included when calculating impacts on adjoining properties, post developed flood depths, velocities or the like.

A10.5.10 Proposed improvements must be designed to withstand damage due to scour, debris or buoyancy forces. Additional measures, including site drainage need to be considered with slab on ground construction.

A10.5.11 Floor levels of dwellings, including garages, should be at a level that will ensure that they are not subject to stormwater inundation or nuisance flooding. Generally, floor levels would need to be set at least 300mm above the level of adjacent ground for habitable areas to be suitably protected from sheet stormwater flows.

A10.5.12 Access must also be considered, especially with regard to occupants and vehicles leaving a site.

Additions & alterations to existing buildings

A10.5.13 Additions to existing buildings on properties affected by significant overland stormwater flow will be assessed using the same criteria as for new buildings. Further, Council may not approve an application that involves significant capital expenditure improving an existing building that does not meet current minimum standards with regard to overland stormwater management.

Vehicle parking areas

A10.5.14 The maximum depth of flow through designated car parking spaces or open carports is to be 150mm and a maximum velocity x depth product in the 100-year ARI storm event in accordance with the limits nominated in this Appendix.

Subdivisions on lots affected by overland flow

A10.5.15 Proposed land subdivisions of lots affected by overland flow will not be approved unless the applicant can demonstrate to Council that it is possible to provide a development on the newly created lot that realises the full floor space ratio (FSR) potential of the lot and provides suitable private open space while meeting the overland flow management criteria outlined in this document, or that information outlined in **Chapter 24/Appendix 9**, **Floodplain Risk Management**.

Flood hazard

A10.5.16 To satisfy restrictions pertaining to flood hazard, both depth x velocity (D.V.) limits and safe water depth limits should be observed. These limits must be strictly observed when designing flow paths on medium density residential property developments.

Depth x velocity as a measure of hazard

A10.5.17 The peak depth x velocity product of stormwater runoff through areas accessible to children must be limited to the stability values provided in **Table A10.5** below. Such areas include driveways, car parking spaces, pathways and courtyards.

Table A10.5 - Depth x velocity as a measure of hazard

Depth of Flow	Limiting Stability Value of Depth x Velocity for 100 year ARI storm event
0.05 or less	0.15
0.1	0.22
0.2	0.29
0.3	0.33
0.4	0.35
0.5	0.33
0.6	0.31
0.7	0.26
0.8	0.16

A10.5.18 Suitable fences or other appropriate measures will need to be used to restrict access by children to areas where the peak depth x velocity product exceeds the limiting stability value.

A10.5.19 The depth x velocity limit may be increased up to a maximum of 0.40 where the level of hazard is significantly reduced as overland flow progresses downstream.

Safety fencing

A10.5.20 Safety fencing necessary to restrict access to areas affected by hazardous flows must meet the minimum standards outlined in AS 1926.1-1993 Fencing for Swimming Pools.

A10.5.21 The fenced off area will not be considered as open space for the purposes of calculating minimum private open space requirements as outlined in the relevant planning codes. Where the property is to be a strata subdivision or community title subdivision, the fenced off area of land should be nominated as common property and access should only be available from common property.

Increased use of land

A10.5.22 Developments with a potential to promote the increased use of a property (or part of a property) burdened by hazardous flows, may be inappropriate for a site depending on issues such as the extent of stormwater affectation and the amount of usable private open space not affected by hazardous flows. This may result in some properties being considered unsuitable for residential development by virtue of them being burdened by hazardous stormwater inundation during major storm events.

Fences

A10.5.23 Boundary and internal fences should not obstruct the natural path of overland flow. Impermeable boundary fences where used must be constructed in a manner so as to provide a clearance of at least 50mm between the ground and the bottom of the fence. All fences located within an overland flow path must be permeable in nature to at least 300mm above the calculated top water level in order to allow water to freely pass through them. In most instances, only the lower portions of the fence need to be permeable.

A10.5.24 No permanent structures are to be built over Council drainage easements, watercourses or pipelines over which Council has an interest. This includes brick and other fences of masonry construction.

Other obstructions

(Sheds, Above Ground Pools, Fill Material, Garden Beds)

A10.5.25 Applications to undertake any property improvements on land that is subject to overland flow, must give due consideration to the manner in which the proposed work will affect the free passage of overland stormwater flow through the property. At no time will approval be given to a development that re-directs, concentrates or increases the quantity of stormwater runoff entering adjoining properties. Further, development is not to create or aggravate hazardous conditions on the subject property.

Property erosion

A10.5.26 Consideration is to be given to potential for property erosion due to scour by overland flows. The potential for scour is a function of the velocity of the water and the type of surface over which the water is passing. The design is to ensure there is no property scour for storm events up to the 100-year ARI storm.

Piping overland flows

A10.5.27 Proposals involving collecting and piping overland flow through the subject property or upgrading a section of Council's existing pipe-infrastructure, will generally not be acceptable for the following reasons:

a. this is a substantial potential for system blockage due to the limited number of inlets available.

b. the natural detention storage available within the catchment is reduced and flow velocities are increased.

c. due to greater rates of flow, it may cause localised increases in hazard at the system outlet and greater scour of natural creeks and/or disturbance of downstream river bed.

A10.6 - Standards enforcement

General submission information

Submission details

A10.6.1 A drainage concept plan will need to accompany any development application for two or more dwellings (or where there is a substantial increase in impervious areas), commercial developments and industrial developments. Detailed stormwater drainage plans and supporting calculations of the proposed property drainage system will need to be certified by the Principal Certifying Authority prior to a Construction Certificate being issued. Any overland flow and/or flooding issues will need to be addressed at the development application stage. The plans and calculations must be prepared by a suitably qualified engineer experienced in hydraulic design.

Stormwater concept plans

A10.6.2 A stormwater concept plan should show the proposed method of disposal of stormwater from the subject site, complying with the following requirements.

A10.6.3 If it is proposed to drain the site to Council's trunk drainage system, the location of the connection is to be shown on a concept plan together with a survey plan of the subject site.

A10.6.4 If it is proposed to drain the development to an onsite stormwater system, then the application is to be accompanied by a report and a detailed design in accordance with provisions in this Appendix on **Onsite Absorption Systems** and on **New Minor Structures** (including sheds and swimming pools). Other developments must be connected to the Council drainage system.

A10.6.5 If an interallotment drainage system is required then the proposed location of the interallotment drainage easement is to be shown on the plan.

A10.6.6 Where it is not clear that the site can be drained in a satisfactory manner to the point shown on the concept plan, the applicant may be required to submit a detailed drainage plan prior to completion of the assessment of the development application.

Compatibility with landscape plans

A10.6.7 The detailed drainage plan is to be compatible with the landscape plan approved in conjunction with the development approval. To achieve compatibility the following matters need to be resolved:

a. In this regard the stormwater concept design conflict between the location of drainage pipelines and tree roots is to be minimised. This may be achieved by locating pipelines outside of the drip line of all significant trees.

b. there should be no loose landscaping material (especially bark) within any overland flow path or onsite stormwater detention basin.

c. no trees should be planted within any overland flow path that will significantly reduce the storage capacity of the overland flow path in the long term.

A10.6.8 Stormwater concept design Engineer is to certify that the design has considered any submitted concept landscape plan.

Drainage easements

A10.6.9 Where it is proposed to discharge collected stormwater runoff to an interallotment drainage easement the applicant must submit to Council information from the Land Titles Office that indicates the subject property enjoys right to use the interallotment drainage system. This information must be received before Council will issue development consent for the proposed development. Hydraulic calculations must also be submitted to indicate the capacity of the pipeline and the ability to accept any additional flow. If the pipeline has insufficient capacity, it will need to be upgraded at the full cost of the applicant.

A10.6.10 Where an interallotment drainage easement must be created, a letter of agreement from all the affected property owner(s) must accompany the development application in order to demonstrate that a suitable easement can be obtained. The subsequent Construction Certificate will not be issued until a registered surveyor has prepared the easement documentation and it is lodged with the Land Title Office for registration.

Preparing an overland flow study

A10.6.11 Free surface hydraulic analysis of flow over properties in an urban environment is complex. Buildings and other obstructions can cause rapid variations in overland stormwater flows over a relatively short length. The direction of flow can change abruptly and the roughness of the surface can be highly variable. Engaging a suitably qualified engineer with experience in this field and an understanding of the complexities involved is essential. A poor choice of a consultant can lead to significant delays and frustration.

A10.6.12 Where overland flows affect the property, the applicant will generally be required to submit information in support of the development application to demonstrate that the proposal is consistent with the objectives outlined in this document. This information must include:

a. a survey, to AHD, of the area affected by overland stormwater flow through the site and adjoining properties where necessary, undertaken by a Registered Surveyor, showing all physical features that will affect the position and depth of floodwaters. This must extend sufficiently upstream and downstream to ensure relevant hydraulic controls are contained within the survey

b. a hydrologic analysis of the upstream catchment and a hydraulic analysis of the relevant section of overland flow path and underground piped drainage system must be undertaken to determine the relevant controls for the site. This analysis must take into account all potential overland flow to the low point including diversions into the system as a result of blockage

c. plans and calculations of the pre-developed and post-developed position, depth and velocity of the floodway through the site, and adjoining properties where relevant, prepared by a suitably experienced qualified civil engineer

d. hydrologic analysis for the 20 year ARI, 100-year ARI and the PMF event. These storm events will generally be used to assess the effects of the overland flow on the proposed development site and adjacent properties in the pre and post development states

e. where an underground pipe or trunk drainage network exists that caters for some or all of the upstream flow, a minimum blockage factor of 50% must be applied to determine flood levels for planning purposes.

A10.6.13 The required level of detail of the supporting information may vary considerably from site to site depending partly on how close the proposed development is to the criteria limits.

A10.6.14 The proposed location and shape of buildings and other structures will often have a large influence on overland flow characteristics. For this reason, the early involvement of a qualified and experienced hydraulic engineer is recommended.

Standard not met

Property drainage system

A10.6.15 Where Council standards as outlined in this DCP have not been met, the unsatisfactory components of the system must be removed and reconstructed. Council officers will not approve a variation from the approved plan unless the proposed amendments have been shown on a plan submitted to Council and a suitably qualified hydraulic engineer has certified that the amended system satisfies the requirements of Council as outlined in this standard and submits all calculations that lead to this assertion.

Overland flow

A10.6.16 Where Council officers and/or the applicant's consulting engineer does not consider the completed development to be fully consistent with the overland flow management strategy approved by Council, the consulting engineer will be required to prepare a further submission to Council. This submission must outline all necessary additional work required on the property to ensure the appropriate management of stormwater through and around the subject property in accordance with the standards outlined in this document. Included with the submission must be the plans and calculations used to confirm the work will satisfy Council's development standards. Following approval by Council, the work must be undertaken on the subject property prior to Council issuing any certificates or finalising the application.

Common law obligations

A10.6.17 The applicant has obligations at common law not to do any work on their property that will create nuisance on other properties. Any work that involves redirecting, concentrating or increasing the quantity of stormwater runoff over an adjoining property has the potential to create nuisance on that property. This responsibility remains with the property owner and is not transferred to Council or any other party with the approval of stormwater plans for the property or by the undertaking of inspections on the property. The property owners must satisfy themselves that the property improvements will not result in adverse drainage conditions on other properties.

Mandatory inspections

A10.6.18 For any drainage works resulting in a connection to a Council drainage easement or any infrastructure within the road, an inspection must be made by a Council Officer prior to any backfilling being completed. A minimum of 24 hours' notice is required when arranging inspections.

A10.7 - Title encumbrances

Easements to drain private property

Rights and obligations

A10.7.1 Common law obligations require that nothing be done on one property that would cause nuisance on another. Changing the natural pattern of stormwater runoff by increasing the amount of rate of runoff, or redirecting the runoff, has the potential to create this nuisance. Practically all property improvements will affect stormwater runoff to some extent and therefore provision must be made to ensure these site modifications do not adversely affect surrounding properties.

A10.7.2 Minimum standards regarding the treatment of stormwater runoff from property improvements are outlined elsewhere in this document.

A10.7.3 Where it is necessary to convey collected stormwater runoff from one lot through another, an easement must exist on the downstream lot that confers rights to the upstream lot to drain water through it.

A10.7.4 The standard easement used for this purpose is an easement for drainage of water. The rights and obligations associated with an easement of this type are outlined below.

A10.7.5 The body having the benefit of this easement may:

a. drain water from any natural source through each lot burdened, but only within the site of this easement

b. enter the lot burdened

c. take anything on to the lot burdened

d. use any existing line of pipes

e. carry out work, such as constructing, placing, repairing or maintaining pipes, channels, ditches and equipment

f. do anything else reasonably necessary for that purpose.

A10.7.6 In exercising those powers, the body having the benefit of this easement must:

a. ensure all work is done properly

b. cause as little inconvenience as is practicable to the owner and any occupier of the lot burdened

c. cause as little damage as is practicable to the lot burdened and any improvement on it

d. restore the lot burdened as nearly as is practicable to its former condition

e. make good any collateral damage.

A10.7.7 Interallotment drainage easements should be described as easement for drainage of water. Describing an easement in this way on the instrument has the same affect as inserting the words given above.

A10.7.8 This form of easement replaces the earlier easement to drain water.

A10.7.9 Interallotment drainage easements must benefit individual lots only and not list Council as a beneficiary.

Creation of private drainage easements

A10.7.10 Where an interallotment drainage easement must be created to facilitate a development, it is the responsibility of the applicant to negotiate with affected property owners to secure an easement.

A10.7.11 Property owners are under no legal obligation to burden their lots with an easement for interallotment drainage unless they have been required to do so by the Supreme Court exercising the powers available to them under Section 88K of the *Conveyancing Act 1919*, as amended or required to do so by way of a condition of development consent.

A10.7.12 Where an easement is required to allow suitable disposal of collected stormwater runoff from the property, a letter of agreement from the affected property owner(s) must support the development application to demonstrate to Council that a suitable easement can be obtained. The Construction Certificate cannot be issued until the easement has been prepared by a registered surveyor and has been lodged with the Land Titles Office for registration.

Using an existing private drainage easement

A10.7.13 Where it is possible to discharge collected runoff to an existing pipeline that passes through an adjoining lot or to lay a new pipe within an existing interallotment drainage easement, the applicant must submit to Council information from the Land Titles Office to indicate the subject property enjoys rights to use the interallotment drainage system. This information must be received before Council will issue a development consent on the lot.

Section 88K of the Conveyancing Act 1919 (NSW)

A10.7.14 Where a drainage easement is not able to be obtained through a negotiation process with adjoining owners it is possible to have the matter dealt with by arbitration in the Supreme Court through the *Conveyancing Act 1919 (NSW),* Section 88K.

A10.7.15 The rationale behind the introduction of the Section was expressed by the Attorney General in December 1995 where he pointed out that the introduction of Section 88K:

a. '…reflect(s) … a realisation that private developments may also be beneficial for the public, and that such development should not be unreasonable frustrated or held to ransom.'

A10.7.16 Essentially to be successful under Section 88K, it is necessary to establish the following:

a. the easement is reasonably necessary for the effective use or development of the land that will have the benefit of the easement

b. that the use of the land in accordance with the easement is not inconsistent with the public interest

c. that the owners of the land to be burdened by the easement and each person having an estate or interest in that land can be adequately compensated for any loss or any other disadvantage that will arise from the imposition of an easemen

d. that all reasonable attempts have been made by the applicant to obtain the easement otherwise than approaching the Court.

A10.7.17 In making an order under Section 88K, the Court is to:

a. specify in the order, the nature and terms of the easement, and such particulars referred to in Section 88K (1)(a)-(d) as are appropriate, and is to identify its site by reference to a plan that is, or is capable of being, registered or recorded as a Deposited Plan

b. provide in the order the payment by the applicant to specified persons of such compensation as the Court considers appropriate, unless the Court determines that compensation is not payable because of special circumstances of the case.

Council drainage easements

Creation of a Council drainage easement

A10.7.18 Council has rights under Section 186 of the *Local Government Act (1993*) to require the creation of an easement in its favour for the purpose of undertaking any of its functions as defined in the *Local Government Act*.

A10.7.19 Council drainage easements will be required over all pipes or channels that convey runoff from a public park, road reserve or other public owned land.

A10.7.20 Where a drainage easement is to be created as a condition of development consent, all costs associated with the creation of that easement must be borne by the applicant.

Locating pipes

A10.7.21 The exact location of a Council pipeline upon the lot should be confirmed by a registered surveyor. It should not be assumed that the pipe will be wholly or centrally located within the easement.

Provision for overland flow

Creating the restriction on use of land

A10.7.22 Any restriction must be created under Section 88B of the *Conveyancing Act 1919* and all associated costs must be borne by the applicant.

Land affected by the restriction

A10.7.23 The path and characteristics of the overland flow through the property must be determined by the applicant's consulting hydraulic engineer. The area of land affected by the restriction will be determined by Council having regard to existing flow paths, flow depths and velocities.

Releasing or modifying the restriction

A10.7.24 Application to release or modify the restriction must be made in writing. If such leave is granted all associated cost must be borne by the applicant.

Maintenance of onsite detention systems/absorption systems

When such a restriction would be imposed

A10.7.25 Public positive covenants must be created on the titles of all lots affected by an onsite detention system/absorption system to protect and ensure ongoing maintenance of the system.

Creating the positive covenant

A10.7.26 The positive covenant must be created under Section 88B of the *Conveyancing Act 1919*, and be binding on successive owners. Proof of registration of positive covenants will be required prior to issue of an Occupation Certificate under Section 109M Building Certificate of the *Environmental Planning & Assessment Act, 1979* and the release of any linen plan.

Rights & obligations

A10.7.27 Section 88F of the *Conveyancing Act 1919* confers the following powers to Council in respect of ensuring observance of the public positive covenant.

A10.7.28 The prescribed authority having the benefit of a public positive covenant must have the following powers:

a. For the purpose of ensuring observance of the covenant, the authority may, by its servants or agents, twice in every year at a reasonable time of the day and upon giving to the person against whom the covenant is enforceable not less than two days notice, enter the land and view the condition of the land and the state of construction or repair of any structure or work on the land, except to the extent that the authority and that person may otherwise agree.

b. Where the covenant requires the carrying out of development of any nature by that person, the authority may carry out development of that nature, on the failure of that person to comply with the covenant.

c. The authority may recover from that person, in a court of competent jurisdiction, any expense reasonably incurred by it in exercising its powers under paragraph (b) or (c).

Maintenance of pump-out systems

When such a covenant would be imposed

A10.7.29 In the event that a pump-out system has been approved by Council for disposal of stormwater and/or seepage from the property, a public positive covenant will need to be executed and registered against the title of the lot requiring ongoing maintenance and repair of the pump.

A10.8 - Definitions

Afflux: the rise in water level on the upstream side of a constriction in a stream or channel caused by that constriction.

***Australian Height Datum (AHD)*:** is a common national plan of level corresponding approximately to mean sea level.

Allowable Site Discharge: the volume of fluid per unit of time flowing along a pipe or channel as allowed by the most restrictive point within the site.

Annual Exceedance Probability (AEP): means the chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage. For example, the 1% AEP flood means that there is a 1% chance (1 in 100 chance) of a corresponding flood or larger occurring in any one year.

Annual Recurrence Interval (ARI): the long term average number of years between the occurrence of a flood as big as or larger than the selected event. For example, floods with a discharge as great as, or greater than, the 100 year ARI flood event will occur on average once every 100 years. ARI is another way of expressing the likelihood of occurrence of a flood event.

Aquatic Habitat: the natural home of marine or freshwater animals, plants or organism.

Backwater*:* the part of a stream where the water level is kept above normal due to some controlling influence downstream.

Biological Integrity: a natural, self-regulating ecosystem.

Bushland: land on which there is vegetation, which is either a remainder of the natural vegetation of the land or, if altered, is still representative of the structure and floristic of the natural vegetation.

Catchment*:* an area of land from which all runoff water flows to a low point (river, creek, harbour).

Conservation: use, management and protection of resources so that they are not degraded, depleted or wasted and are available on a sustainable basis for present and future generations.

Consolidated Stormwater Flows: where several sources of stormwater flow are funnelled into the same path and the volume and flow rate is increased.

Constructed Wetland: shallow water body containing aquatic plants installed to receive and treat contaminated stormwater runoff.

Consultation: this is a process where dialogue is established between residents, stakeholders and Council. This process involves advertisement, stakeholder identification, public participation opportunities, inclusion of outcomes and comments, feedback on the outcomes provided to stakeholders.

Council's Stormwater System: this refers to the system of pipes, channels and overland flow paths which drain water runoff (stormwater), not including those on private property. This is designed to discharge the water into receiving waters.

Detention Systems: are holding storages which temporarily store stormwater to control and reduce downstream flow rates. They are designed to retard stormwater during intense rainfall and to empty once the peak of the storm has passed.

Developer: any person or organisation who carry out development of land.

Development: includes the erection of any building, the subdivision of land and the carrying out of any work, and the use of the land or building or work thereon for a purpose which is different from the purpose for which the land or buildings or work was last being used.

Drainage Easements: common law rights attached to land whereby another parcel of land has the right to use part or all of the land for the purpose of draining water.

Floodways: the many controlled and uncontrolled routes taken by stormwater in the event of blockage of the underground system or its capacity being exceeded. Land inundated by the flood standard.

Footpath Converters: a structure that directs stormwater from drainage pipe systems into the kerb and gutter (also referred to as a Converter Pit).

Freeboard: the height between the water level and the underside of a structure or top of an embankment/channel wall.

Gross Pollutant Trap (GPT): is a structure which acts as the initial water pollution control measure typically located on the trunk drainage system. They act to intercept and retain coarse sediment, trash and debris.

Impervious: surfaces that do not allow water to penetrate.

Impervious Footprint: the outline of the impervious area (this includes driveways, tennis courts, swimming pools houses, etc.) on a land parcel.

Interallotment Drainage: common stormwater drainage system that serves one or more private properties.

Lagged: to cover a pipe or cylinder with insulated material to prevent loss of heat.

Non Perennial: intermittent running water throughout the year or years.

Nutrients: compounds required for growth by plants and other organisms present in the soil. Major plant nutrients are phosphorous and nitrogen.

Orifice: an opening or mouth into a cavity.

Perennial: continuous running water throughout the year, or many years, including natural springs.

Pervious: surfaces that allow water to soak in.

PMF: Probable Maximum Flood.

Permitted Site Discharge: the rate of discharge determined from the developed surface area of a property and a multiplying factor for the suburb.

Principal Certifying Authority: the Principal Certifying Authority, appointed under Section 109E of the *Environmental Planning & Assessment Amended Act, 1997*.

Property Drainage: the stormwater drainage pipe system that lies within private property and carries only runoff from private property.

Public Reserve: land zoned or reserved for public open space purposes.

Restriction as to User: a restrictive covenant on the transfer of land and is a binding promise to restrict the use of the land or some part of it in a specified manner, such as a Positive Covenant or Deed of Charge.

Riparian Land: means any land (and associated vegetation) that adjoins, directly influences, or is influenced by a watercourse, wetland, or water body. The spatial extent of this land should be sufficient to provide the following core riparian functions: bed and bank stability, water quality, aquatic and terrestrial habitat, riparian connectivity and protective buffer. The width of riparian land is largely determined by management objectives (and specific merits of a waterway) that supports the core riparian functions and management zones including core riparian zone and vegetated buffer.

Sedimentation Basins: permanent structures located to receive and treat all sediment-laden runoff.

Sediment Control Devices: devices to remove sediment from runoff before it leaves the site and include temporary measures such as straw bale barriers, sediment/geotextile fabric fences and semi-permanent measures such as sediment traps and sedimentation basins.

Sediment Traps: structures located on construction sites to receive contaminated runoff from disturbed areas and retain sediment.

Sewage: the waste water from homes, offices, shops, factories and other premises discharged to the sewer.

Sewage Management Facility: a human waste storage facility, or a waste treatment device intended to process sewage and includes a drain connected to such a facility or device.

