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Part A Waterside

A. Background

This section of the DCP applies to Waterside, which includes both the employment and residential components as identified in Figure E3.1.

Waterside is a 54 hectare residential and employment precinct located approximately 2km north of Penrith City Centre and adjacent to the Penrith Lakes Scheme.

The locality is characterised by a mix of residential, industrial and recreational uses. Large industrial activities are located to the south on the opposite side of Andrews Road. Grey Gums Reserve is located immediately to the east of the site with the residential suburb of Cranebrook located further to the east. The Penrith Lakes Scheme, including the Sydney International Regatta Centre and the White Water Stadium, are located to the west on the opposite side of Castlereagh Road.

3.1 Waterside Corporate

3.1.1 Preliminary

3.1.1.1 Purpose of this Section

The purpose of this Section is to guide development of the Waterside Corporate Precinct.

3.1.1.2 Land to which this Section Applies

This section applies to the land shown on Figure E3.1 below.

3.1.2.3 General Objectives

A. General Objectives

a) To provide a clear planning framework for development of the site;

b) To maintain and enhance the views through and across the subject land to the Penrith Lakes, the Nepean River and the Mountains;

c) To encourage development that enhances the area's gateway location to Penrith and Penrith Lakes;