Sewage System: the network of pipes, pumping stations and treatment plants used to collect, transport, treat and discharge sewage.

Standard Junction Pit: a structure used in the drainage system to assist with changes in pipe slope of alignment and includes a sealed lid at ground level for inspection.

Street or Secondary Drainage System: the smaller feeder pipe system along streets with pipes generally smaller that 600mm diameter.

Stormwater: rainwater which runs off land, frequently carrying various forms of pollution, such as rubbish, animal droppings and dissolved chemicals. This untreated water is carried in stormwater channels and discharged directly into creeks, rivers, the harbour and the ocean. Stormwater includes runoff from rainfall, springs, soakage and seepage.

Stormwater Detention: temporary storage of stormwater, with a controlled release into the drainage system.

Stormwater Drainage Systems include:

- roof and property drainage, including subsoil drainage, detention and retention systems
- street drainage, including both surface open channels and piped systems
- trunk drainage generally located on land reserved for drainage purposes or within easements
- receiving waters. They may be
    - natural depressions, watercourses, creeks and rivers
    - excavated earth and constructed open channels
    - underground systems with pipes, culverts, pits, inlets, outlets and energy dissipation
    - structures.

Stormwater Quality Control Structures: devices designed to improve the quality of the stormwater which passes through it.

Stormwater Retention: retaining and storing water for later use onsite.

Stormwater System: the system of pipes, overland flow paths, creeks, canals and other channels used to carry stormwater to bodies of water, such as rivers or oceans.

Subsoil Cut-off Drains: a perforated field drain laid below ground surface and covered with granular material to intercept ground water to protect structures.

Total Catchment Management: the coordinated and sustainable use of land, water, vegetation and other natural resources on a water catchment basis so as to balance resource utilisation and conservation.

Trunk Drainage: the stormwater drainage system that links property, interallotment and street drainage with the receiving waters and is greater than 600mm in diameter.

Unit Development: a building or group of buildings containing two or more units occupied or used or so designed, constructed or adapted as to be capable of being occupied or used as a separate domicile and includes a group dwelling but does not include a dwelling house.

Waste Water: excess or used water.

Watercourse: any natural or artificial waterway area, whether perennial or intermittent, used to convey flow including a creek, stream or river, any constructed waterway, channel or canal.

Water Re-use: the use of water more than once, following treatment of waste water to an appropriate quality standard and delivery to the point of use.

Wet Retention Systems: similar to detention systems, but retain some or all of the runoff from a site detaining sediment and improving the quality of runoff.

APPENDIX 11 - BUSHFIRE HAZARD

A11.1 - Development and bushfire

Integrated development

A11.1.1 Under the *Rural Fires Act* (RF Act), certain development is subject to a bushfire safety authority from the NSW Rural Fire Service (RFS). This is a type of integrated development under the *Environmental Planning and Assessment Act* (EP&A Act) and includes subdivision of bush fire prone land for residential or rural residential purposes, or development of bush fire prone land for a special fire protection purpose. A special fire protection purpose includes the following, but reference should be made to the RF Act.

a. a school

b. a child care centre

c. a hospital (including a hospital for the mentally ill or mentally disordered)

d. a hotel, motel or other tourist accommodation

e. a building wholly or principally used as a home or other establishment for mentally incapacitated persons

f. seniors housing within the meaning of *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004*

g. a group home within the meaning of *State Environmental Planning Policy No 9-Group Homes*

h. a retirement village.

A11.1.2 Development applications for integrated development are referred to the Rural Fire Service for authorisation under the RF Act.

Non-integrated development

A11.1.3 Development on bushfire prone land that is not integrated development is subject to Section 79BA of the EP&A Act. Council will generally consult with the Rural Fire Service for development applications under Section 79BA.

Development/design on bushfire prone land

A11.1.4 Council needs to be satisfied the specifications and requirements of the document entitled Planning for Bush Fire Protection, prepared by the NSW RFS in co-operation with the Department of Planning, are met. Alternatively, Council can be provided with a certificate by a person who is recognised by the NSW RFS as a qualified consultant in bush fire risk assessment stating that the development conforms to the relevant specifications and requirements.

A11.1.5 Any development application for which Council considers bushfire an issue, will require a Bushfire Risk Assessment Report (BFAR) by a suitably qualified bushfire consultant, addressing Planning for Bushfire Protection. This will address the bushfire risk including factors such as slope, vegetation, the region's weather history, access, water supply and building and site design/construction. Generally, building design can be enhanced to reduce the effects of bushfire attack by:

a. providing ember protection and building away from the flame zone

b. avoiding building on ridge tops and saddles

c. building on level ground where possible

d. building on cut in benches rather than elevated

e. avoiding raised floors, utilise concrete slabs (raft construction)

f. locating the habitable buildings near the property entrance for easier access/egress

g. using non-combustible fencing and barriers (e.g. courtyards, fenced off areas for gardens, BBQ areas and the like).

A11.2 - Documents/policy to refer to

A11.2.1 The RFS has a Single Dwelling Application Kit. For most simple single dwelling applications, a BFAR can be done by completing the kit.

A11.2.2 Planning for Bushfire Protection applies to all DAs on land that is classified as bushfire prone land.

A11.2.3 The BCA contains both performance requirements and deemed to satisfy provisions relating to the construction of buildings in bushfire prone areas. These apply to:

a. Class 1, 2, 3, 4 buildings (residential, including single, multi dwellings boarding houses, guest houses, hostels, residential in mixed use buildings, hostels

b. Development for a special fire protection purpose.

A11.2.4 The construction requirements of AS 3959 - 1999 Construction of Buildings in Bush Fire-prone Areas are accepted by Planning for Bushfire protection as the deemed to satisfy construction standard for buildings in bushfire prone areas.

A11.2.5 Planning for Bushfire Protection indicates the development types that should not be approved in bushfire prone areas as:

a. power generating works

b. sawmills

c. junk yards

d. liquid fuel depots

e. offensive and hazardous industries

f. chemical industries

g. service stations

h. ammunition storage/manufacture

i. fireworks manufacture/storage.

A11.2.6 The principal document to be referred to for guidance and information requirements on the development process is Planning for Bushfire Protection which can be found on the NSW RFS web site. Also on this website refer to:

a. NSW RFS BAL Risk Assessment Kit - New dwellings and alterations and additions to existing dwellings

b. NSW RFS User Guide for Complying Development

c. The Single Dwelling Application Kit

d. Checklist for Section 79BA Development Applications

e. Checklist for Section 100B Development Applications

f. Best Practice Guide

g. Vegetation Classification Chart

h. Illawarra Bush Fire Risk Management Plan.

The Illawarra Bush Fire Risk Management Plan identifies assets whether they're for instance, human settlement, rail corridors, commercial properties, flora/fauna which may be at risk and the recommended treatments to manage the risk.

A11.3 - Fire resistant native plants

Table A11.1 - Fire resistant native plants

Trees

BOTANICAL NAME	COMMON NAME
Acacia elata	Cedar Wattle
Acacia implexa	Hickory Wattle
Acacia melanoxylon	Blackwood
Acacia prominens	Gosford Wattle
Acmena smithii	Lilly Pilly
Alectryon subcinereus	Native Quince
Allocasuarina torulosa	Forest Oak
Allocasuarina verticillate	Drooping She-oak
Angophora costata	Sydney Red Gum
Backhousia myrtifolia	Grey Myrtle
Banksia integrifoia	Coast Banksia
Brachychiton acerifolius	Illawarra Flame Tree
Brachychiton populneus	Kurrajong
Cassine australis	Red Olive Berry
Casuarina cunninghamiana	River Oak
Casuarina glauca	Swamp Oak
Ceratopetalum apetalum	Coachwood
Ceratopetalum gummiferum	Christmas Bush
Clerodendrum tomentosum	Hairy Clerodendrum
Cupainopsis anacardioides	Tuckeroo Tree
Diospyros australis	Black Plum
Diplogottis cunninghamii	Native Tamarind
Doryphora sassafras	Sassafras
Eleaocarpus reticulatus	Blue Berry Ash
Eleaocarpus reticulatus ‘Prima Donna’	Pink Blue Berry Ash
Emmenosperma alphitonoides	Yellow Ash
Eucalyptus bauerana	Blue Box
Eucalyptus (Corymbia) gummifera	Red Bloodwood
Eucalyptus (Corymbia) maculata	Spotted Gum
Eucalyptus mannifera	Brittle Gum
Eucalyptus pauciflora	Snow Gum
Eucalyptus racemosa	Scribbly Gum
Ficus coranata	Sandpaper Fig
Ficus macrophylla	Moreton Bay Fig
Ficus obliqua	Small-leaf Fig
Ficus rubiginosa	Port Jackson Fig
Glochidion ferdinandi	Cheese Tree
Guioa semiglauca	Guioa
Hakea salicifolia	Willow-leaf Hakea
Hymenosporum flavum	Native Frangipani
Lophostemon confertus	Brush Box
Lophostemon confertus ‘Variegata’	Variegated Brush Box

BOTANICAL NAME	COMMON NAME
Melia azedarach var australisica	White Cedar
Pennantia cunninghamii	Brown Beech
Pittosporum revolutum	Yellow Pittosporum
Podocarpus elatus	Brown Pine
Polyscias muurayi	Pencil Cedar
Rapanea howittiana	Brush Muttonwood
Rapanea variabilis	Muttonwood
Schizomeria ovata	Crab Apple
Scolopia braunii	Flintwood
Slonea saustralis	Maiden's Bush
Stenocarpus salignus	Scrub Beefwood
Streblus brunonianus	Whalebone Tree
Syzygium australe	Brush Cherry
Syzygium luehmanii	Small-leaf Lilly Pilly
Syzygium oleosum	Blue Cherry
Toona ciliata	Red Cedar
Tristaniopsis collina	Mountain Water Gum
Tristaniopsis laurina	Water Gum
Waterhousia floribunda	Weeping Lilly Pilly

Shrubs

BOTANICAL NAME	COMMON NAME
Acacia sophorea	Coastal Wattle
Acacia terminalis	Sunshine Wattle
Atriplex cinerea	Grey Saltbush
Atriplex sembaccata	Berry Saltbush
Banksia aemula	Wallum Banksia
Banksia marginate	Silver Banksia
Banksia robur	Swamp Banksia
Banksia spinulosa	Hairpin Banksia
Breynia oblongifolia	Breynia
Bursia spinosa	Blackthorn
Callicoma serratifolia	Black Wattle
Correa alba	White Correa
Correa lawrenciana	Mountain Correa
Correa reflexa	Common Correa
Dodonaea triquetra	Common Hop-bush
Dodonaea viscosa spp. angustrifoia	Sticky Hop-bush
Dodonaea viscosa spp. angustissima	Narrow-leaf Hop-bush
Dodonaea viscosa spp. cuneata	Wedge-leaf Hop-bush
Doryanthes excelsa	Gymea Lily
Eremophila debilis (Myoporum debile)	Winter Apple
Eriostemon myoporoides	Native Daphne
Eupomatia laurina	Native Guava
Grevillea shiressii	Mullet Creek Grevillea
Grevillea ssp. (excluding G. robusta)	
Hakea dactyloides	Finger Hakea
Hakea tertifolia	Dagger Hakea
Hedycarya angustifolia	Native Mulberry

BOTANICAL NAME	COMMON NAME
Jacksonia scoparia	Dogwood
Lasiopetalum macrophyllum	Shrubby Rusty-petals
Melaleuca nodosa	Ball Honey-mrytle
Melaleuca seeberi	Sieber's Paperbark
Melaleuca styphelioides	Prickly Paperbark
Myoporum acuminatum	Mangrove Boobialla
Myoporum boninense	Boobialla
Pittosporum revolutum	Yellow Pittosporum
Pomaderris aspera	Hazel Pomaderris
Pomaderris ligustrina	Privet Pomaderris
Rhagodia condolleana	Coastal Saltbush
Sambucus australisicus	Native Elderberry
Senna artemisioides	Silver Cassia
Solanum aviculare	Kangaroo Apple
Solanum vescum	Gunyang
Synoum glandulosum	Bastard Rosewood

Ferns, rockery and tufted plants

BOTANICAL NAME	COMMON NAME
Alocasia macrorrhiza	Spoon Lily
Asplenium buibiferum	Mother Spleenwort
Asplenium australasicum	Birds Nest Fern
Blechnum cartilagineum	Gristle Fern
Bulbine bulbosa	Golden Lily
Crinum pedunculatam	Swamp Lily
Dianella caerulea	Blue Flax Lily
Dianella longifolia	Smooth Flax Lily
Dianella 'Silver Border', 'Gold Border'	Flax
Dichopogon fimbriatus	Nodding chocolate Lily
Einadia (Rhagodia) hastate	Saloop
Enchylaena tomentose	Ruby Saltbush
Lomandra longifolia	Spiny Mat-rush
Microlaena stipoides	Weeping Grass
Pelargonium australe	Austral Storksbill
Rhagodia candolleana	Coastal Saltbush
Scaevola ramosissima	Purple Fan-flower
Stylidium graminifolium	Grass-leaf Trigger Plant
Thelionema caespitosum	Tufted Blue Lily

Groundcovers

BOTANICAL NAME	COMMON NAME
Ajuga australis	Bugle
Carpobrotus glaucescens	Pig-face
Chrysocephalum(Helichrysum)apiculatum	Yellow Buttons
Cissus Antarctica	Water Vine
Cissus hypoglauca	Five-leaf Water Vine
Dichondra repens	Kidney Creeper
Einadia nutans	Saloop
Eustrephus latifolius	Wombat Berry
Hardenbergia voilaceae	Purple Twinning Pea
Hibbertia scandens	Climbing Guinea Flower
Isotoma fluviatilis	Swamp Isotome
Pollia crispate	Native Pollia
Kennedia prostrata	Running Postman
Scaevola aemula	Fairy Fan-flower
Scaevola albida	Pale Fan-flower
Scaevola calendulacea	Dune Fan-flower
Scaevola hookeri	Creeping Fan-flower
Selliera radicans	
Viola betonicifolia	Purple Violet
Viola hederacea	Native Viola

NOTE: Recommended fire retardant species, all of ornamental value and indigenous to the Sydney region, between Newcastle and Nowra.

NOTE: No plant species is completely fire-proof; this listing cannot be used to guarantee the safety of all dwellings within a fire prone area.

APPENDIX 12 - SOCIAL IMPACT ASSESSMENT

A12.1 - Roles and responsibilities

The development of a comprehensive and effective Social Impact Assessment (SIA) involves a range of stakeholders including Council, the applicant, community members and government agencies. A SIA should be undertaken by appropriately experienced personnel using social science methodologies and, where relevant, with public involvement. Council expects that the SIA preparer has a sound understanding of the applied social science methods required.

The roles and responsibilities of Council, the applicant, community members and government agencies in the assessment process are outlined below.

Council's role

A12.1.1 Council is the decision making body and determines whether a development application (DA) should receive approval or development consent. Council also has a responsibility to notify the community of a proposed development that will affect social change and, as part of the DA process, seek a response from the community on the social impact of the development.

A12.1.2 Therefore, Council staff should be satisfied that the social impacts of a proposed development have been addressed. Council will use its SIA policy and this toolkit to meet its commitment to the local community.

Applicant's role

A12.1.3 It is the applicant's role to prepare, when required, a SIA. If a social impact comment or statement is required, the applicant (including Council for its own projects) is responsible for undertaking the assessment and any associated costs.

A12.1.4 The applicant may prepare the assessment themselves or seek expert advice from a professional skilled individual/organisation in the preparation of the assessment.

A12.1.5 It is the applicant's responsibility to ensure that any possible negative impacts are identified, managed, and mitigated, and that any possible positive impacts are identified and enhanced. It is also the applicant's responsibility to consult with communities impacted by the development.

Community's role

A12.1.6 The community's role is to provide useful comment on the development application with regard to its social impact. The community may be involved through a range of community engagement techniques (refer to the SIA toolkit).

Government agencies' role

A12.1.7 Depending on the nature of the proposal, the applicant may seek input from various government agencies. State government agencies may be able to assist with specific advice or information regarding a proposal. A comprehensive list of potential Government contacts is provided in the SIA toolkit.

A12.2 - Details about social impact assessment

Types of social impact assessment

A12.2.1 A SIA should be carried out where the proposal/policy is likely to have:

a. A distinct (either positive or negative) effect on a particular social group

b. An identifiable effect on the social composition and/or character of the locality

c. An identifiable effect on the availability and use of existing community services, facilities and land, and/or may require the provision of such services, facilities and land.

A12.2.2 A SIA is required for any proposal/policy that has the potential to create significant impacts or will significantly alter demand, or create additional demand for social infrastructure.

Development Assessment
Council would require a formal SIA to be carried out for the following:

- Any mixed commercial/residential development
- Any development requiring preparation of a master or prescient plan
- Subdivisions
- Medium density developments
- Student accommodation, boarding houses and backpackers
- Commercial/retail/industrial development
- Tourist and visitor accommodation facilities, including caravan parks and camp grounds
- Motels and hotels
- Public car parks
- Educational establishment
- Recreational facilities
- Places of public worship
- Major infrastructure proposals
- Accommodation for seniors and people with a disability
- Community facilities (any new community facilities or removal of such facilities)
- Licensed premises and bottle shops
- Medical centres
- Sex service premises
- Correctional centres
- Other developments that Council considers may have a significant social impact e.g. preparation of building design guidelines

Please refer to the Social Impact Assessment Policy 2016 for social assessment for Corporate Policy or Land Use Policy.

A12.2.3 For a development requiring consideration of its social impact, the applicant will be required to provide either:

a. Level 1 SIA - Relates to projects that are unlikely to result in significant social impacts or is of a scale that does not warrant a comprehensive analysis. Generally, a social impact comment can form part of the Statement of Environmental Effects, or

b. Level 2 SIA - A comprehensive assessment typically required for large developments or development where significant social impacts are anticipated. For example, developments which have the potential to create significant impacts or changes the demands for social infrastructure.

Requirements of social impact assessment

A12.2.4 Development Assessment - **Table A12.1** outlines which developments should be considered for a Level 1 or Level 2 SIA.

This list is intended as a guide only and it should be noted that some applications whist fitting the description for a Level 1 assessment may require greater analysis due to their location, use or scale. Council also has the discretionary judgment to request a SIA for any application it believes that is likely to have significant social impact.

Corporate Policy and Land Use Policy – Please refer to the Social Impact Assessment Policy 2016.

Table A12.1 - Requirements of Social Impact Assessment

Development Category	Threshold	Level 1	Level 2
RESIDENTIAL DEVELOPMENTS			
New subdivisions	• All subdivisions resulting in 30 or more lots; *NB: Where a subdivision is to be developed in stages and the total development will exceed 30 lots a social impact assessment for the total development is required to be submitted with Stage 1 of the proposal.*		✓
Development	• Medium density residential developments containing 20 or more dwellings; • Any mixed development commercial/residential development; • Any development requiring the preparation of a master or precinct plan.	✓	
Accommodation for seniors or people with a disability	All new accommodation for the aged or people with a disability including: • Residential care facilities; • Groups homes; • Hostels and nursing homes; • Self-contained units of 20 or more dwellings. *NB: In regard to accommodation for seniors or people with a disability, specific reference should be made to the requirements of State Environmental Planning Policy Housing for Seniors or People with a Disability*		✓
Student accommodation, boarding houses and backpackers	• Student accommodation for 20 units or more; • Boarding houses containing 20 or more beds; including removal of existing boarding houses; • New backpacker accommodation facilities or alterations and additions to an existing backpacker accommodation facility involving the provision of additional beds or bedrooms.	✓	
INDUSTRIAL, RETAIL AND COMMERCIAL DEVELOPMENTS			
Industrial development	All industrial with a gross floor area greater than 500sqm. This includes, but is not limited to: • All hazardous industries • All extractive industries and mines • All livestock processing industries • All liquid fuel depots • Any new or major alterations to sewage treatment plants.	✓	
Commercial and/or retail development	• All commercial and/or retail development that have a gross floor area greater than 500sqm. • Take away food and drink premises within 200m of a school or other community use or if deemed by planner to have an adverse health impact.	✓	
Community facilities	• Any new community facilities or removal of such facilities. • Child care facilities		✓
Tourist accommodation	• All tourist and visitor accommodation facilities involving 20 or more bedrooms; including motels, hotels and caravan parks.	✓	

Licensed premises and bottle shops	• Any new licensed premises / bottle shop or proposed extension to the hours of operation of an existing licensed premises / bottle shop; • Business Premises primarily for the purposes of betting or gambling. • Any new nightclub / late night venue or any change in the proposed hours of operation to an existing nightclub / late night venue. • Any new registered club or any major alteration or addition to an existing registered club.		✓
Public car parks	• Public car parks and underground car parks associated with commercial office or retail shopping centre developments.	✓	
EDUCATION, HEALTH AND RECREATION			
Educational establishment	• All educational establishments catering for 500 or more students.	✓	
Medical centres - drug rehabilitation services	• Any new medical centre proposal involving any specialist drug rehabilitation / treatment or any proposed extension in hours of operation for any medical centre providing specialist drug rehabilitation services.		✓
Recreation facilities	All new and removal of major recreation facilities including: • all new indoor recreational facilities involving a gross floor area of 4,000m^2 or more • outdoor recreation facilities involving golf resort, skate boarding, go-karting, mini-golf centre, rifle range.	✓	
OTHER			
Places of public worship	• All places of public worship.	✓	
Sex services premises	• All sex services premises.		✓
Correctional Centre	• All new correctional centres or any alteration or addition to a correctional centre.		✓
Major infrastructure proposals	• All major infrastructure proposals. For example roads, rail or transport corridors.	✓	
Development involving a number of uses	• All developments that propose a range of different uses concurrently.		✓
Other developments	• Other development that Council considers may have a significant social impact. Level of assessment will be determined based on development proposed.	✓	✓

Undertaking a Social Impact Assessment

12.2.6 For all SIA's, whether a Level 1 or 2, the applicant must provide the following information in the assessment:

a. A description of the proposal (including what is proposed, site location, site history and context, existing community issues)

b. An analysis of the current and expected community profile (including current and projected population trends, literature reviews, relevant case studies, previous findings etc)

c. Identification, scale, intensity, duration and measurement of likely social impacts (both positive and negative)

d. Demonstration as to how negative social impacts have been mitigated or the design of the development has been modified to reflect the findings of the social impact assessment

e. The methodologies employed by the study to measure impacts including results from community consultation

f. Please refer to the toolkit available in this Appendix for further details and steps on how to successfully develop a social impact comment or statement.

A12.3 - Social Impact Assessment toolkit

Introduction to toolkit

A toolkit has also been included in this Appendix to assist applicants and consultants in the preparation of SIAs.

A12.3.1 The toolkit covers the following:

a. Introduction - principles and definitions

b. Steps of a Social Impact Assessment (**Figure A12.1**)

c. How to complete a Level 1 and Level 2 Social Impact Assessment (**Table A12.2, Figure A12.1 & A12.2**)

d. How to assess a Social Impact Assessment.

e. Possible positive and negative impacts to consider (**Table A12.3**)

f. Social impact data sources (**Table A12.4**)

g. Future reading and references

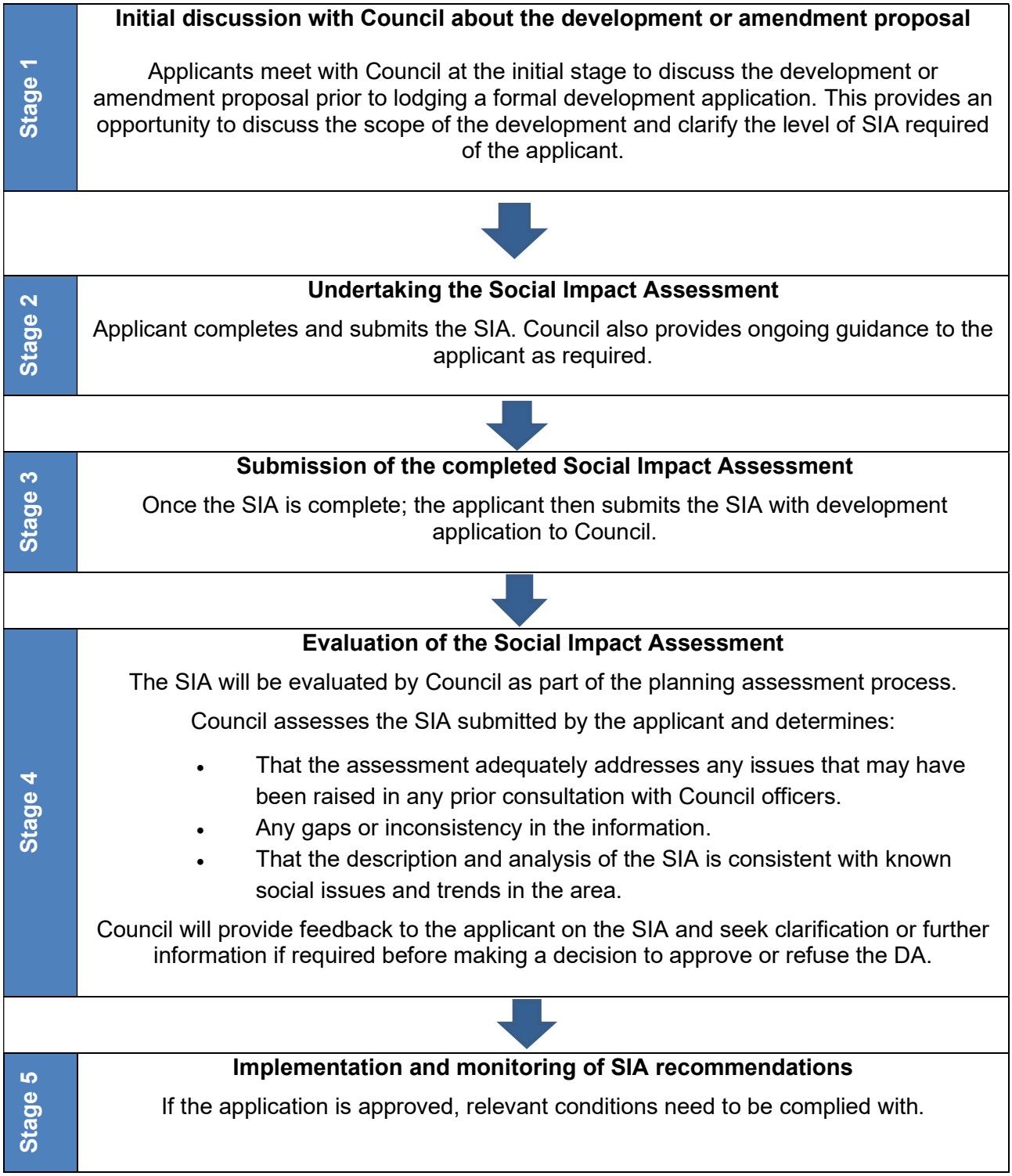
A12.3.2 The consideration of social impacts involves many methods of inquiry and data sources. Therefore, the design of each Social Impact Assessment should respond to the circumstances at hand. For some projects this may involve a desktop assessment, for others site visits, analysis of demographic data, interviews with land owners, neighbours and tenants as well as wider community consultation. Council's priority is with a sound, evidence-based approach to each SIA process.

A12.3.3 The following templates will provide guidance on how to complete high quality Social Impact Assessments that meet Council's objectives. These guidelines have been produced as a guide only and Council supports innovation in the way the applicant undertakes a Social Impact Assessment.

Steps of a social impact assessment

A12.3.4 The process for conducting a SIA within a DA consists of five key stages, as per **Figure A12.1**.

Figure A12.1 - Steps of a social impact assessment



Level 1 Social Impact Assessment

A12.3.5 A Level 1 SIA is a basic assessment and need only form part of the Statement of Environmental Effects. Whist, the assessment doesn't need to be long; it must contain sufficient and relevant information to identify the impacts of the proposed development. It should also include if and how occupiers of a proposed development may be impacted by existing land use in vicinity. Consideration must also be given to mitigation strategies and measures to address potential negative social impacts.

A12.3.6 When preparing a Level 1 SIA, the matters in **Table A12.2** should be considered and addressed by the applicant.

Table A12.2 - Level 1 Social Impact Assessment

Considerations	Trigger Questions
Description of the development	• What are the existing social conditions of the area around the development? • How does the development impact on the local area? • How does the development respond to the social context and needs of the local community in terms of lifestyle and affordability? • What is the extent of the impact?
Social impacts of the development	How does the development identify or address the following social impact issues? • Population change including numbers and characteristics • Mobility and access • Provision of facilities and services including recreational; cultural and social • Community structure and identity • Cultural, economic and community health and wellbeing • Linkages between the development and the existing community • Needs of particular target groups such as people from culturally and linguistically diverse backgrounds, older people, people with a disability, Aboriginal people, children and families. • Perception of risk and fears
Community consultation	Community consultation should be carried out with those that are directly affected by the development such as neighbours and key stakeholders. • Who was consulted? • What type of community consultation was undertaken? • What were their concerns? • How will the concerns raised in consultation be addressed?
Management of impacts	The applicant needs to identify the level of impact and actions that may maximise positive impacts and reduce or mitigate negative impacts. If the impact of a specific aspect is not significant, this should be stated with reasons or evidence. • What are the positive and negatives impacts of the development? • How will the positive impacts be maximised? • How will the negative impacts be managed and monitored (in the interest of both users of the development and the broader community)?

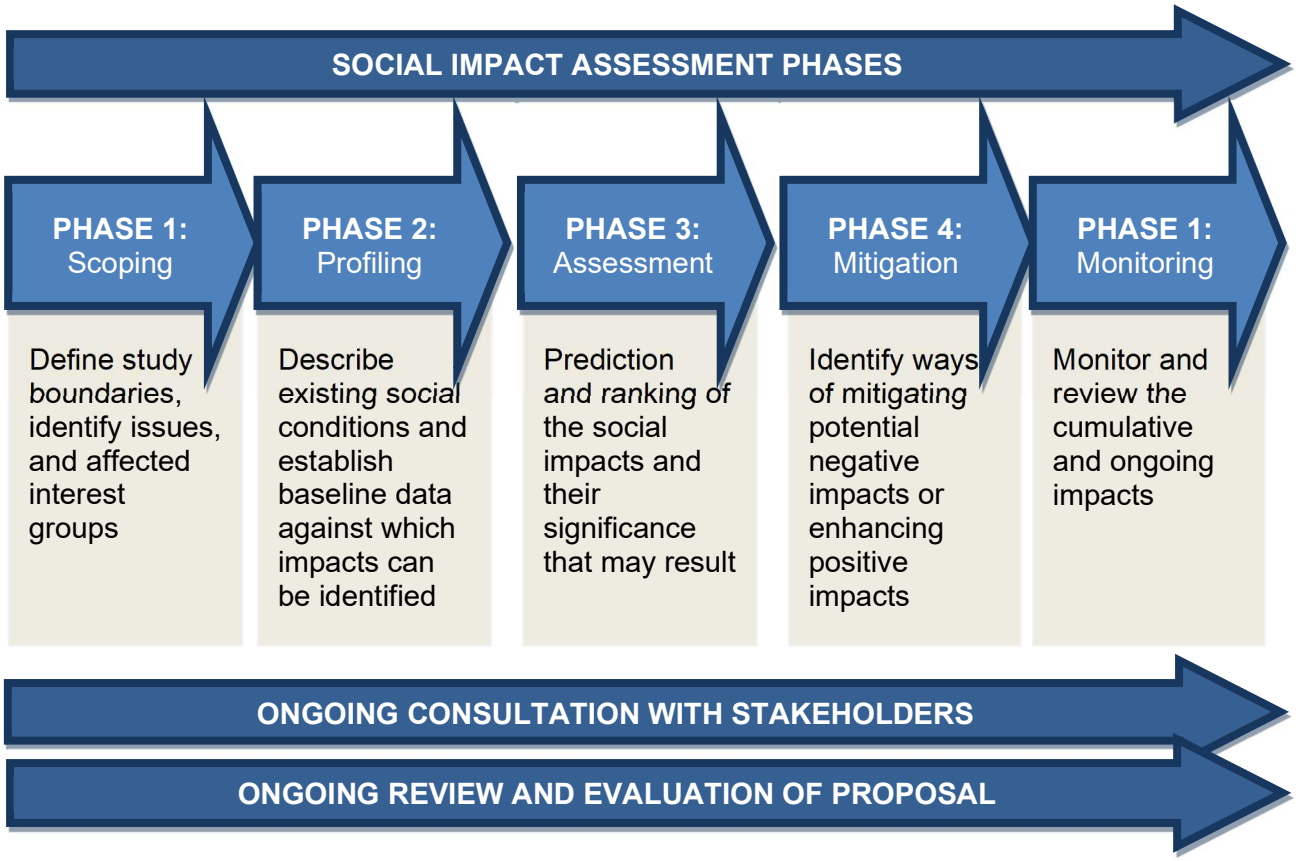
Level 2 Social Impact Assessment

A12.3.7 A Level 2 SIA provides a more in-depth analysis of actual and potential social impacts. The assessment must also demonstrate that effective community engagement has been undertaken with those individuals and groups who are affected.

A12.3.8 The following template contains information on how to complete a Level 2 SIA and what is expected at each phase of the process. It is highly recommended that a Level 2 SIA be completed by a suitably qualified or experience practitioner.

A12.3.9 Generally, there are five phases involved in carrying out a Level 2 Social Impact Assessment. These 5 steps of scoping, profiling, assessment, mitigation and monitoring are illustrated in **Figure A12.2** below.

Figure A12.2 - Level 2 social impact assessment phases



Phase 1 - Scoping

A12.3.10 Phase 1 involves providing information about the proposed development and the initial consideration of possible social issues. This includes:

a. the study boundaries; including physical, social and economic areas

b. the surrounding land uses

c. the stakeholders affected by the proposed development and the way in which these stakeholders have been involved in community consultation

d. the likely scale and timing of impacts (positive and negative) of the proposed development.

A12.3.11 At this stage of the process, Council would expect the developer to conduct some form of community engagement with key individuals and groups in the identification of issues. Key stakeholders may include:

a. those who live nearby

b. those who will hear, smell or see the development or its effects

c. those who are forced to relocate

d. those who have an interest in the new project

e. those who may normally use the land where the project is be located.

A12.3.12 Consultation should be structured in such a way to ensure a fair presentation of all issues by the proponent and the community. This ensures a full disclosure of issues at the outset. Public participation will also ensure thorough consideration of all issues and indicate the opposition of the proposal.

A12.3.13 It is essential that the information is presented in a format that is understood by the affected community. In some cases, it may be necessary for information to be translated into other languages or involve specialists or consultants to explain technical issues in plain English.

NOTE: Helpful resources for scoping:

- **Shellharbour's current Community Strategic Plan**
- **Shellharbour's current Delivery Program and Operational Plan**
- **Shellharbour's Community Profile, Atlas and Forecast online tools**
- **Shellharbour's Remplan online tool**
- **Shellharbour's Connect Website**
- **Shellharbour City Council Community Engagement Policy**
- **Shellharbour Local Environmental Plans**

Phase 2 - Profiling

A12.3.14 This phase of the assessment should essentially provide a description of the social characteristics of the affected community and should also provide a preliminary investigation of possible issues.

A12.3.15 It is expected that the information gained for the community profile will have a broad research scope, utilising a range of statistical data as well as descriptions of community groups and networks.

A12.3.16 A social profile should be representative of the scale and nature of the proposal and should include at least the following information:

a. size of population – current and future

b. likely population growth, with and without the development

c. age structure

d. number of households and household types

e. labour force statistics

f. economic assessment of the area

g. employment status

h. crime and safety statistics

i. education levels

j. religious, ethnic, identity and amenity

k. community character, identity and amenity

l. accommodation and housing

m. availability of transport and access to health and community services and facilities

n. connectivity and accessibility including physical barriers (e.g. major roads, rail) and pedestrian and bicycle connectivity.

A12.3.17 The profile should also include an audit of current health, recreation and community services and facilities available in the area as well as a review of Council and other Government policies to demonstrate how the SIA is consistent with relevant strategies directions, planning principles and operational policies.

NOTE: Please refer to data sources in Table A12.4 at the end of this Appendix for a comprehensive list of sources.

Other resources include:

- Shellharbour's Community Profile, Atlas and Forecast online tools
- Shellharbour's Remplan online tool
- Shellharbour's Connect Website
- Shellharbour City Council End of Term Report 2011-2016
- Chapter 17 of this DCP – Crime Prevention Through Environmental Design
- Shellharbour City Council Disability Strategic Plan
- Australian Bureau of Statistics
- NSW Bureau of Crime Statistics and Research
- Human Services - Family and Community Services
- Department of Education and Training
- Housing NSW
- Transport Data Centre
- NSW Health.

Phase 3 - Assessment

A12.3.18 This phase involves a detailed examination of the identified impacts (both positive and negative) including the intensity, duration and measurement of these issues. The impacts that have been identified through Phase 1 and 2, can now be categorised, evaluated and prioritised.

A12.3.19 The assessment phase needs to address:

a. Who will be affected?

b. How and if occupiers of a proposed development may be impacted by existing land use in vicinity?

c. How will they be affected?

d. How long will the impacts last?

e. What level of social change will occur as a result of the impact?

A12.3.20 These should be addressed on the basis of the future environment with and without the development. Some examples of likely impacts could include:

a. changes in demand for community facilities and services

b. accessibility to social and community facilities

c. real and perceived safety of residents within the identified area

d. increase in traffic and noise

e. change in household choice, shopping, recreational facilities and services

f. change to lives of specific groups e.g. Aboriginal, young people, older people, people with a disability

g. employment opportunities

h. impact on the wider community and economy

i. changes to community values, traditions, lifestyles/culture

j. changes in affordability of goods and services e.g. housing.

A12.3.21 Once predicted, impacts should be assessed on their level of importance. In order to fully understand the comparative impact of the proposal it is essential that the proposal be examined in relation to available alternatives. In this regard the assessment must include an examination and comparison of the alternatives to the proposal and their impact on the social environment. This may involve assigning a weighting or ranking of the impacts, a cost benefit analysis or another form of comparison. Reference can be made to the potential positive and negative impacts in **Table A12.3** below.

Phase 4 - Mitigation

A12.3.22 The mitigation phase requires a demonstration as to how negative social impacts have been mitigated or the design of the development has been modified to reflect the findings of the SIA. Mitigation measures should aim to minimise the impact of the proposal, should pay specific attention to the particular characteristics of the community which will be affected as well as be clear and achievable.

A12.3.23 Examples of mitigation strategies may include:

a. The installation of noise barriers

b. Re-design or design changes of the development

c. Increased provision of community infrastructure and facilities where increased need is required due to the development

d. Where property values are affected or relocation is necessary

e. Employment of community workers

f. Improved access to services and facilities.

Phase 5 - Monitoring

A12.3.24 Where necessary, this phase should involve monitoring and reviewing the cumulative social impacts of the development. As a result, if the development is approved by Council, there may be a number of conditions attached to the DA.

A12.4 - How to assess a social impact assessment

A12.4.1 The following questions provide a simple checklist for Council and applicants in the assessment process of a SIA.

a. Has the applicant considered all relevant social impacts?

b. Is the assessment balanced and fair?

c. Is the data sufficient and reliable to demonstrate the benefits and justify the significance of the impacts?

d. Is the proposal reasonable in the context of its overall net benefits to the community?

e. Can the impacts of the development be adequately minimised?

f. Does it adequately address community concerns?

g. Will the development need ongoing monitoring and consent conditions to enable to adequately address the social impacts?

Table A12.3 - Potential positive and negative impacts to consider in an SIA

Development Category	Threshold	Possible Impacts (negative or positive)
RESIDENTIAL DEVELOPMENTS		
New subdivisions	• Subdivisions resulting in 30 or more lots	• Community identity and character of space • Community cohesion - harnesses cultural and artistic assets of the community • Provision of affordable space • Housing diversity and opportunities for affordable housing • Access to and availability of public transport and public transport stops • Demand on local business • Public domain • Design to increase access to services and use of parks, open spaces and public spaces • Demographic - Composition and size • Infrastructure – Accessible footpaths, connectivity between the facility and surrounding area, secure cycle storage facilities • Economic and business activity • Food security - Access to healthy food choices and community spaces for growing of food • Health – Access to walking trails, cycleways. Design to create less car dependent neighbourhoods and access to and availability of reliable and regular public transport • Availability of affordable and accessible community space and facilities - colocation and integration of mixed use facilities, impact on existing community facilities • Crime and safety – Anti-social behaviour, fear of crime
Development	• Medium density residential developments containing 20 or more dwellings • Any mixed development commercial/residential development; • Any development requiring the preparation of a master or precinct plan	
Accommodation for seniors and people with a disability.	All new accommodation for seniors and people with a disability including: • Residential care facilities • Groups homes • Hostels • Nursing homes • Self-contained units of 20 or more dwellings	• Appropriateness of design for older people and people with a disability (accessibility, provision of universal/adaptable design, safe pedestrian crossings, pick-up drop off zones, ample seating, clear signage) • Access to and availability of public transport • Demand on local business • Community Services - Access to and demand on social and medical services • Infrastructure – Accessible footpaths, connectivity between the facility and surrounding area • Location - Co-located with existing community facilities and shops • Employment and training opportunities • Community identity and character of space

Development Category	Threshold	Possible Impacts (negative or positive)
Student accommodation, boarding houses and backpackers	• Student accommodation for 20 units or more • New backpacker accommodation facilities or alterations and additions to an existing backpacker accommodation facility involving the provision of additional beds or bedrooms • Boarding houses containing 20 or more beds; including removal of existing boarding houses	• Housing - Affordable housing availability • Crime and safety – Anti-social behaviour, alcohol fuelled anti- social behaviour e.g. noise, fights, vandalism • Perception of safety particularly among elderly, and families with children • Fear and perception of risk – Anti-social behaviour, transient population • Change to cultural profile and social cohesion • Services and facilities - Availability and accessibility of suitable services e.g. tourist information, support services including tenancy support, medical and social support services and communication utilities • Demand on local services and businesses • Community identity and character • Access to and availability of public transport and active transport opportunities • Access to employment • Health - Services to support adoption of healthy lifestyle such as food preparation facilities, laundry
INDUSTRIAL DEVELOPMENTS		
Industrial development	All industrial with a gross floor area greater than 500sqm. This includes, but is not limited to: • All hazardous industries • All extractive industries and mines • All livestock processing industries • All liquid fuel depots • Any new or major alterations to sewage treatment plants	• Health – Exposure to noise, toxic fumes • Safety – Large transport vehicles located in walkable urban areas • Fear and perception of risk e.g. large transport vehicles, explosions, emergency evacuations • Amenity and aesthetics • Traffic – Flow, parking, truck movements and impact on residents and local facilities such as parks, schools • Services and housing availability - Housing, social support and health services for workers and their families • Influx of workers (and related cumulative impacts) - Social cohesion between workers and non-workers and community participation • Employment and training – The vulnerability to changes in the fortunes of the industry (and impacts on economic activity in the locality). Availability of a diverse workforce. Training opportunities, especially for young people • Community and spatial identity – Linkages to existing town centre and use of existing town businesses, etc

RETAIL AND COMMERCIAL DEVELOPMENTS		
Commercial and/or retail development	All commercial and/or retail development that have a gross floor area greater than 500sqm. Take away food and drink premises within 200m of a school or other community use or if deemed by planner to have an adverse health impact.	• Crime and safety - Anti social behaviour, fear of crime, opening hours • Health - Noise from venue and from patrons, toilet facilities, unhealthy food choices • Young people - School attendance and truancy (heightened by proximity to schools, community facilities, shops, open space, etc) • Amenity – Impact on existing facilities (potential for conflict between crowds, increase in patronage, co-location with shared public spaces) • Community identity and social cohesion – Potential for conflict • Public domain – Incorporation of community meeting spaces, opportunities to participate in community life (appropriate seating, bubblers, built open space, etc.) • Demand or impacts on viability of existing local business (including interaction with main street businesses) • Access to and availability of public transport • Community accessibility - Affordability of centre services to existing community • Infrastructure – Accessible footpaths, connectivity between the facility and surrounding area, secure cycle storage facilities • Retail mix complements community consultation as to need for new services • Employment opportunities • Target groups – Design appropriate for children and families, young people, older people, people with disabilities, and people from culturally and linguistically diverse backgrounds (e.g. universal signage, parents facilities, etc)
Community facilities	Any new community facilities or removal of such centre	• Services and facilities – Accessibility and affordability of facilities. (e.g. facilities should accommodate tiered /low cost pricing structures to ensure access to facilities by all in the community). Also, opportunity for the facility to be used for outreach social and health services • Crime and safety - Anti social behaviour due to people hanging around e.g. noise, fights, vandalism • Perception of safety – Particularly facilities catering to the needs of young people e.g. skate park • Negative health impacts - Noise • Positive health impacts– Community access to recreational and leisure activities • Infrastructure – Accessible footpaths, connectivity between the facility and surrounding area, cycle storage facilities • Access to and availability of reliable and regular public transport and active transport hub

		• Location – Connectivity, accessible by walking or cycling • Target groups - Culturally appropriate and user friendly to a wide range of community groups • Social cohesion – Opportunities for people to meet, participate in community life. conflicts in use of space • Community identify – Sense of place, meets objectives for neighbourhoods • Opportunities to participate in cultural life
Tourist accommodation	All tourist and visitor accommodation facilities involving 20 or more bedrooms; including motels, hotels and caravan parks	• Availability of suitable services e.g. tourist information such as information in accessing the City.– Demand on local services and businesses • Health – Noise and pollution from traffic and ongoing exposure to light, access to healthy food outlets • Community identity and character • Access to and availability of public transport, secure bicycle storage facilities • Employment and training opportunities • Services - Access to public communication services such as phones, internet, medical and social services • Housing of employees • Influx and outflux of visitors • Appropriateness of design for people with culturally and linguistically diverse backgrounds, e.g. bi-lingual signs and information services, access to culturally appropriate foods
Licensed premises and bottle shops	• Any new licensed premises / bottle shop or proposed extension to the hours of operation of an existing licensed premises / bottle shop. • Business premises primarily for the purposes of betting or gambling. • Any new nightclub / late night venue or any change in the proposed hours of operation to an existing	• Existing location and density of other licensed premises in area • Crime and safety – Alcohol induced anti-social behaviour such as drunkenness, assault, vandalism and malicious damage • Socio-economic impact – Loss of income, family stability (analysis of local demographics required) • Community services – Availability of local health and welfare services • Access to and availability of public transport availability outside business operating hours • Amenity impacts (exposure) - Proximity to schools, childcare centres, sporting grounds, playgrounds and recreational facilities • Amenity impacts (increased risk) – Proximity to banking facilities and licensed premises • Pedestrian and vehicle safety issues at closing, and related management strategies • Health - Noise and light from facility, unhealthy behaviour • Community cohesion – Potential for conflict/tensions • Demand on local business • Employment opportunities • Fear and perception of risk

	nightclub / late night venue. • Any new registered club or any major alteration or addition to an existing registered club.	• Affordability- Facilities should accommodate tiered /low cost pricing structures to ensure access to facilities by all in the community
Public car parks	Public car parks and underground car parks associated with commercial office or retail shopping centre developments	• Health – Exposure to noise, light and carbon dioxide emissions • Amenity and visual impact • Accessibility of services – improving access to services and business centres • Public Space - Removal of street and public domain activity • Infrastructure – Accessible footpaths, connectivity between car park and surrounding area, and secure bicycle storage facilities • Access by local community - Affordability and, tiered pricing structures • Crime and safety - Theft of cars and theft from cars especially in underground car parks, safety of property adjoining car parks. Vehicle/pedestrian conflict • Community concern regarding safety – Large transport vehicles, explosions, emergency evacuations • Amenity and aesthetics • Employment opportunities • Fear and perception of risk • Traffic – Flow/parking, vehicle movements and impact on residents local facilities such as parks, schools
EDUCATION, HEALTH AND RECREATION		
Educational establishment	All educational establishments catering for 500 or more students	• Road safety for pedestrians, especially considering children and young people • Perceptions of safety – Anti-social behaviour from students eg graffiti, vandalism • Economic and business - Demand on local services/shops • Access to and availability of public transport, and opportunities to walk and cycle • Demographic composition and size of local community. • Infrastructure – Accessible footpaths, connectivity between the facility and surrounding area, provision of bicycle storage facilities • Employment opportunities

		• Services and facilities – Appropriate on-campus social support services provided (e.g. childcare facilities, services for international students). Also, connectivity to available services • Social cohesion – Availability of public domain, recreational facilities and activities, participation in community life
Medical centres	Any new medical centre proposal involving any specialist drug rehabilitation / treatment or any proposed extension in hours of operation for any medical centre providing specialist drug rehabilitation services	• Perceptions of safety - Drug induced violence, drug trafficking, anti-social behaviour • Fear and perception of risk • Access to and availability of public transport, accessibility through alternative transport means • Community services - Access to appropriate social support services such as counselling, access to relevant information about community and health services • Economic disadvantage – Reduction in property values • Accessibility to employment and training
Recreation facilities	All new major recreation facilities including • All new indoor recreational facilities involving a gross floor area of 4,000m^2 or more • Outdoor recreation facilities involving golf resort, skate boarding, go-karting, mini-golf centre, rifle range	• Crime and safety - Anti social behaviour due to people hanging around e.g. noise, fights, vandalism. Perception of safety - Anti social behaviour from young people using facility • Affordability- Facilities should accommodate tiered /low cost pricing structures to ensure access to facilities by all in the community • Facilities available for community use such as training by local clubs • Health – Exposure to noise and light from facility • Access to and availability of public transport • Traffic – Congestion and parking particularly during major events • Demand on local business • Infrastructure – Accessible footpaths, connectivity between the facility and surrounding area, secure cycle storage facilities • Employment opportunities • Participation in community life
OTHER		
Places of public worship	All places of public worship	• Crime and safety – Long periods where building is empty which increases the risk of, vandalism and malicious damage • Social impacts of traffic, particularly during peak activity periods • Health - Noise and light from facility • Community cohesion and identity – Tolerance of diversity • Demographic - Composition and size, change to cultural profile • Access to and availability of public transport, secure cycle storage facilities • Community services and facilities - Access to community facilities for local residents

Sex services premises	All sex services premises	• Perception of safety e.g. alcohol and drug fuelled problems from clients and customers. • Health - Noise from late night revellers, health services • Community cohesion and character • Fear and perception of risk • Housing - Suitable low cost accommodation facilities for workers • Community facilities - Access to medical and social support services for women • Cumulative impacts – Existing location and density of like premises in area • Amenity impacts (exposure) - Proximity to schools, childcare centres, sporting grounds, playgrounds, counselling centres, etc.
Correctional centre	All new correctional centres or any alteration or addition to a correctional centre	• Perceptions of safety e.g. break out • Amenity and aesthetics, community identity • Access to and availability of public transport • Housing - Access and availability of low cost accommodation services for families • Social cohesion – Potential conflict or tensions. Also, consideration for community links and connection through education, employment, cultural, leisure programs • Access to welfare and support services, particularly rehabilitation, mental health and drug and alcohol services • Rights – Economic disadvantage through reduction in property values • Fear of risk
Major infrastructure proposals	New air transport facilities or major alterations and additions to an existing Air Transport Facility	• Health - Physical and mental health impacts, aviation fuel fumes, vibrations • Safety - Potential fire hazard, emergency procedures • Community identity and character – resulting in displacement of original residents. Also, change to population composition (transient population with influx/outflux of people) • Interruptions to daily lives e.g. road systems, increased travel time, sleep deprivation • Access to and availability of public transport • Social cohesion – Potential for physical barrier preventing community from connecting • Participation and rights - Reduction in property values • Employment opportunities
Development involving a number of uses	All developments that propose a range of different uses concurrently	
Other developments	Other development that Council considers may have a significant social impact	

Table A12.4 Possible data sources

Social Impact Dimension	Elements for consideration	Possible data sources
Population characteristics	Changes to the demographic composition of the local community (increases, decreases, rate of change) Change to cultural profile Change to socio-economic profile (labour force participation, occupation, family structure, etc). Influx or outflux of temporary or permanent residents Changes to the population evolving over time (future generations)	Shellharbour Community Profile, Atlas and Forecast ABS Census Data Health Statistics NSW Shellharbour IRIS Community Survey Illawarra Multicultural Services Remplan Department of Immigration and Citizenship Settlement Database Shellharbour's End of Term Report Illawarra Shoalhaven Local Health District
Target group	Children & Young People – is the development consistent with child friendly principles Families Older People People with Disabilities Aboriginal People People from Culturally and Linguistically Diverse Backgrounds Women Men	Shellharbour's Community Strategic Plan 2013-23 Shellharbour Community Profile, Atlas and Forecast Shellharbour Connect Website Shellharbour Kids Website ABS Census Data Closing the Gap Shellharbour City Council's Statement of Commitment to Aboriginal Australians Advocate for Children and Young People Department of Ageing, Disability and Home Care Healthy Cities Illawarra Enabling Environments
Health and Wellbeing	Environmental health (noise, smell, visual impacts) and exposure to health risks Food security - Access to healthy, affordable food environments that encourage participation in a healthy lifestyle Environments that are conducive to alternative modes of transportation and encourage physical activity	Health Statistics NSW Shellharbour Community Indicators Australian Government Department of Human Services - Centrelink ABS Census Data NSW Multicultural Health Communication Service Premier's Council for Active Living

Social Impact Dimension	Elements for consideration	Possible data sources
		National Heart Foundation Healthy Cities Illawarra Premier's Council for Active Living
Public Transport	Accessibility to public transport Location of routes and stops Provision of appropriate infrastructure Opportunity to utilise alternative means of transportation (incl. walking and cycling)	Bureau of Transport Statistics Transport for NSW ABS Census Data Shellharbour's End of Term Report Premier's Council for Active Living National Heart Foundation NSW Healthy Urban Development Checklist
Access to Human Services and Facilities	Change or availability of appropriate social infrastructure Connectivity or access to local shops, schools, community and health services and facilities. Availability of services for various population cohorts Equitable Access and Affordability	Shellharbour Connect Website Australian Department of Human Services – Family and Community Services Illawarra Forum Health Statistics NSW Shellharbour's End of Term Report
Social cohesion and harmony	Opportunities to have/build social networks Participation in community life Environments that foster social cohesion and community connections Inclusiveness versus alienation, creation of exclusivity or inequality Tolerance of diversity Potential for conflict or tensions	Shellharbour's Community Strategic Plan 2013-2023 Shellharbour IRIS Community Survey Shellharbour's End of Term Report
Community and spatial identity	Aesthetics and visual impact Amenity Sense of Place Objectives for specific neighbourhoods (including place based plans) Spaces to accommodate community event, cultural programs, plazas	Shellharbour's Community Strategic Plan 2013-2023 Shellharbour IRIS Community Survey Shellharbour's End of Term Report

Social Impact Dimension	Elements for consideration	Possible data sources
	Public areas with diversity of spaces for social activities/groups, reflection and quite places	
Culture and heritage	Religious practices Continuity of local culture Cultural life Continuity or effects on local history	Shellharbour's Community Strategic Plan 2013-2023 NSW Ministry for the Arts Shellharbour Community Profile, Atlas and Forecast ABS Census Data Shellharbour Community Indicators Remplan Shellharbour Community Profile, Atlas and Forecast ABS Census Data
Housing	Affordability of housing Housing diversity Housing adaptability Appropriateness of housing (population groups, incomes groups, etc.), change in housing needs Relocation or dislocation of existing residents	Shellharbour Community Profile, Atlas and Forecast ABS Census Data Housing NSW Real Estate Institute Shellharbour's End of Term Report NSW Healthy Urban Development Checklist

Social Impact Dimension	Elements for consideration	Possible data sources
Employment and Education	People's rights to access to appropriate employment and educational or training opportunities Local employment generation and diversity in employment Availability of appropriately qualified workers	Shellharbour IRIS Community Survey Australian Government Department of Human Services - Centrelink Department of Education and Communities ABS Census Data Shellharbour's End of Term Report Remplan
Participation and rights	Ability for communities to participate in the development of their local community Level of democratisation and perceptions of governance (credibility, accountability, etc.) Violation of civil liberties Economic disadvantage	ABS Census Data Shellharbour's End of Term Report
People's fears and aspirations	To what extent do people understand the development and its impact on their way of life People's fears about the future of their community Perceptions of risk	Shellharbour IRIS Community Survey Shellharbour's End of Term Report
Safety	Perceptions of safety - to what extent to people feel safe and secure Actual incidence of crime	Bureau of Crime Statistics and Research Shellharbour IRIS Community Survey Shellharbour Community Profile, Atlas and Forecast Shellharbour's End of Term Report Shellharbour's Crime Prevention Plan

Social Impact Dimension	Elements for consideration	Possible data sources
Open space and recreation	Access and connectivity to leisure and recreational opportunities Access and connectivity to open natural public space and built public space Change in built public space	Shellharbour IRIS Community Survey Open Space, Recreation and Community Facilities Needs Study Report Shellharbour's End of Term Report
Interruptions to the way people live their lives	Daily living patterns Movement patterns	Bureau of Transport Statistics Transport for NSW Department of Planning and Environment Road and Maritime Services Shellharbour's End of Term Report

A12.5 - Healthy Living

A12.5.1 Applicants must refer to and apply as relevant, the following healthy by design documents in considering social impact assessment:

a. Healthy Urban Development Checklist, by NSW Health, 2009

b. Development and Active Living: Designing Projects for Active Living, by NSW premier's Council for Active Living, 2010.

PART 6 - TULLIMBAR

APPENDIX 13 - TULLIMBAR PROVISIONS

This Appendix provides site specific provisions for the subject land.

Appendix 13 contains some deferred lands. Chapter 33 should also be referred to for provisions on deferred lands.

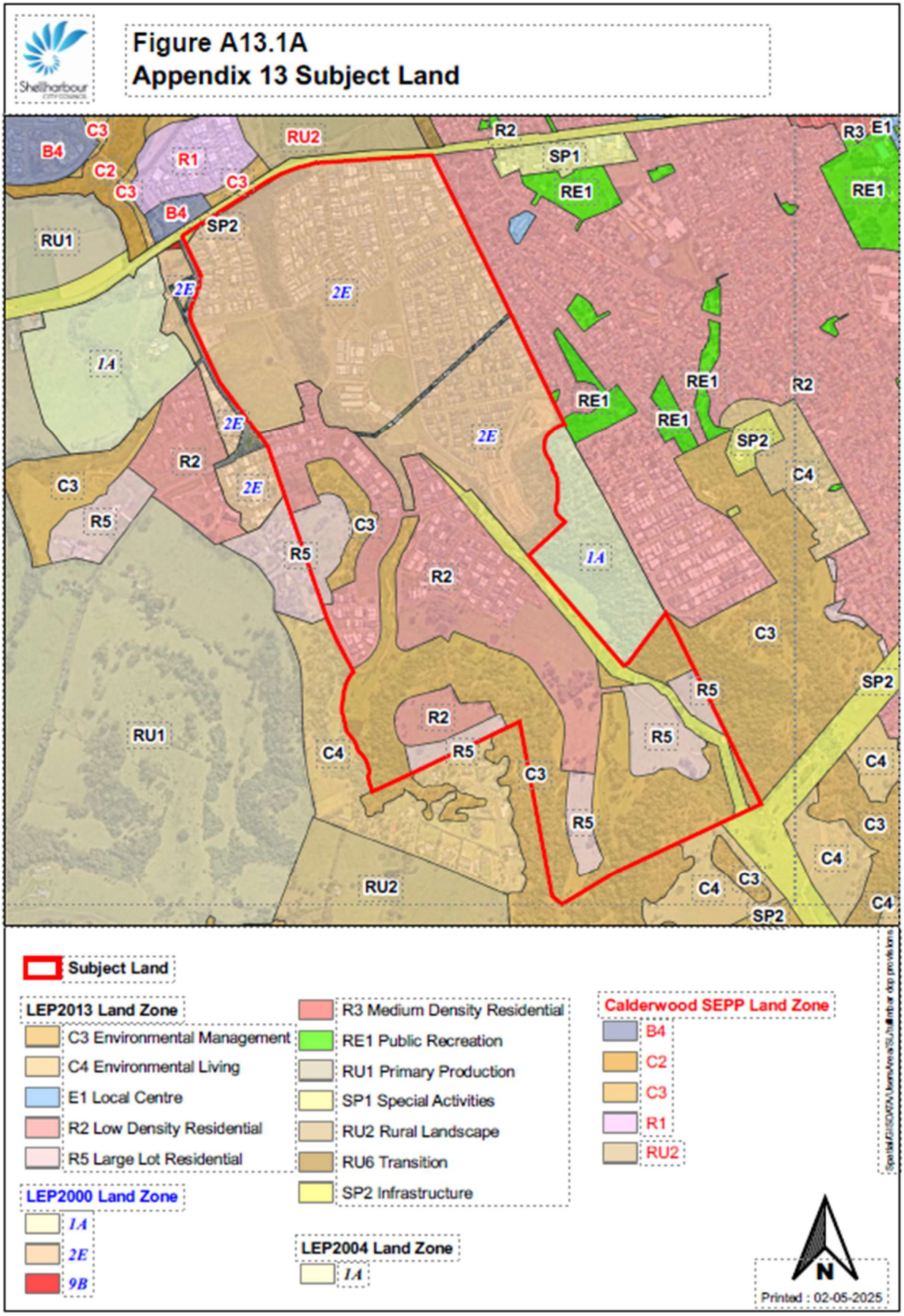
For advice in addition to these site specific provisions, please refer to the relevant chapters of the remainder of the DCP. Please note, where there are inconsistencies between the remainder of the DCP and the site specific provisions, the latter will prevail.

A13.1 - Subject land

This Appendix applies to land at Tullimbar zoned:

- 2(e) Mixed Use Residential under *LEP 2000*
- R2 Low Density Residential under *LEP 2013*
- R5 Large Lot Residential under *LEP 2013*
- C3 Environmental Management under *LEP 2013*
- SP2 Infrastructure (Electricity Transmission and Distribution) under *LEP 2013*

See Figure A13.1A: Appendix 13 Subject Land, below.


Figure A13.1A
Appendix 13 Subject Land
Subject Land
LEP2013 Land Zone
C3 Environmental Management
C4 Environmental Living
E1 Local Centre
R2 Low Density Residential
R5 Large Lot Residential
R3 Medium Density Residential
RE1 Public Recreation
RU1 Primary Production
SP1 Special Activities
RU2 Rural Landscape
RU6 Transition
SP2 Infrastructure
Calderwood SEPP Land Zone
B4
C2
C3
R1
RU2
LEP2000 Land Zone
1A
2E
9B
LEP2004 Land Zone
1A
N
Printed : 02-05-2025

A13.2 - Other related documents

Tullimbar Village Housing guidelines - these guidelines will apply to proposals for single residential use of lots in the Tullimbar Village. This document is yet to be reviewed and finalised however, in light of the requirements of Environmental Planning and Assessment Amendment Bill 1997.

A Mixed Use Village for the Western Valley, to Albion Park. Outcomes from the Charrette, August, 1996 - this report provides information relating to the outcomes of the Western Valley Charrette, on which this Appendix is based. It is a resource document that provides interpretive information or more detail explanations of the provisions of this Appendix.

A13.3 - Background information

This Appendix is based in the outcomes of the Western Valley Charrette conducted in March 1996 to develop an urban design for the development of land to which this Appendix applies. The urban design is based on ecologically sustainable development principles and therefore embraces the goal of a mixed use, relatively dense community that minimises dependence on the private car by providing for a range of services, activities and employment whilst respecting and preserving the natural habitat and resources.

The charrette was a five day, interactive planning process involving consultation with elected officials, public authorities, the community, interest groups and land owners. The urban design developed at the charrette and which forms the basis for this Appendix, proposes a walkable, mixed-use village with a variety of workplaces catering for around 350 jobs and a range of residential densities providing for a total of 1,500 dwellings. The plan capitalises on the natural setting, with the escarpment forests providing an attractive rural backdrop at the end of many streets, while Hazelton Creek is proposed to be rehabilitated into a naturally functioning stream, fronted by development, as a central focus of a linear park running through the middle of the village.

As an outcome of the finalisation of Council's *Local Environmental Plan 2013*, a planning proposal is proposed to be undertaken to review LEP 2013's provisions for Tullimbar. Any revised DCP provisions for Tullimbar will need to follow and be in line with the outcome of any planning proposal and can potentially be integrated throughout this DCP.

In the interim, provisions from the repealed *Tullimbah Village DCP* are the basis for this Appendix.

A13.4 - Objectives

1. To provide a much closer relationship between land use, subdivision and building types.
2. To provide a much closer relationship between public amenity and private development.To promote development of a mixed use urban village community for the Western Valley of Albion Park.
3. To minimises dependence on the private car by locating and supporting many daily activities within the project area, with detailed design that supports walking, cycling and bus use.
4. To encourage local employment and business (including home-based business) development within the project area.
5. To ensure that significant native vegetation, habitat, water resources, agriculture land and landscapes are protected.
6. To ensure the site constraints of flooding, bushfire risk, easement limitations, slope instability and erosion are taken into account.
7. To enable limited retail and commercial development provided that it is complementary to the existing Albion Park town centre.

8. To generate a strong sense of community identity through site-responsive layout, and urban design that creates a village with high amenity and supportive of informal interaction.
9. To ensure that the staging of the development maintains efficiency and equity for adjoining parcels of land in terms of costs, services, street layout and subdivision.
10. To provide sufficient resident population in conjunction with Regal Heights to support a primary school and community facilities in the village.
11. To regulate housing and mixed use development to ensure compatibility and protect amenity of surrounding neighbours and the community.
12. To provide a clearly defined urban growth boundary to south-western urban development of Albion Park and to manage development along the edge of the village to protect rural values.
13. To concentrate densities on lands within a safe and accessible walking distance to village and neighbourhood centres.

A13.5 - Tullimbar Village structure plan

This Appendix adopts the Tullimbar Village Structure Plan as illustrated in **Figure A13.1**. It is noted that the Structure Plan includes lands outside the land to which this Appendix applies. Development concepts for lands not contained in this Appendix should not be construed as making such developments permissible.

The provisions of this Appendix operate by requiring development to be generally consistent with the structure plan, however refinements to the structure plan may be considered in some circumstances where the objectives of the Appendix are still to be fulfilled.

Circumstances that may warrant consideration of variations to the Appendix include (but need not be limited to):

- refinement of government agency requirements (e.g. for stormwater, streams, bushland protection etc)
- detailed survey information
- detailed environmental studies
- detailed engineering studies
- design refinement that increases efficiency of street layout and lot dimensions
- achievement of higher than anticipated resident and/or worker density in appropriate locations
- unanticipated, but compatible, type of business investment or development staging considerations.

Variations to the Tullimbar Village Structure Plan will only be considered where satisfaction of the objectives contained in this Appendix and other legislative requirements are able to be demonstrated.

It is noted that urban development will not generally be supported on land greater than 20% slope.

A13.6 - Tullimbar Village urban development precincts

Within the context of the Tullimbar Village Structure Plan identified in **Figure A13.1**, the village has been divided into development precincts so as to provide some development certainty and some scope for mixed uses. In each precinct, one land use or activity will usually predominate and in most precincts, a range of other compatible activities will be considered on a performance basis.

The following **Table A13.1** lists the precincts, the map notation and a brief description of each. Different requirements may apply in each precinct.

The precinct boundaries are shown on **Figure A13.2**.

Table A13.1 – Tullimbar Village Urban Development Precincts

TULLIMBAR VILLAGE URBAN DEVELOPMENT PRECINCTS		
Notation	**Precinct Name**	**Description**
MIXED USE PRECINCTS		
VCR1	Village Centre Retail 1	Local retail core
VCR2	Village Centre Retail 2	Highway-focussed speciality retail
VCMU1	Village Centre Mixed Use 1	Central main street frontage adjoining and/or between VCR1 and VCR2 nodes.
VCMU2	Village Centre Mixed Use 2	Mixed use precincts close to and functionally related to the Village Centre
VCEMU	Village Centre Easement Mixed Use	Mixed use precinct on the power easement
NC1	Neighbourhood Centre 1	Southern valley neighbourhood centre near the confluence of the two streams
NC2	Neighbourhood Centre 2	Neighbourhood centre on the Central Plateau at the eastern edge of the project
PREDOMINANTLY RESIDENTIAL PRECINCTS		
MDR1-9	Medium Density Residential 1	Precincts where the Appendix generally encourages medium density, predominantly residential development and home-based business
LDR 1-9	Lower Density Residential	Precincts where the Appendix generally encourages lower density, predominantly residential development and home-based business.

A13.7 - Development incentives

The Tullimbar Village mixed use village project is regarded as innovative and valuable to the Shellharbour local government area. Council has therefore included a range of incentives into this Appendix to encourage development to be well-designed in terms of the site and surroundings.

A13.7.1 These incentives include:

a. *design advice and plan endorsement* - Council will require plans to be endorsed by an architect prior to the lodgement of development applications should developers wish to provide such a service to subsequent developers and home-buyers to facilitate development in compliance with this Appendix

b. *car parking* - the design of the village incorporates extensive on-street parking capacity. This means that many non-residential and home-business uses will not be required to provide additional off-street parking because of the on-street supply

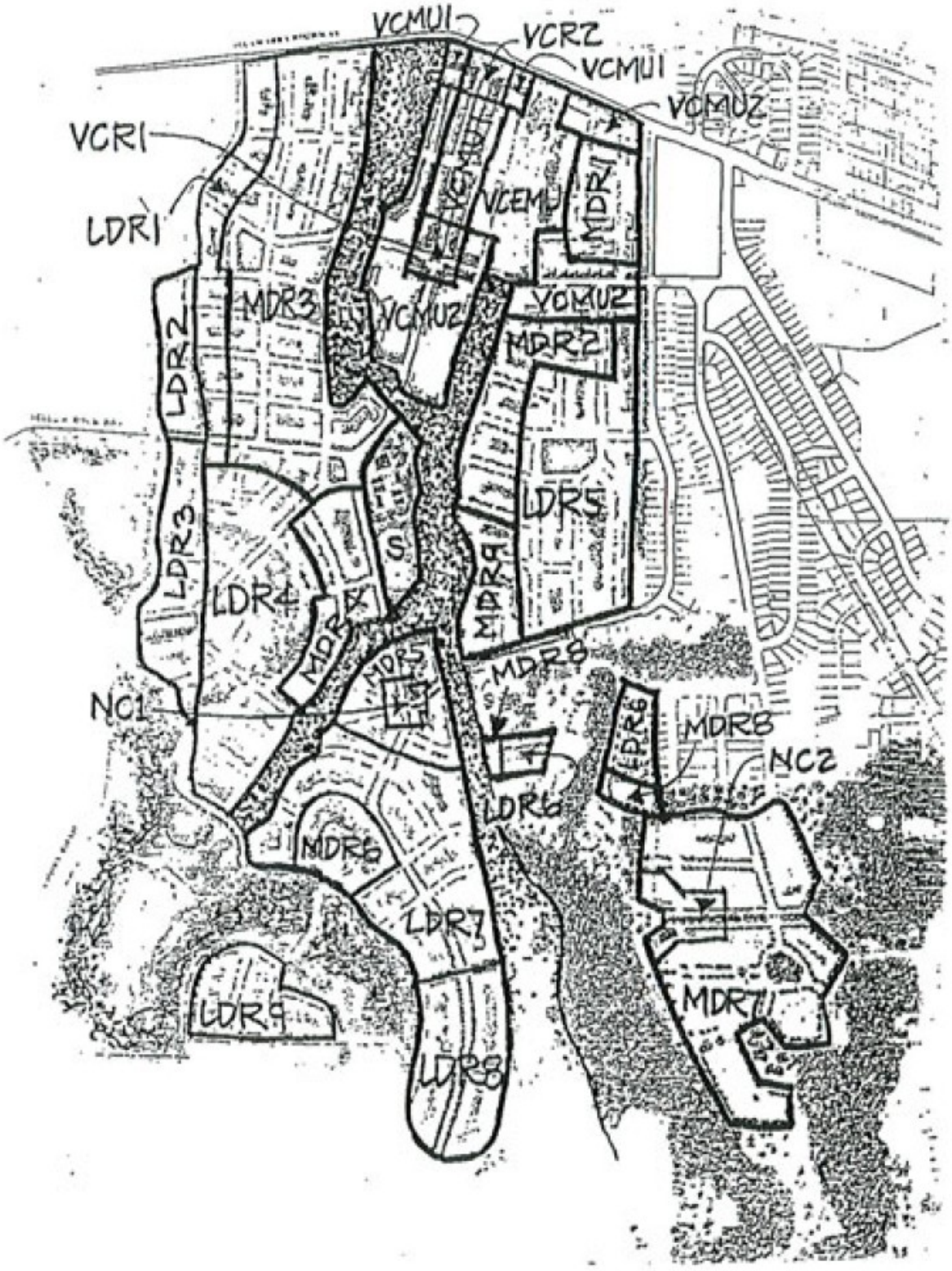
c. *easier approval and design flexibility for residential lots - Building and Access Guidelines (BAGs)* will define building envelopes and access requirements. This will also make it easier to provide smaller lots between 230 and 450 m^2

d. *interim use approvals* - to stimulate construction of the village centre and local facilities, interim uses such as “school in shops” or “school in dwellings” may be supported.

Figure A13.1 - Western Valley Village Structure Plan (NB This plan includes lands to which this Appendix does not apply)



Figure A13.2 - Tullimbar Village Urban Development Precincts (NB This plan includes lands to which this Appendix does not apply)



A13.8 - Provisions

The development requirements within this Appendix are organised into Sections within which objectives and advice are specified. Normally all relevant advices are to be met. If one or more of the advices is not met, then justification must be provided to show the specific objectives of the section and the general objectives of this Appendix are met.

A13.9 - Water and stream management

Objectives

1. To ensure that areas used for urban development are not flood liable.
2. To manage storm water quantity and quality, both during construction and long term.
3. To engineer and re-configure the features of a naturally functioning stream including a riparian corridor, minimum width 40m, in the modified central and lower sections of Hazelton Creek, north of where it leaves the present power easement, in order to enhance its habitat value, water quality, recreation and urban landscape value.
4. To preserve the habitat value and enhance the urban landscape value of both branches of upper Hazelton Creek, south and west of where it meets the present power easement.

ADVICE

A13.9.1 A detailed Stream and Stormwater Management Plan for Hazelton Creek Catchment is to be prepared. **Figure A13.3** is a Stream and Stormwater Management Concept Plan that demonstrates in principle one possible solution with:

a. retarding basins upstream of the urban areas to reduce peak flows and downstream flooding, located to minimise their urban land take

b. reconstruction of the stream channel, fringing vegetation and floodway in the northern and central part of the site to restore its potential to support a complex aquatic ecology and to reduce the relatively flat and well-located land that is presently flood prone

c. retention of those stream sections which are still in a relatively natural state and in good ecological condition

d. increased culvert capacity under the highway to reduce likely flooding of the highway and to reduce the upstream area likely to flood

e. construction of artificial wetlands adjacent to the creek to clean storm water runoff from the urban areas before it enters the creek.

The detailed Stream and Stormwater Management Plan, or a satisfactory alternative, must be prepared by the developers and to the satisfaction of Shellharbour City Council and relevant statutory authorities.

Detailed storm water management plans consistent with the adopted Stream and Stormwater Management Plan and soil and water management plans, are to be approved by Council in association with the subdivision of each stage.

A13.10 - Bushland protection

Objectives

1. To retain and protect as bushland those areas of native vegetation identified as significant for conservation, wildlife corridors, habitat, slope protection or landscape values.
2. To protect and enhance threatened plant species.

3. To provide for limited street crossings, detailed to minimise damage through the bushland escarpments.

4. To detail development abutting bushland to address bushfire hazards, generate minimal damage to the bushland from weeds, rubbish and domestic pets, and provides appropriate storm water management.

ADVICE

A13.10.1 The forested land identified as having significance for conservation or rehabilitation is shown in **Figure A13.4** and these areas are generally to be retained as bushland and managed by the appropriate government authority, Council or landowner

A13.10.2 Detailed plans of management for forested land identified in **Figure A13.4** must be submitted in conjunction with related subdivision proposals.

A13.10.3 All areas of the threatened *Cyanchum* and *Zieria granulata* species are to be identified on subdivision plans and a plan of management developed and approved by Council to protect these plants.

A13.10.4 The number and width of vehicle routes through bushland escarpments, is limited to four (two serving Cooby Plateau and two serving the Central Plateau), and detailed to be a narrow two-lane paved section with minimal cut and fill work and with dispersed (rather than point source) run-off, subject to street layout.

A13.10.5 Streets must be provided between upland urban development and the bushland edge for fire protection and to provide access for fire-fighting vehicles between forests and urban lands. Storm water runoff is to be collected and then diffused into the bushland escarpments so as to retain a similar runoff regime to the presently undeveloped state, or an enhanced regime beneficial to the vegetation.

A13.10.6 Where vehicular streets are not practical against the lower edge of the escarpment, a public access reserve with footpath is to be provided and abutting lots laid out and building envelopes specified to ensure that development fronts the bushland. The length of any such pedestrian reserve should generally not exceed 150 metres without vehicular access.

A13.10.7 Trees determined to be retained within the development must be initially identified on aerial photographs at Council and subsequently marked on site. On ground subdivision plans and development applications are required to respond to these requirements. Trees proposed to be removed (subject to Council's requirements) are also to be identified on subdivision plans and development applications.

A13.11 - Parklands and public recreation

Objectives

1. To provide parkland and public recreation facilities to serve the passive recreation and local sporting needs of the local community.

2. To provide for parklands that are well-distributed and have safe and convenient access to residents and to ensure that they are developed to a reasonable standard at an early stage.

3. To facilitate the contribution that high quality parks, particularly those that capitalise on natural site features, can make to the success of the mixed use village.

4. To ensure that urban parks are provided with good surveillance from streets and adjacent development frontage.

ADVICE

A13.11.1 Parkland is provided in general accord with **Figure A13.5** *Indicative Locations, Sizes and Functions of Parkland for the Western Valley Project Area.* This includes the Hazelton Creek linear park (with minimum width of 40 metres), local parks of minimum area 3000m^2 in the east, north, north west, Cooby Knoll and Central Plateau. The precise boundaries, size and location of parks may be varied or amended to be consistent with the adopted Stream & Stormwater Management Plan and as detailed plans for each precinct are finalised.

A13.11.2 Additional pocket parks and green landscape features may be provided to provide sufficient parks in appropriate locations.

A13.11.3 The design, location and access to the sports field is to ensure this facility is available for both school and community use.

A13.11.4 A walking and cycle path is provided along the Hazelton Creek linear park. This cycle/walking route may use “shareway” streets fronting the park.

A13.11.5 Parks must be substantially bounded by streets or “shareways” and fronted by development. Minor frontages may be to footpaths. Lot layouts backing on to parks or resulting in a back fence to another street will not be supported.

Figure A13.3 - Possible Stream and Stormwater Management Concept Plan (NB This plan includes lands to which this Appendix does not apply)

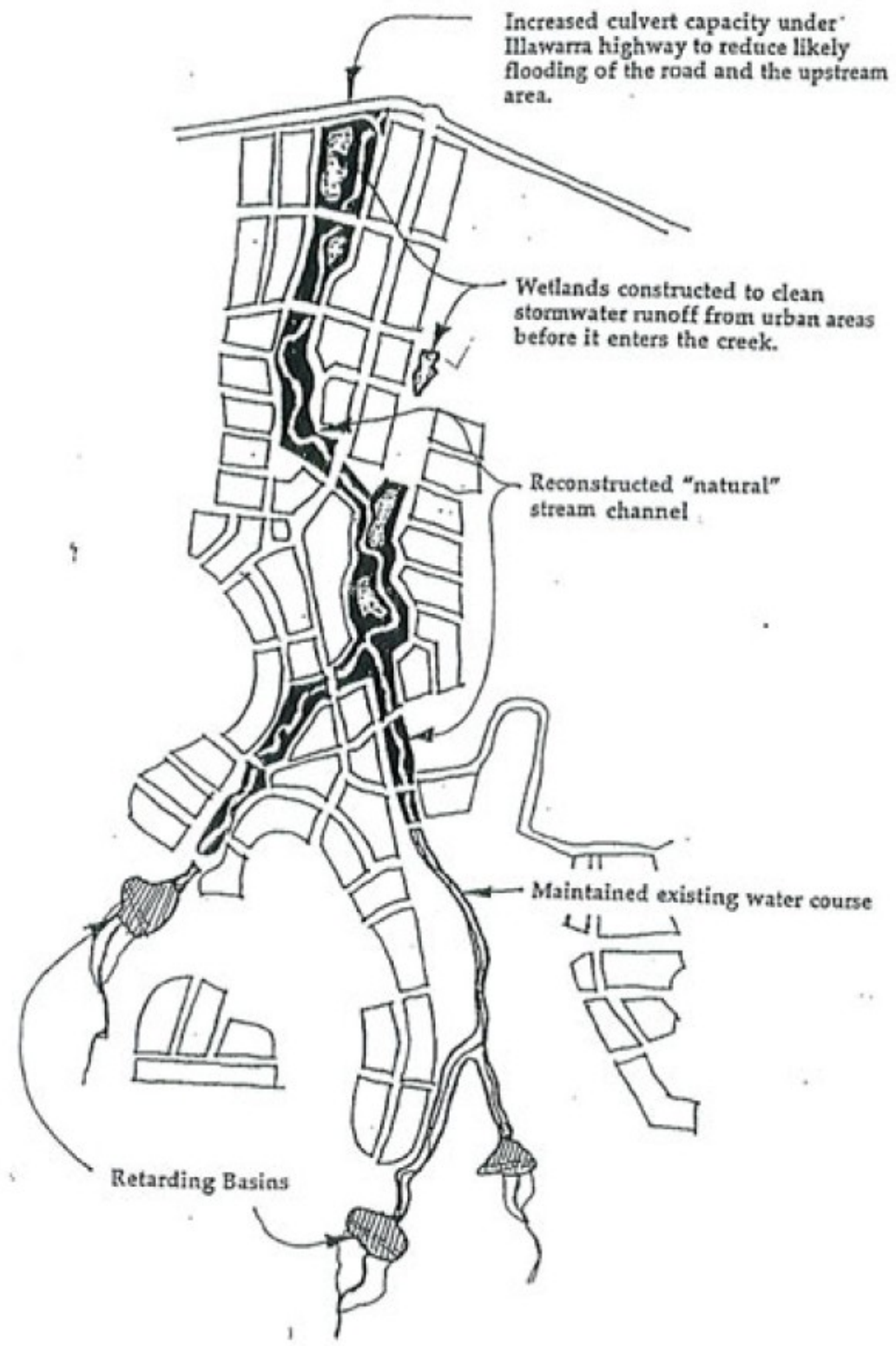


Figure A13.4 - General Bushland and Habitat Plan (NB This plan includes lands to which this Appendix does not apply)

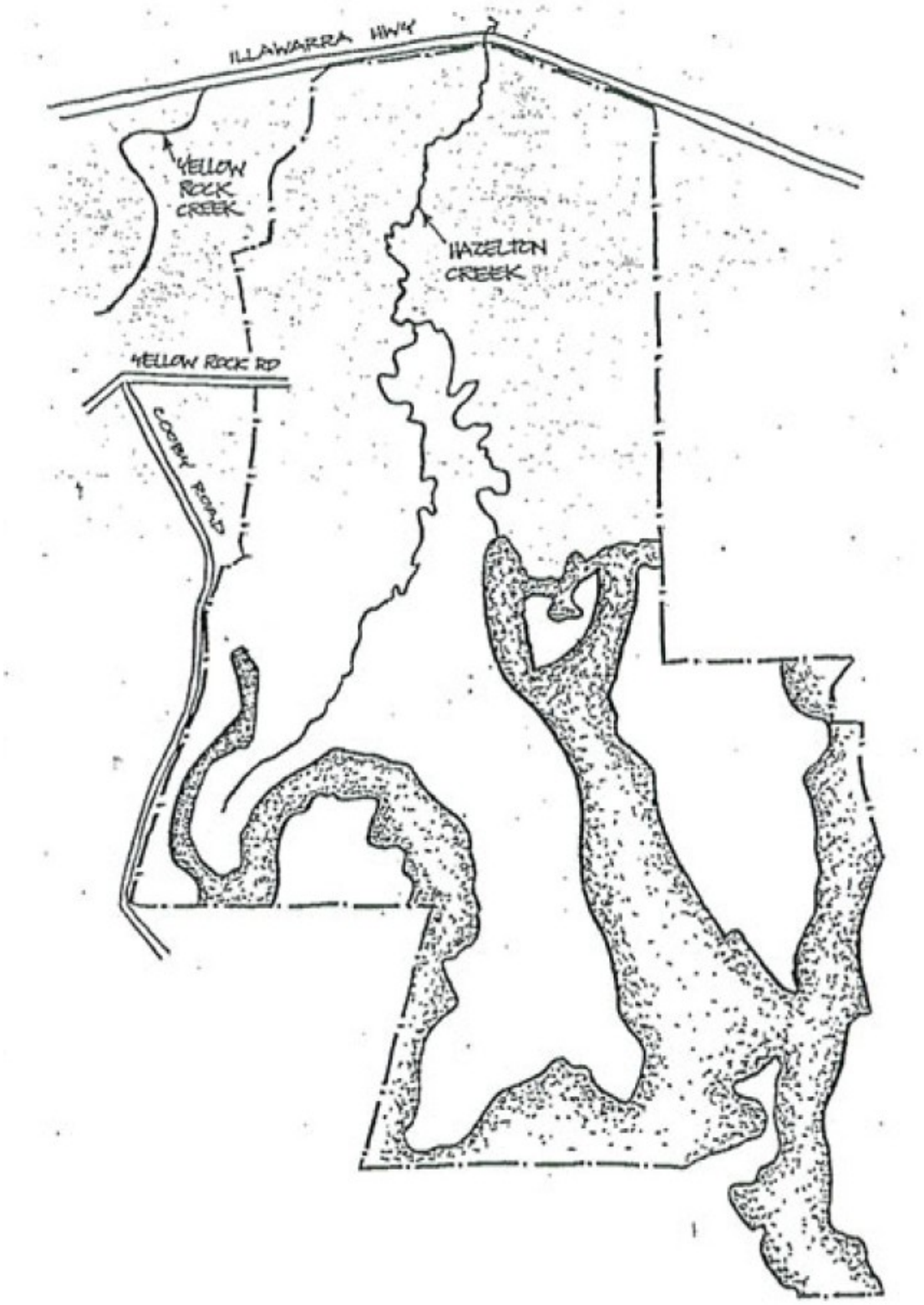
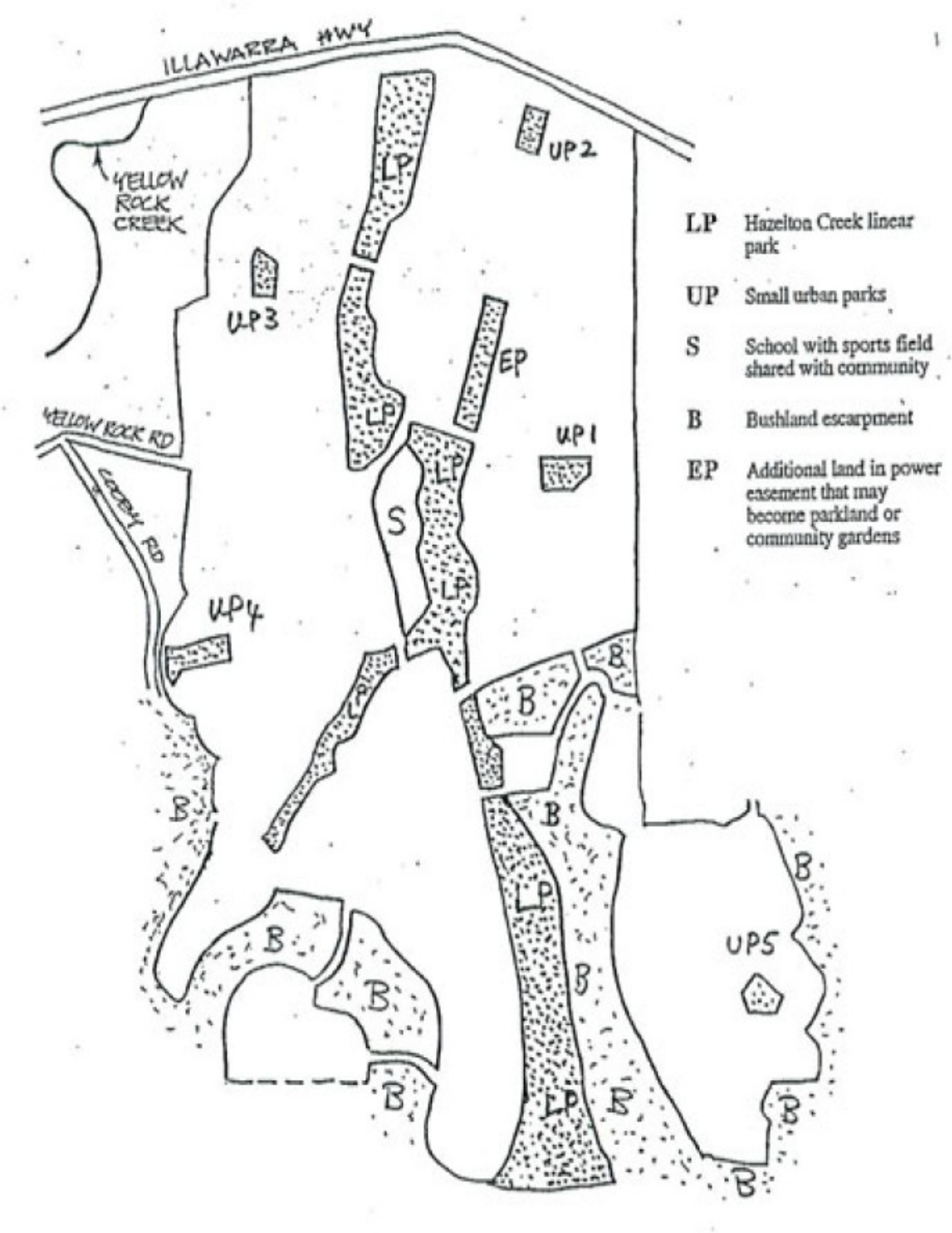


Figure A13.5 - Indicative Locations, Sizes and Functions of Parkland for the Western Valley Project Area (NB This plan includes lands to which this Appendix does not apply)



A13.12 - Schools and community facilities

Objectives

1. To identify and commit land for a school central to its catchment and make efficient use of land by seeking to incorporate some floodplain and easement land in the school site, where buildings are not to be located.
2. To provide for the possibility of an interim school being established at an early stage of the village development, in buildings which can be used for other purposes when the main school opens.
3. To encourage provision and shared use of public community, school and recreation facilities.
4. To encourage within the village private community facilities such as churches, child care centres, private schools, meeting rooms and halls etc.
5. To guide the location, design and appearance of public and private community buildings to enhance the character and identity of the village, and to ensure that community facilities are designed to be compatible with the surrounding uses.

ADVICE

A13.12.1 Land for the Primary school is to be set aside generally in accordance with the Western Valley Structure Plan (**Figure A13.2**). The school should be sited, designed and detailed as a landmark to terminate the vistas of applicable village streets.

A13.12.2 Community use buildings should generally be placed in positions of prominence in relation to the street network, sited to front streets and other abutting public spaces and detailed to appear as “public” buildings to enhance the village character.

A13.13 - Utilities

Objectives

1. To provide adequate utility services to the village in a manner that is efficient in land take and land disturbance.
2. To optimise the integration of the transmission easement into the street layout, open space network and compatible land uses.

ADVICE

A13.13.1 The design and provision of public utilities, including sewerage, water, electricity, street lighting and gas services must conform with the requirements of the relevant servicing authorities for all allotments.

A13.13.2 Compatible public utility services must be coordinated in common trenching in order to minimise construction costs for underground services and required widths of street reserves.

A13.13.3 Streetscape schemes, including tree planting, must take into account any restrictions imposed by the location of underground services.

A13.13.4 Residential developments in elevated or bushland edge locations must have adequate water supply services for both domestic and fire-fighting purposes.

A13.14 - Street network

Objectives

1. To provide a highly inter-connected street network and village centre to support shortened local car trips, walking, cycling and public transport which will reduce travel and car-dependence.
2. To structure and provide a street network to facilitate and support development of a higher density, mixed use urban village.
3. To encourage inter-connectivity across the Hazelton Creek linear park.
4. To provide a bus route linking the village community to its centres, Albion Park and to other destinations.
5. To provide a site-responsive street network taking into account natural features, addressing physical constraints, surrounding parks and facilitating solar access to dwellings.
6. To provide adequate local street connections between the village and existing urban areas.
7. To ensure efficiencies in street layout, services and costs between related development parcels of land.
8. To ensure streets are designed to control traffic speed and provide good on-street local parking facilities.
9. To assist with bushfire hazard mitigation and evacuation requirements.

ADVICE

A13.14.1 Major streets must generally be provided in accord with **Figure A13.6** *Indicative Major Street Network, Centres and Bus Route Plan* focussing traffic to and through the village centre and diverting Yellow Rock Road and Cooby Road traffic through the centre.

A13.14.2 Streets must be designed to accommodate a bus route in general accord with **Figure A13.6**. The detailed route between the southern and central plateau neighbourhood centres across the escarpment may be adjusted in response to engineering investigations and demand studies. Principal bus stops must be located at centres with secondary stops at main intersections or destinations up to 400m apart.

A13.14.3 A village centre street network must be provided in general accord with **Figure A13.6** to provide a main street flanked by two parallel streets, one along the Hazelton Creek Linear Park and the other an easement frontage street with interconnected cross-streets.

A13.14.4 Creek and escarpment crossings must be provided in the general locations shown in **Figure A13.6** and use a hierarchy of street crossings of Hazelton Creek, so that:

- access is possible to all areas of the Village in the 1% AEP storm event, whilst permitting temporary submergence of non-essential road crossings;
- Bushfire hazard mitigation and evacuation is assisted;
- Vehicle and pedestrian trip distances are reduced via better connectivity and alternate route options; and
- Traffic congestion can be eased.

A13.14.4A Any creek crossing linking Bemboka Street to Terragong Street may take the form of a shared pedestrian/bicycle pathway of 3 metres clear width, subject to demonstration that a vehicular bridge is not required to achieve emergency access/egress requirements and that existing/proposed road networks are safe and have sufficient capacity in terms of total proposed vehicular traffic.

A13.14.5 A highly-interconnected local street network must be provided in general accord with **Figure A13.1** incorporating rear lanes for garage access in mixed use and denser residential areas.

A13.14.6 At least 60% of all dwellings proposed must be within 400 metres actual walking distance along streets or shareways of the village centre, local retail node and bus stop or the southern neighbourhood centre and bus stop. This may be achieved by producing the highest lot/dwelling yields within such distances and by ensuring that the local street network is oriented towards the target (see **Figure A13.7**. *Indicative Overall Street Network Plan and Walkable Catchments*).

For other bus stops and for residential areas beyond those designated above, the street network must provide for walking routes that are as short and direct as practical within the physical constraints of the site.

A13.14.7 The number of dwellings to be located outside an 800 metre radius of the primary school must be minimised (see **Figure A13.7** for radius).

A13.14.8 Bushfire risk must be reduced by providing streets to bound urban development at the edge of bushland on the Central and Cooback plateaux, and be ensuring that there are at least two street connections serving all areas bounded by bushland vegetation.

A13.14.9 Straight segments of street should be used to direct views to trees, escarpments, the creek valley, main school and community buildings and other landscape features within the village. Slight bend of streets, usually at junctions should be used to direct views obliquely to important and/or significant community buildings. (**Figure A13.8** provides some design suggestions.)

A13.14.10 Most streets must be generally aligned north-south or east-west (within 30 degrees) to facilitate lot layout and house siting that can capitalise on solar access.

A13.14.11 Streets or "shareways" must be provided to bound parks, including the whole of the main Hazelton Creek parkway, to ensure they are fronted by development**.**

A13.14.12 Limited sections of parks or bushland bounded only by lots fronting a foot/cycle path may be considered where a frontage situation exists as identified in **Figure A13.9** *Design Suggestion: Lot Layout Alternatives For Frontage to Lower Slopes of Bushland Escarpments* and **Figure A13.10** *Design Suggestion: Lot and Dwelling Layouts for Front Narrow Linear Parks*.

A13.14.13 Rear lanes must be used in areas of increased density where lot frontage is typically 9.5 metres or less, and are recommended for use when most lot frontages are 12 metres or less. Rear lanes may be used for properties fronting parkland, to accommodate greater density for these properties, and/or as one way to enable footpaths or shareways to replace streets for certain lengths of park frontage not exceeding 150 metres.

A13.15 - Street design

Objectives

1. To ensure that streets are designed as multi-purpose public spaces appropriate to traffic needs but which also support pedestrians, cyclists, parking, attractive development frontage and

social interaction.

2. To ensure high streetscape quality including adequate space for street trees, landscape elements and street furniture.
3. To ensure that the designated bus route is designed as an efficient route and provides for comfortable passenger travel.
4. To ensure that streets are designed and detailed to have appropriate landscape treatment, minimise cut and fill and bushland disturbance, support wildlife movement, manage storm water runoff and control erosion.

ADVICE

A13.15.1 Residential street sections and layouts must generally be in accord with **Figure A13.11** *Residential Street Types* and **Figure A13.12** *Street Layout and Intersection Treatments*.

A13.15.2 Village street sections and layouts must be generally in accord with **Figure A13.13** *Village Centre Street Types* and **Figure A13.12**.

A13.15.3 The street pavement and minimum reserve width selected for each street is to take into account not only traffic volume, but also other functions of the street, including the relationship to topography, lot types and other development intensity, through travel function, parking demand for residents, visitors and home businesses, street trees, servicing and appearance.

A13.15.4 Street types indicated in **Figure A13.11** and related street pavement widths for local streets in residential precincts are generally to provide as follows:

a. in all Medium Density Residential Precincts: normally Street Type C - 7.5 metres; and for parkland edges, Street Type A - 5 metres;

b. in Low Density Residential Precincts within a 400 metre radius of the village centre or a 200 metre radius of a neighbourhood centre: Street Type C - 7.5 metres; except for parkland frontage streets which may be Street Type A - 5 metres or Shareways - 3.5 metres, depending on traffic volume;

c. in Low Density Residential Precincts outside the 400 metre/200 metre radii streets would usually be Street Type B - 5 metres, (although Street Type C - 7.5 metres is acceptable). Street Type A - 5 metres or Shareways - 3.5 metres may be used to front parks or bushland, although Shareways may not be appropriate for streets bounding development along the top of the escarpment, as these streets must be detailed for fire-fighting access.

A13.15.5 Development fronting the Illawarra Highway and the main street in the village centre north of the creek crossing must be provided with vehicle access that does not require vehicles to reverse out into the main traffic stream. A service road must be provided along most of the Illawarra Highway frontage, and rear lanes are to be provided for the main street unless it can be demonstrated that other 'no-reversing' parking access arrangements can be provided without significant detriment to the amount of on-street parking.

A13.15.6 Intersection treatments must accord with **Figure A13.12.** To encourage pedestrian movement and safety:

a. minimum kerb radii are encouraged and should not exceed 5 metres, except at junctions with the Illawarra Highway or village centre streets, where it can be demonstrated that substantial demand will exist from large vehicles;

b. pram/ wheelchair ramps must be provided at all footpath/roadway junctions;

c. sight lines at intersections within the village must be kept to a minimum to

encourage a safe and slow speed traffic environment;

d. splayed corners are not required on any lot unless a severe topographic sight line constraint is demonstrated.

A13.15.7 Kerb profiles must generally be applied as follows:

a. upright kerbs must be used in all village centre streets, all streets with back lanes, in all areas denser than 18 dwellings per gross hectare on average and on all 7m-7.5m pavements. Upright kerbs are permitted on all streets;

b. mountable or semi-mounted kerbs must only be used in low-volume narrow pavement-width streets (5.5m or less);

c. flush kerbs must be used wherever an informal edge to parkland is appropriate or wherever diffused discharge of storm water is appropriate; and

d. Back lanes are encourage to be designed with a central drainage invert.

A13.15.8 Where no street is provided along frontage to lower bushland slopes, foot/cycle paths must be provided and detailed to enable emergency access for fire-fighting and maintenance.

A13.15.9 Footpaths and their widths must be provided in accord with **Figures A13.11 and A13.13**. Footpaths on residential streets must be a minimum of 1.2m wide and are required on one side only in low density residential precincts. Shareways (narrow pavements of 3.5 metres and special slow speed design giving equal priority to pedestrians) do not require a separate footpath.

A13.15.10 Footpaths and streets on slopes must be designed to minimise site-disturbance and to reinforce the relationship to adjoining properties.

A13.15.11 Innovative solutions to providing on-street parking along shareways, at the rate of one space per two dwellings, are encouraged.

Figure A13.6 - Indicative Major Street Network, Centres and Bus Route Plan (NB This plan includes lands to which this Appendix does not apply)

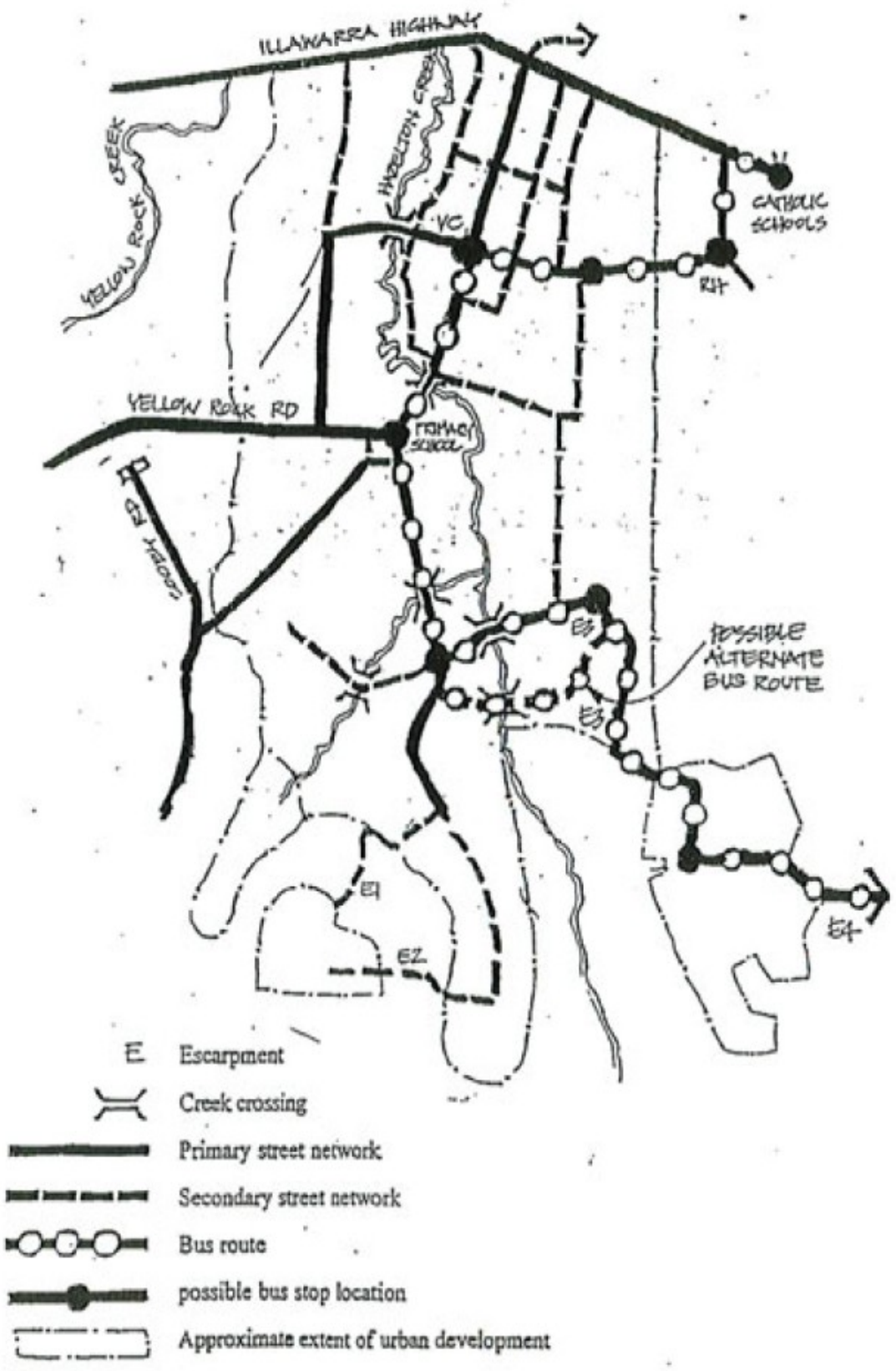


Figure A13.7 - Indicative Overall Street Network Plan and Primary Walkable Catchments (NB This plan includes lands to which this Appendix does not apply)

Note: This map is a Concept Plan and is subject to the final location of the Southern and Central Neighbourhood Centres.

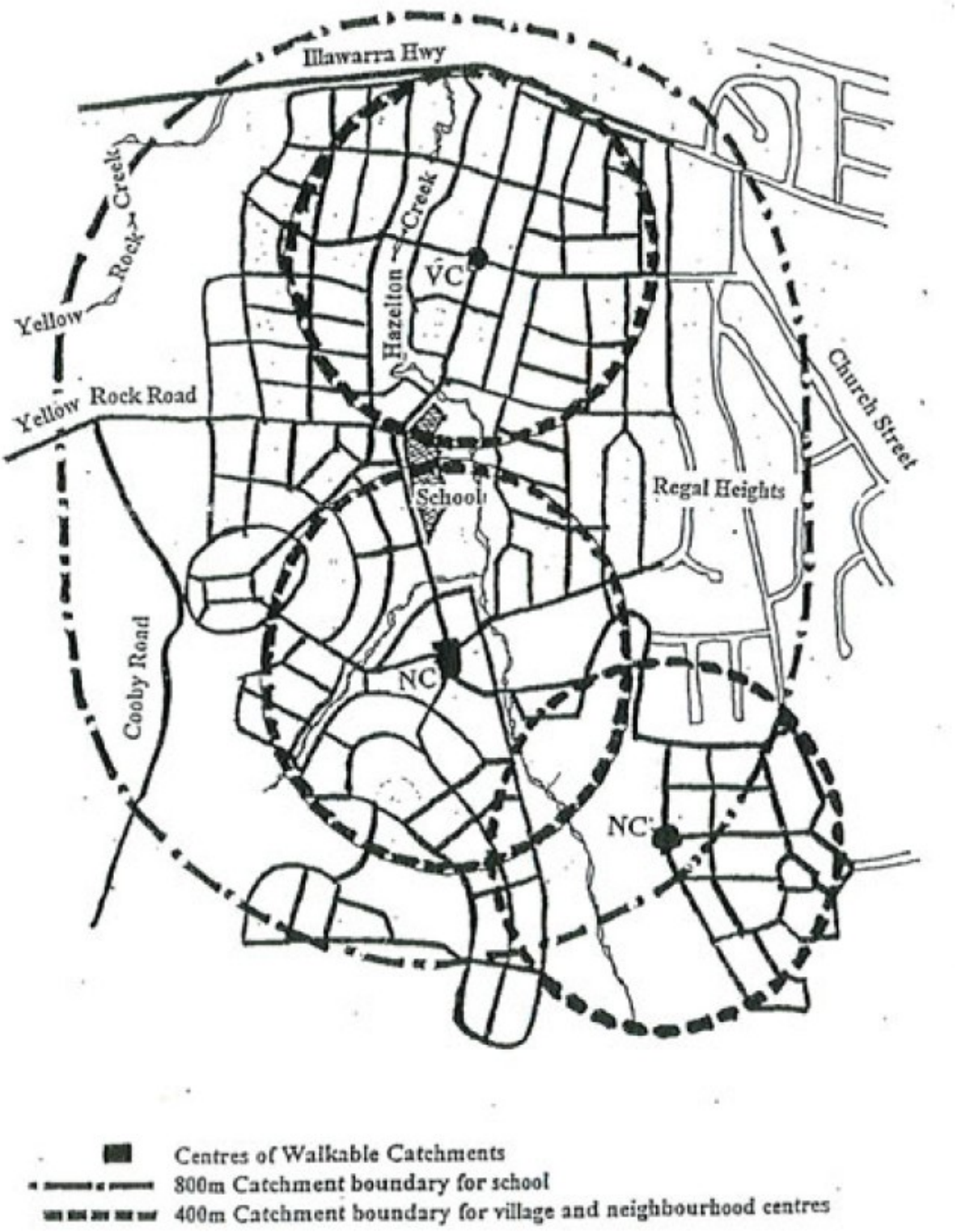


Figure A13.8 - Design Suggestion: Minor Realignment of Straight Streets to Direct Views to Buildings or Landscape Features

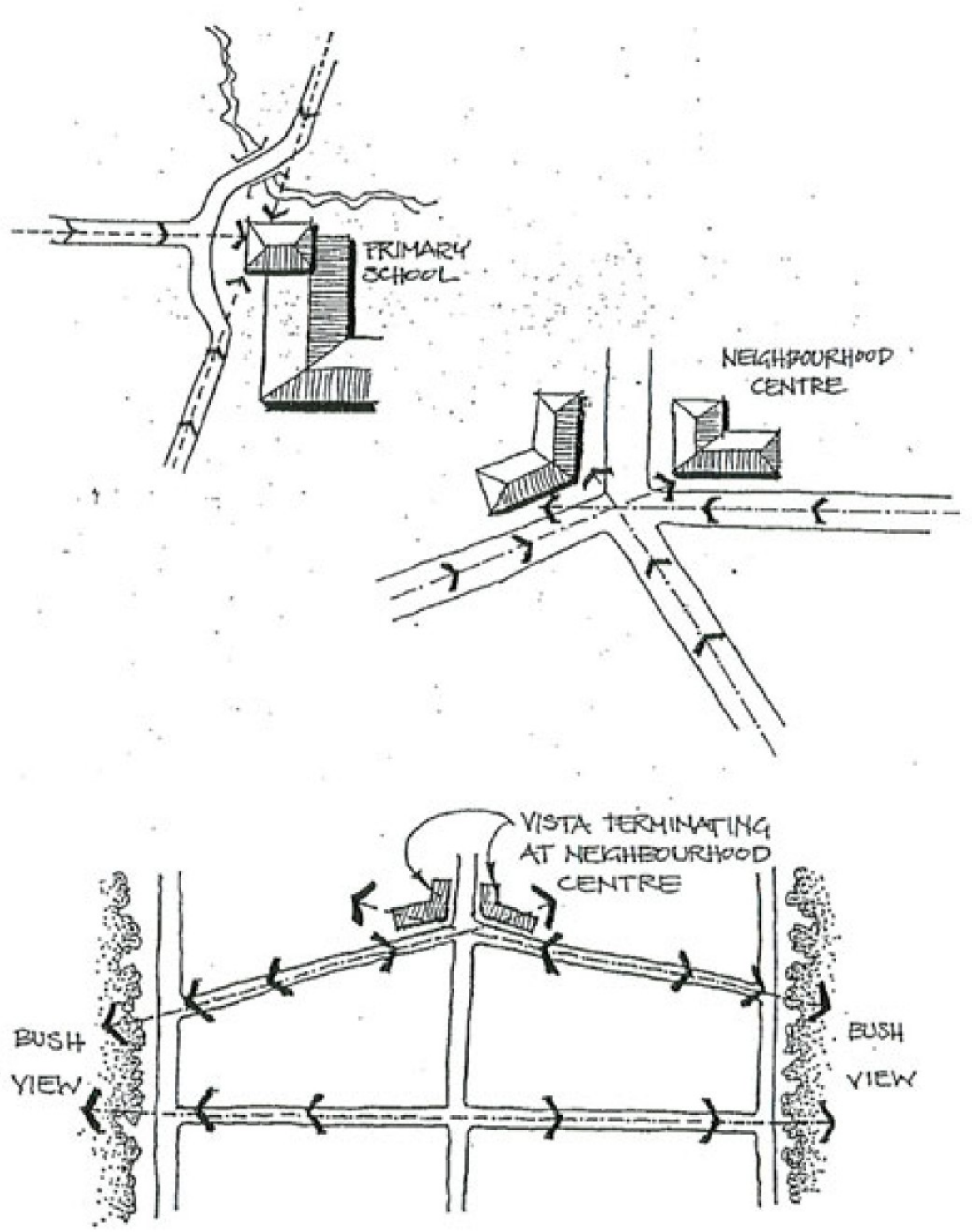
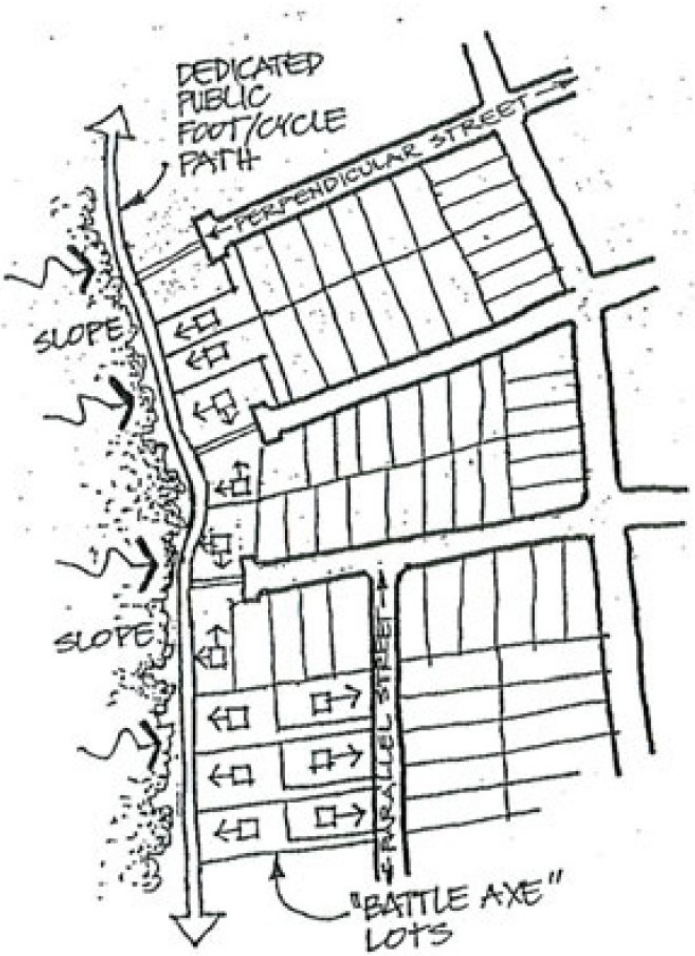


Figure A13.9 - Design Suggestion: Lot Layout Alternatives For Frontage to Lower Slopes of Bushland Escarpments



STREETS PERPENDICULAR TO SLOPE/BUSH
Preferred
- Two "battle axe" lots.
- Corner lot dwellings face both ways.

STREETS PARALLEL TO SLOPE/BUSH
- "Battle Axe" lots from parallel street

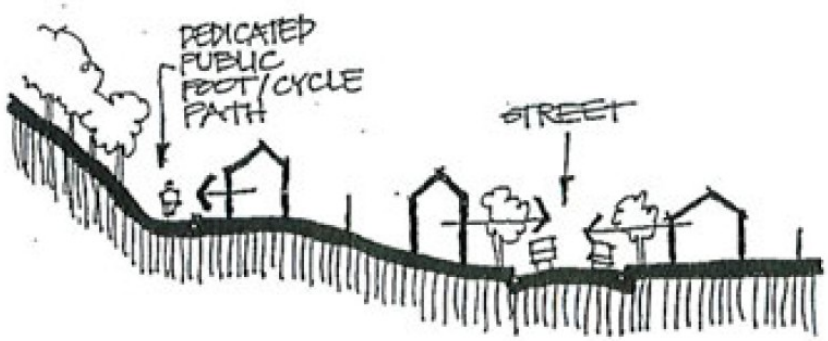


Figure A13.10 - Design Suggestion: Lot and Dwelling Layouts for Front Narrow Linear Parks



A Lots fronting park across a street - preferred solution.
B Rear lane along end-block with footpath frontage - acceptable where there is a street on the opposite side.
C Side or rear access battleaxe lots fronting to footpath - acceptable where there is a street on the opposite side.
D Lots backing onto park - not supported.
E Lots backing onto street - not supported.

Figure A13.11 - Residential Street Types

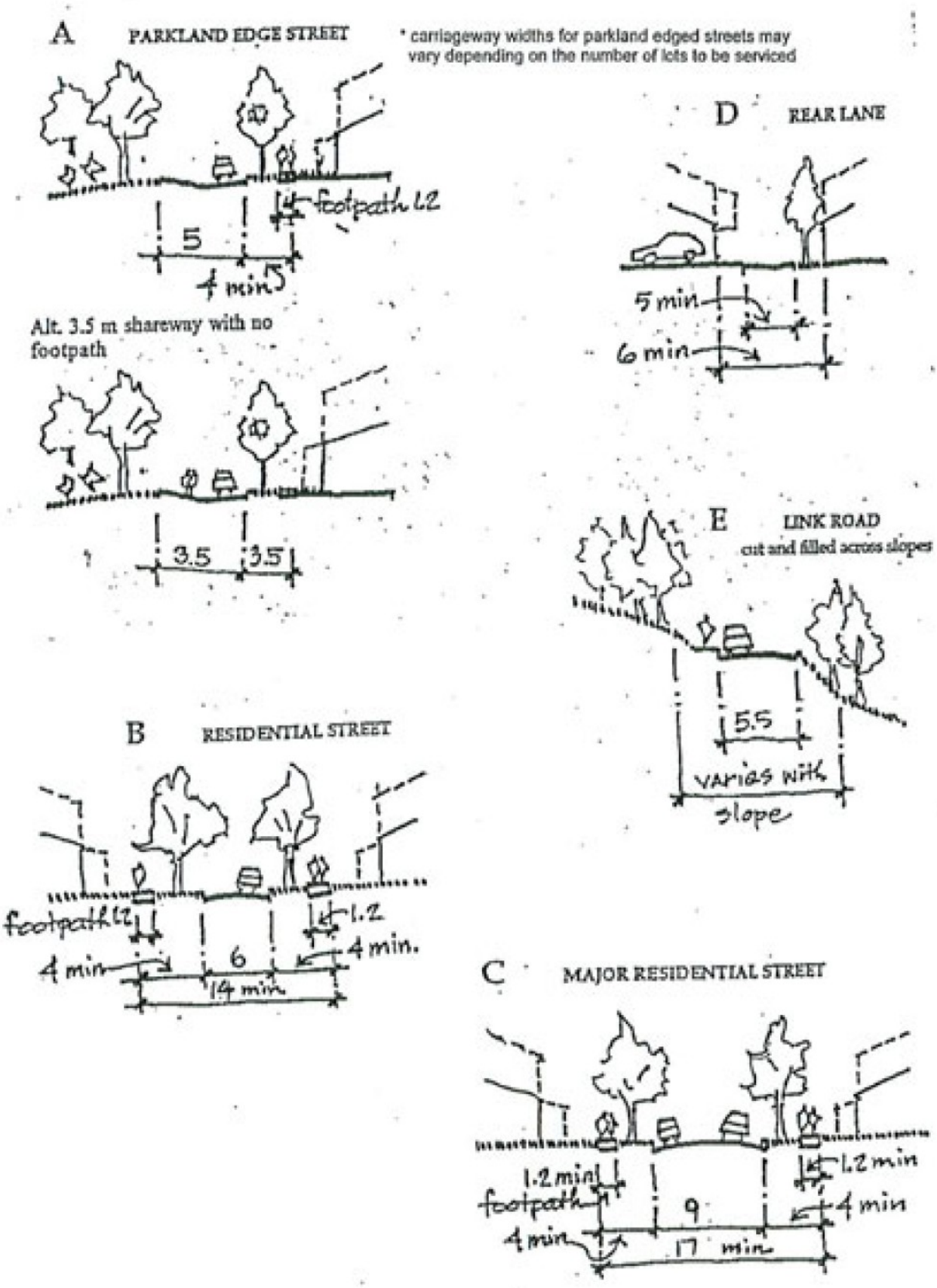


Figure A13.12 - Street Layout and Intersection Treatments

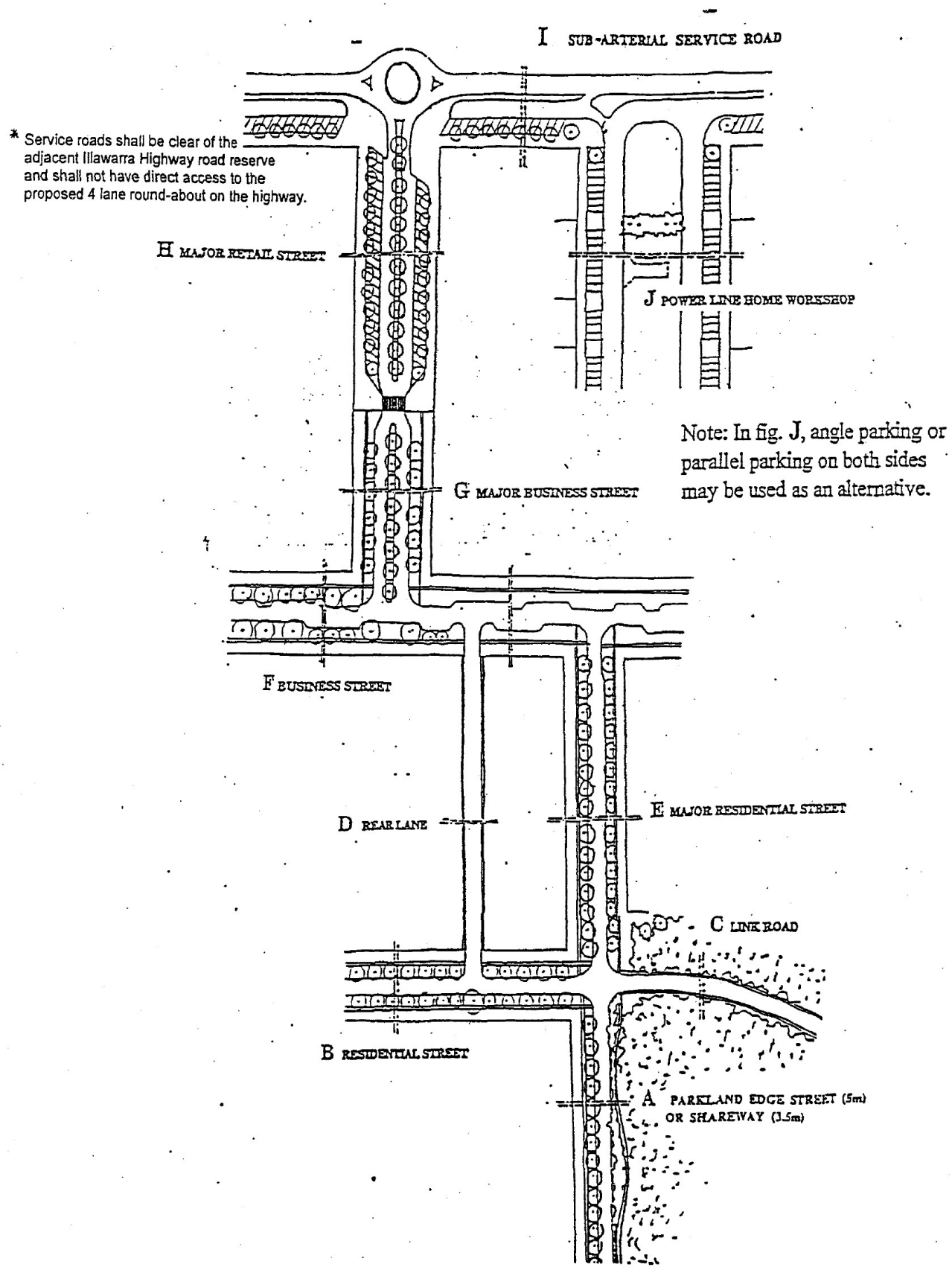
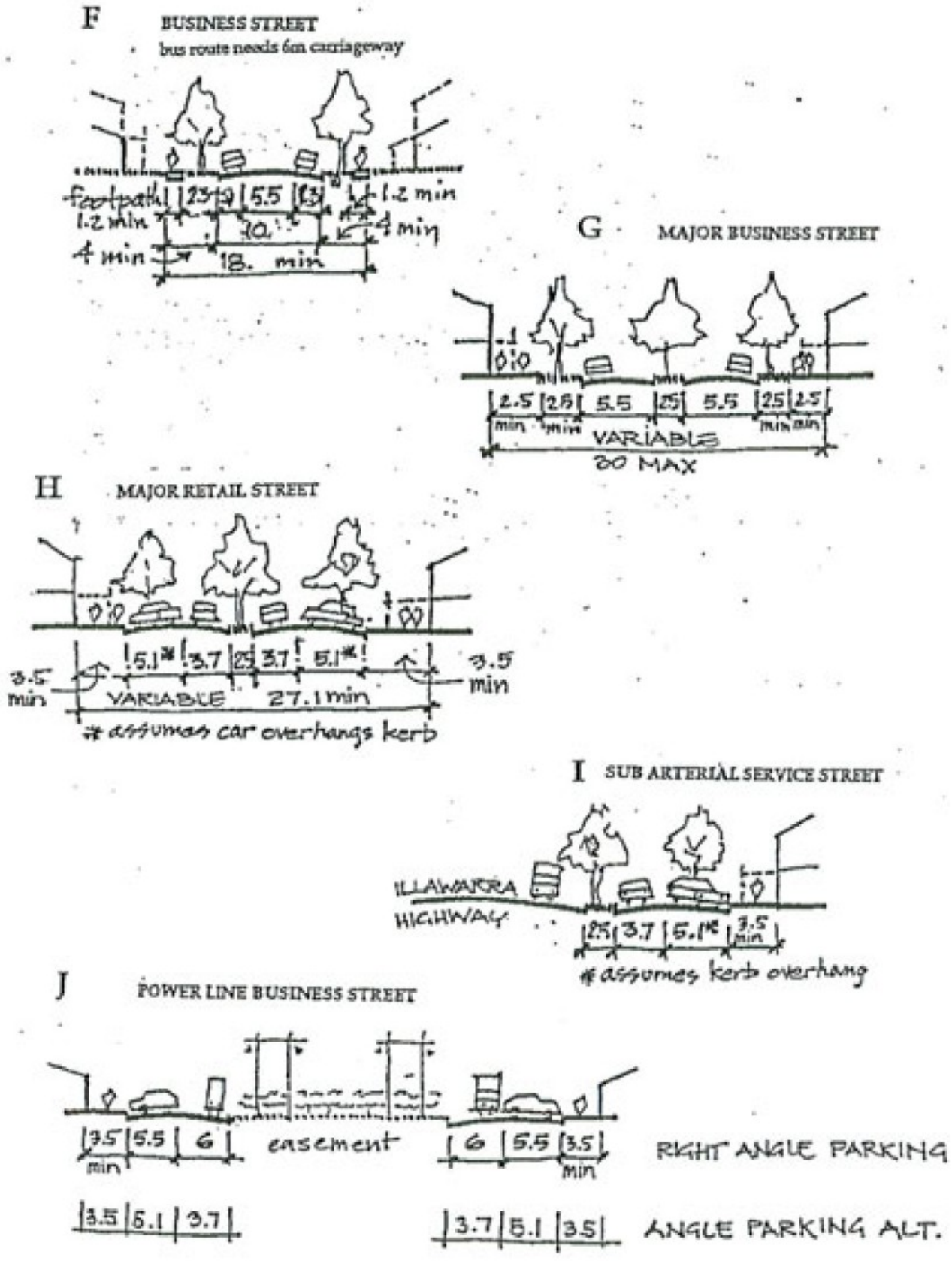


Figure A13.13 - Village Centre Street Types



A13.16 - Lot density and configuration

Objectives

1. To achieve a minimum dwelling yield for the urban area of 1500 dwellings in order to support a primary school and other facilities.
2. To concentrate the higher density development into areas of closer proximity to the village centre, neighbourhood centres and public transport stops.
3. To encourage a lower density in areas not within walking distance of a village or neighbourhood centre.
4. To define minimum dwelling yields for various precincts throughout the development.
5. To specify the location and extent of multi-unit development and dual occupancies in all low and medium density residential precincts in the initial build-out phase of the Tullimbar Village.
6. To achieve a diversity of lot types and sizes within each precinct to suit a variety of dwelling and household types, with area and dimensions that meet user requirements.
7. To provide lots which are orientated and dimensioned to support low energy housing and micro climate management.
8. To provides lots with area and dimensions that protect environmental features and take into account site constraints.
9. To arrange lots to front streets, parkland and rural edges such that development supports community safety and contributes to streetscape and park quality.
10. To provide lot and street layouts which use land efficiently and facilitate higher development density, particularly around village and neighbourhood centres and public transport stops.
11. To apply Building and Access Guidelines (BAGs) to all lots to enable efficient use of sites, ensure streetscape and neighbourhood amenity and parking optimisation (see section on Building & Access Guidelines in this Appendix).
12. To provide lots in appropriate locations which are suited to local business development so as to reduce travel and provide jobs.

ADVICE

A13.16.1 In order to achieve the minimum dwelling yield for the Tullimbar Village, requirements for minimum dwelling yields for each precinct are specified in **Figure A13.14**. *Minimum Development Yield and Dwelling Density for each Precinct.* The following table provides an example of a range of lot sizes that could be used in each precinct (refer to section on Tullimbar Village Urban Development Precincts and **Figure A13.2** for an explanation of precincts) to achieve a minimum 1500 dwelling yield.

Table A13.2

Range of lot sizes that may be used in each precinct to achieve 1500 lots in the Village

	Precinct	Examples of Dwelling Yields or Average Lot Sizes Used to Achieve A Minimum 1500 dwelling yield
	VCMU1, VCR1 & VCR2	Min. 40 dwellings above retail or commercial, or integrated with business use
	VCMU2	Min. 115 dwellings or HBBs @ av. 12m frontage
	VCEMU	Min. 10 home workspace dwellings @ av. 18m frontage
	MDR1, MDR2, MDR3	Average lot size of 360m2
	MDR4, MDR5, MDR6, MDR9	Average lot size of 390m2
	MDR2, MDR3, MDR7, MDR8	Average lot size of 420m2
	LDR1, LDR2, LDR3, LDR4, LDR5 LDR7, LDR9	Average lot size of 540m2
	LDR6, LDR8	Average lot size of 600m2

It should be noted that the aim for Tullimbar Village, within the objectives of this Appendix, is to achieve a higher dwelling yield than 1500. This will be achieved by, where appropriate, reducing the average lots sizes stated in the above ***Table A13.2****.*

A13.16.2 Higher dwelling yields are encouraged in the precincts within 400 metres of the Village or neighbourhood centres (refer to **Figure A13.7** for radii).

A13.16.3 Where development is staged within the precincts and early stages are proposed that do not achieve their share of the minimum dwelling yield for the precinct, information should accompany the proposal to outline any site-specific factors as to why the yield is not achieved, together with a strategy and commitment to reach the overall yield with the later stages.

A13.16.4 Studio units provided as a secondary dwelling within a single lot are encouraged but are not counted toward dwelling yields.

A13.16.5 Lots sizes and types must provide for housing diversity and choice, to meet the requirements of people with different housing needs, and to satisfy the minimum precinct density. Design suggestions for higher density small lot layouts are provided in **Figure A13.15** *Lot Layout to Achieve a Site Density of around 15 Dwellings per Hectare (420m^2 average lot size)* and **Figure A13.16** *Lot Layout to achieve a Site Density of around 22 Dwellings per hectare (295m^2 average lot size).*

A13.16.6 Single housing lots must have appropriate area and dimension to enable efficient siting and construction of a dwelling and ancillary outbuildings, provision of private outdoor space, convenient vehicle access to a public street and adequate parking. Such parking and access must be designed to minimise car parking dominating street frontage and optimising on-street parking capacity. Garaging for smaller and narrower lots is generally to be provided from rear lanes.

A13.16.7 Lots must be orientated and dimensioned to facilitate siting of dwellings to take advantage of winter solar access and summer sun deflection by:

a. ensuring the long axes of lots are generally within the range of N20°W to N30°E, or E20°N to E30°S; and

b. the dimensions of lots adequate to protect solar access on site taking into account likely dwelling size and siting, relationship of each lot to the street and abutting dwellings, and the need for cross-ventilation and implementation of landscaping.

Design suggestions for lots suited for capturing solar access are included in **Figure A13.17** *Design Suggestion: Lot Layout and Building Siting for Solar Access.*

A13.16.8 Lots must have a size and dimension to enable dwellings to be sited to:

a. protect important trees or other natural or cultural features;

b. acknowledge site constraints including soil erosion, drainage, slope or bushfire risk;

c. provide space for appropriate planting to assist with microclimate management and energy conservation.

A13.16.9 Lots must be arranged to enable dwellings to front streets to provide surveillance of footpaths and streetscape amenity and to facilitate business and home business development. All lots along the Illawarra Highway must front a service road except at intersections where side street access may be provided.

A13.16.10 Lots must be orientated to enable dwellings to front parks to enhance the amenity and safety of the park. This may be achieved by fronting public open space across a street or fronting a footpath with vehicle access provided to the side or rear by battleaxe lots or laneways. (Refer to Lot Layout Design suggestions in **Figures A13.9 & A13.10** for dwellings abutting parks and bushland).

A13.16.11 Battle-axe lots will only be supported where they front either bushland or creek reserves or public open space. Minimum driveway widths are 3m. Reciprocal rights-of-way are encouraged to minimise carriageway widths.

A13.16.12 Building and Access Guidelines (BAGs) must be specified for all lots in accordance with the section on Building and Access Guidelines.

A13.16.13 Lots intended for multi-dwellings (including dual occupancies) in all low and medium density residential precincts and their indicative dwelling yields must be identified on subdivision plans.

Figure A13.14 - Minimum Dwelling Yield for Each Precinct to Ensure a Minimum Yield of 1500 Dwellings for the Valley (NB This plan includes lands to which this Appendix does not apply)

NOTE: Much greater development potential will be possible in some precincts.

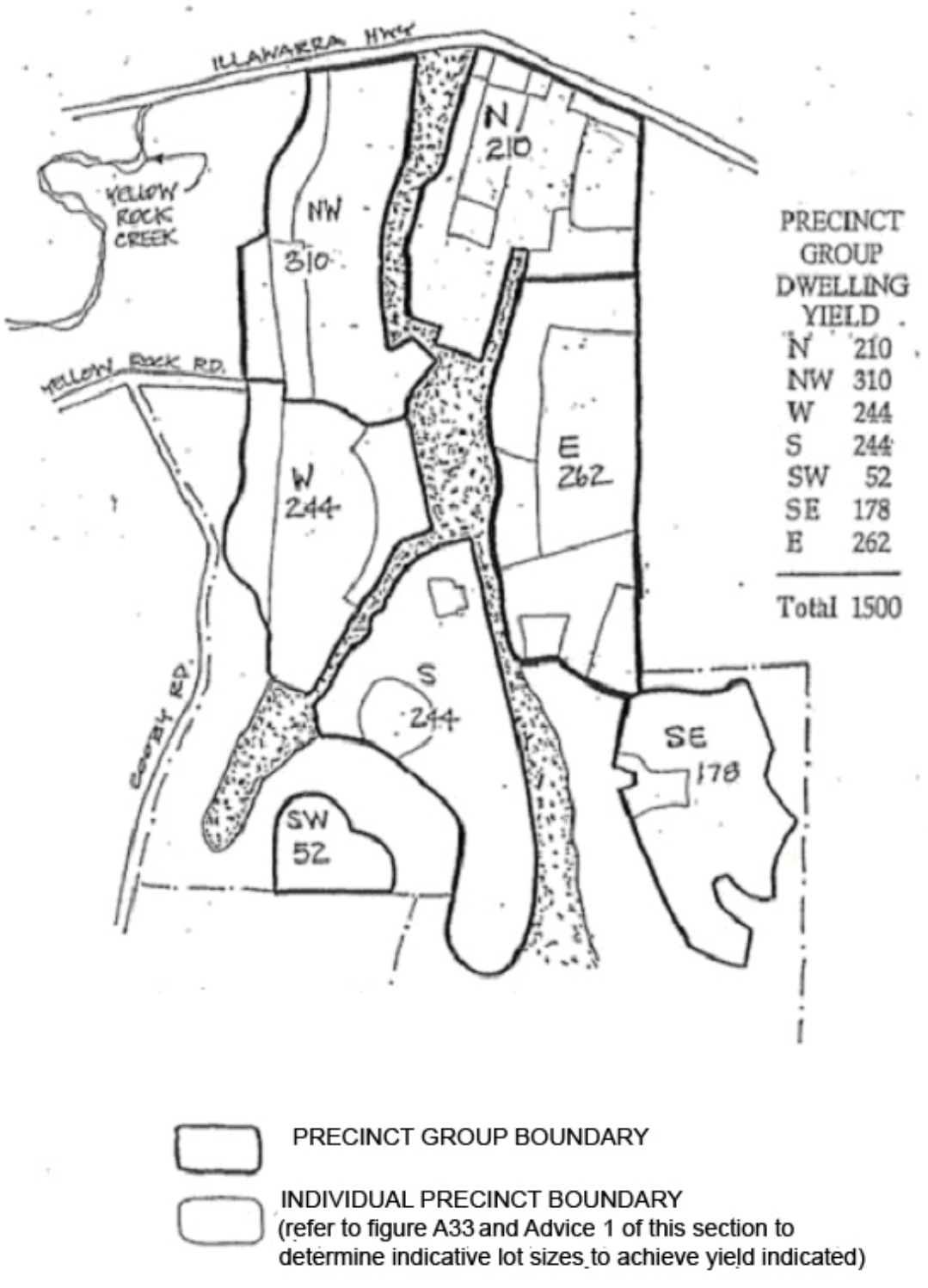
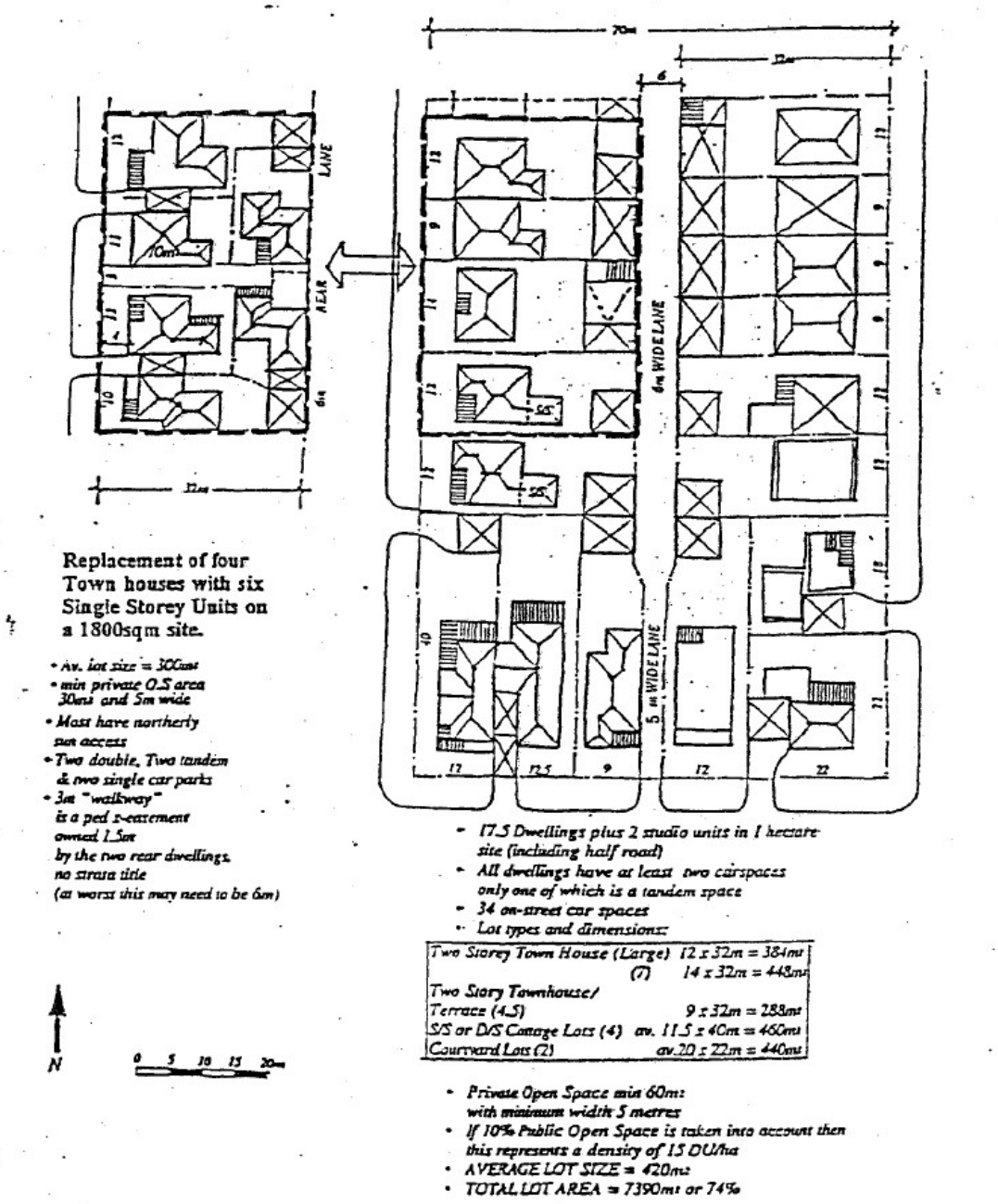


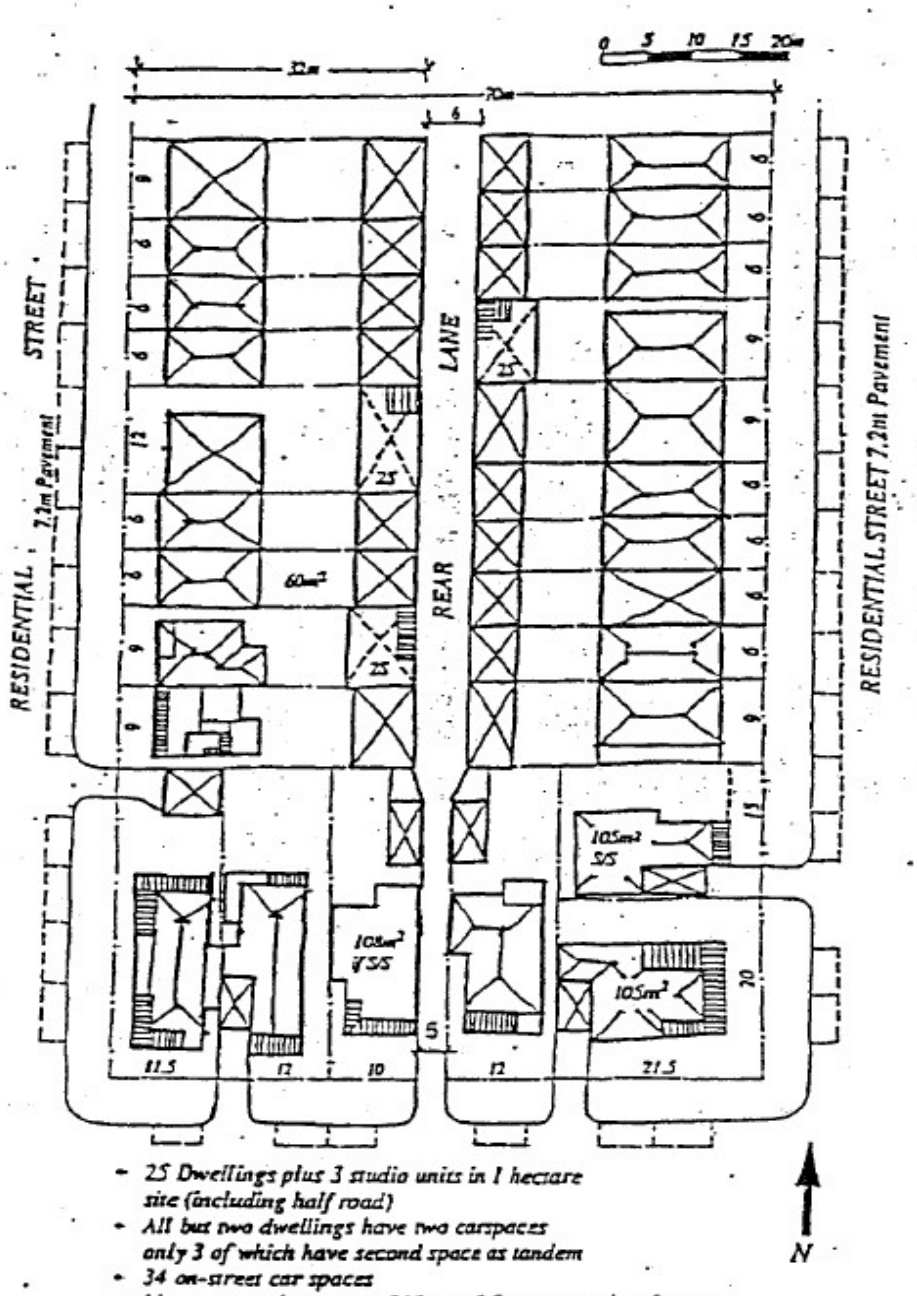
Figure A13.15 - Design Suggestion: Lot layout to achieve a Site Density of around 15 Dwellings per Hectare (420 sqm average lot size)



This lot layout (upper right) achieves a site density of around 15 dwellings per hectare, with an average lot size of 420sqm. Although a rear lane, as shown, is beneficial at this density, (particularly if many residents build double garages and reasonable on-street parking capacity is needed), it is not imperative, as lot widths could be adjusted to a minimum lot width of 9.5m, and single garages with tandem parking provided.

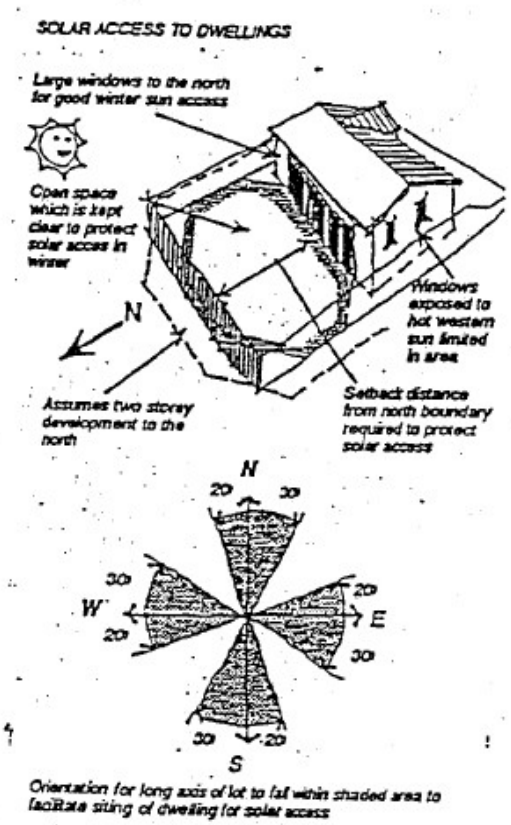
The plan at upper left shows the four lots highlighted in the main plan alternatively developed for six elderly persons' units at an average lot size of 300sqm. This plan demonstrates how such group dwelling sites can be inserted into a 'terrace' style layout, to achieve a good yield and Streetscape, with most dwellings fronting the street and most garages off the lane. This unit development brings the average lot size for the whole one hectare site down to 380sqm.

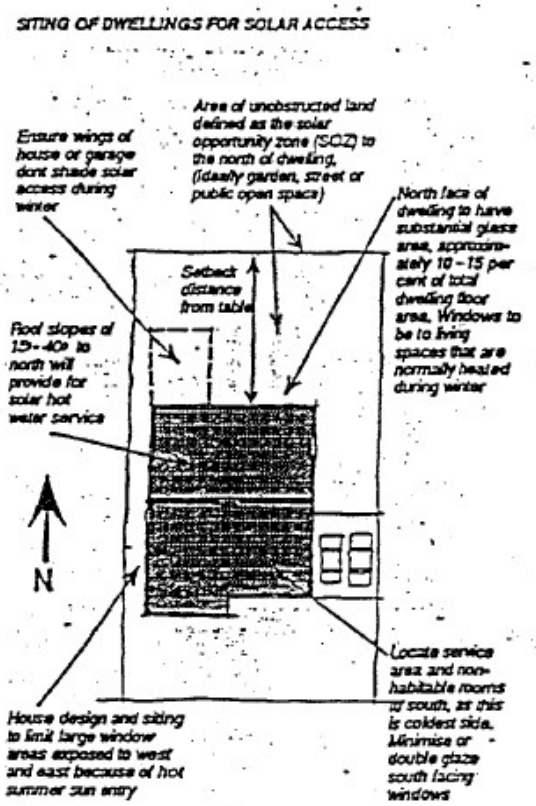
Figure A13.16 - Design Suggestion: Lot Layout to achieve a Site Density of around 22 Dwellings per hectare (295 sqm average lot size)

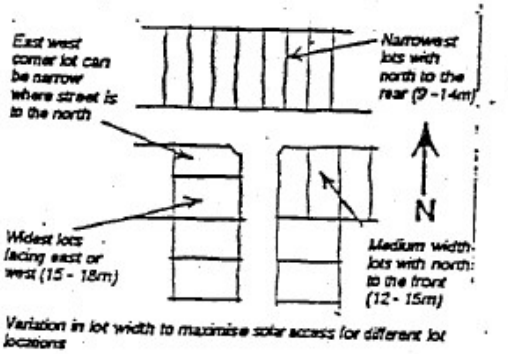


This alternative lot layout on the same one hectare site achieves a site density of around 22 dwellings per hectare, with an average lot size of 295sqm and easily justifies a back lane.

Figure A13.17 - Design Suggestion: Lot Layout and Building Siting for Solar Access







SETBACK OF NORTH WALL FROM NORTH BOUNDARY OF SOLAR LOT

LOT WIDTH	Nth rear boundary*		Nth side boundary#		Nth front boundary–
	MIN - IDEAL		MIN - IDEAL		MIN–
9m	9m - 11m				6m
10m	7m - 11m				5m
11m	7m - 11m				5m
12m	6m - 9m		6m - 9m		4m
13m	6m - 9m		6m - 9m		4m
14m	6m - 9m		6m - 9m		4m
15m	6m - 9m		6m - 9m		4m

* Assumes length of north glass at ground floor is equal to lot width less 2m and two storey development permitted within 1.7m of north boundary on adjacent lot.

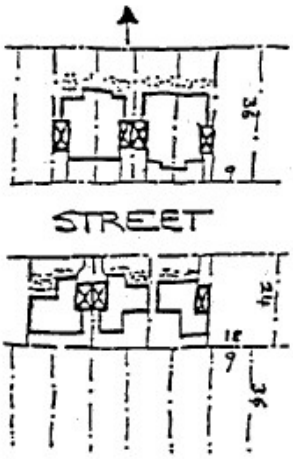
Assumes a minimum length of 10m of north glass at ground floor and two storey development permitted on adjacent lot within 1.7m of north boundary.

– Provides adequate setback to protect window from shadowing by tall front or side fences and assumes solar access from the street.

Low figure in setback range is equivalent to 3 star rating. Higher figure is ideal for solar access. All north glass is assumed to be full floor to ceiling height. If sills of 0.9m are used, but area of glass retained at or 10 - 15 per cent of dwelling floor area, distance may be reduced.

Lot Layout Option

A better solution for North-South lots is long narrow lots to the north of the street developed as semi-detached houses fronting short wide lots to the south with windows to the street.



A13.17 - Building Access Guidelines (BAG's)

This Appendix introduces a new concept called Building Access Guidelines (BAGs) to help achieve both efficient use of land and high quality urban design. BAGs must be identified for lots within a subdivision with an area of less than 450m^2. They will show details of proposed building envelopes and vehicle access points. This section outlines the objectives and for the preparation of BAGs.

Objectives

1. To enable efficient use of all sites, including special sites and mixed use development sites, and to optimise streetscape values, neighbourhood amenity and parking.
2. To encourage diverse housing forms (including varied size and dwelling types, mixed use buildings, home business, home workspaces and studio units) in appropriate locations.
3. To promote development of smaller residential lots by enabling approval of BAGs instead of requiring approval of dwellings.
4. To ensure that lot purchasers are aware of BAGs that apply to that and adjoining lands.

ADVICE

A13.17.1 Building Access Guidelines (BAGs) must be prepared for all lots with an area less than 450m^2. They must be specified on plans of subdivision and land title documentation and be available to lot purchasers as part of the contracts of sale. **Figure A13.18 and Table A13.3** provides an example of the range of matters that may be included in the BAGs.

A13.17.2 Building Access Guidelines must, as a minimum, provide details of building envelopes and appropriate car parking and vehicle access points. The BAGs must encourage building to side and rear boundaries wherever practical and satisfy the following matters:

a. visual and acoustic privacy;
b. street and property surveillance;
c. adequate day-lighting;
d. solar access for amenity and energy efficiency;
e. useable private recreational open space;
f. amenity protection for adjoining dwellings;
g. adequate protection of views;
h. streetscape quality and neighbourhood character;
i. adequate car parking and vehicle access, limiting access to main roads; and
j. protection or other response to any specific site features such as trees.

A13.17.3 The vehicle and access issues outlined above will require the minimisation of car parking dominating street frontage, providing safe access and optimising on-street parking capacity. This may generally be achieved by:

a. setting garages back at least 5 metres from the primary street frontage and behind the frontage of the dwelling;

b. limiting single garages to lots 9.5 metres or wider fronting streets with pavements 7 metres or wider, and to 10 metres or wider on pavements of less than 7 metres;

c. ensuring that rear lanes are used for garage access where provided. This should be where most of the lot widths are less than 10 metres or where lot widths are less than 12 to 14 metres and double garages are likely to predominate;

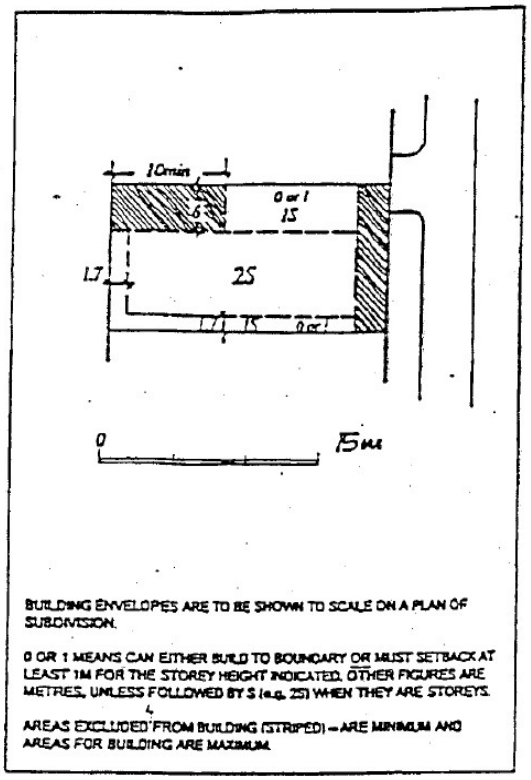
d. taking advantage of slope to locate garages under houses; and

e. requiring suitable alternatives for dwellings fronting the Illawarra Highway so vehicles do not back out into highway traffic.

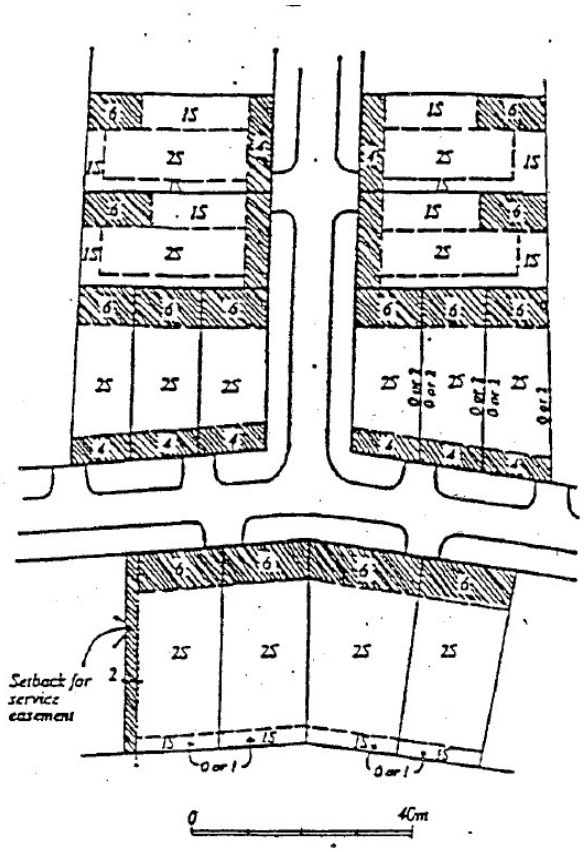
A13.17.4 All lots identified on the Tullimbar Village Structure Plan as specifically suited to home workspaces (in VCEMU and MDR1) have appropriate BAGs applied to ensure that development of street front or rear lot home workspace buildings is both possible and encouraged.

A13.17.5 BAGs may specify mandatory provisions of a minimum level of development. This may include provision of some living space built above selected garages at the rear of lots abutting laneways, to ensure adequate surveillance of the land; or double-storey dwellings specific at key street junctions.

Figure A13.18 - An example of a Building and Access Guideline Specification



Terminology and graphic representation for building and access guidelines.



Notes to indicative precinct plan

1. Driveways are to be located in the positions shown to protect the streets' terminating vista, to facilitate maneuverability in narrow streets and to optimise on-street parking capacity.
2. All garages set back 5m minimum from street frontage. Double garages permitted only on lots 15m or wider. Garages must not project forward of dwelling frontage.
3. Living room to face north setback area of 6m minimum depth, with windows a minimum of 7m long. Eaves or verandas of 1m minimum width to shelter windows.
4. Verandas and porches may project up to 3m forward of dwelling frontage setback line on south lots and up to 2m forward on north lots and east-west lots.
5. Fences: South and east-west facing lots have front fences to a maximum height of 1.2m. North-facing lots may have fences to 1.5m high along the whole frontage if >50% transparent, or solid for up to 1.8m high for 30% of the frontage, with the remainder 1.2m max.
6. The areas shown as open space are minimums; and the areas shown as buildings are maximums. An area of 40 sqm, with minimum dimension 5m, must be provided at the side or rear of dwelling.
7. Wall heights: Maximum wall height for single storey on boundary is 3.3m. Maximum wall height for double storey on and off boundaries is 6.3m.
8. Overall building height maximum 9.5 metres.
9. These BAGs apply to construction commenced within 3 years of final subdivision approval and expire within 5 years of it.
10. Variation of BAGs is not permitted, except with written approval from local government after it has consulted with abutting lot owners.

Table A13.3 - Possible Scope of Building and Access Guidelines

Possible Scope of Building & Access Guidelines	
Building Envelope	• front, side and rear setbacks • build-to-boundary areas • wall and building heights • wall articulation • wall setback from north boundary to gain solar access into living room windows
Building Details	• dwelling frontage orientation • window location for street surveillance and privacy • roof form, style elements • wall and roof colours and materials
Energy Efficiency	• north window location and size • shading from hot summer sun
Parking	• number of car spaces • garage location, size and setbacks • vehicle access point
Private Open Space	• location and minimum dimensions • qualities
Fencing	• Heights, materials, detailing • Retaining walls
Services	• easement setbacks, stormwater, air conditioners
Landscaping	• protection of existing trees
Noise-buffering	• dwelling design and detailing to protect from external noise • provision of noise-buffering walls for home work spaces
Ancillary Dwellings/Studio Dwellings, Home Business or Home-Work Space	• potential and location • mandatory rear studio units on specified lots
Storage Space	• potential location and size
Sitting on Lot in Relation to Slope, Retaining Walls, Cut & Fill	
Encroachments	• porches and verandahs • utilities • reciprocal right-of-ways, party walls
Sunset clause for applicable Building & Access Guidelines	
Variation mechanism for Building & Access Guidelines	

A13.18 - Village and neighbourhood centres

Objectives

1. To facilitate provision of local retail and commercial services, small businesses and local employment in the Tullimbar Village.
2. To encourage the development of a mixed use village centre in the northern part of the site, and to provide for village centre retail, business, mixed use and medium density development generally in accord with the Structure Plan and Precinct Plan.
3. To encourage the development of two smaller neighbourhood centres in the southern valley and on the central plateau, in accord with the Structure Plan and Precinct Plan.
4. To provide lots particularly suited to home businesses and home workspaces in appropriate areas of the village.
5. To provide opportunity for development of a multi-purpose recreation/convention centre on an attractive site in or abutting the village.

ADVICE

A13.18.1 Land must be set aside and designated for non-residential and mixed uses generally in accord with **Figure A13.19**. *Village and Neighbourhood Centres and other Business and Employment Areas*. A site for a supermarket of between 800m^2 and 1200m^2 of gross floor area is to be provided in the VCR1 precinct, preferably located on the north-east corner of the main intersection.

A13.18.2 Adequate lots must be provided for non-residential or mixed use development in the village and neighbourhood centre precincts to facilitate business and employment generation. This may be achieved by:

a. designating lots and their usages generally in accord with the structure plan;

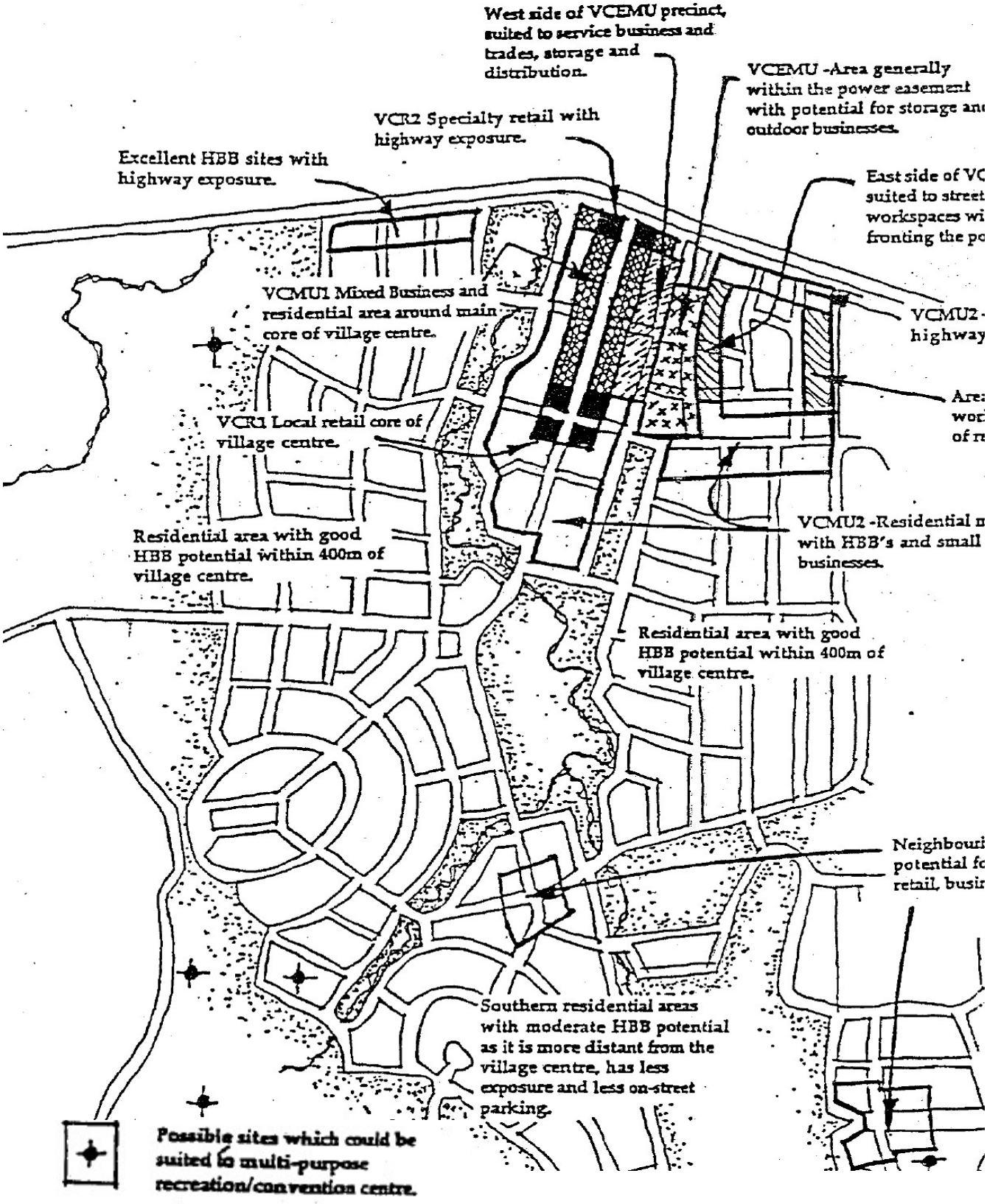
b. ensuring that mixed use lots initially developed for housing have the capacity to efficiently convert to or add a business use.

A13.18.3 Provision of conventional residential lots must be minimised within the village and neighbourhood centres unless detailed with Building and Access Guidelines that facilitate future intensification and/or conversion to mixed use.

A13.18.4 Larger lots for business or mixed use purposes may be provided as super lots. Applications for such lots must either incorporate appropriate Building and Access Guidelines or be accompanied by an indicative re-subdivision and building layout to demonstrate that appropriate buildings can be constructed efficiently.

A13.18.5 An area of land approximately 5 hectares in size may be identified in a low density residential precinct for a multi-purpose recreation/convention centre. Any such centre should be located and accessed so that patrons and workers pass through the village centre to reach it.

Figure A13.19 - Village and Neighbourhood Centres and other Business and Employment Areas (NB This plan includes lands to which this Appendix does not apply)



A13.19 - Review

This Appendix provides an indication of the considerations that Council would make in assessing an application for subdivision submitted for its approval. It is intended that, once procedures and have been put in place in accordance with the provisions of the Environmental Planning and Assessment Amendment Bill, 1997, the document will be reviewed to incorporate guidelines for development subsequent to subdivision.

It is anticipated that, the review of the document will incorporate or refer to the following:

- Urban Design Guidelines
- Mixed Use Guidelines
- Housing Guidelines
- DA requirements and Processes
- Checklists for Applications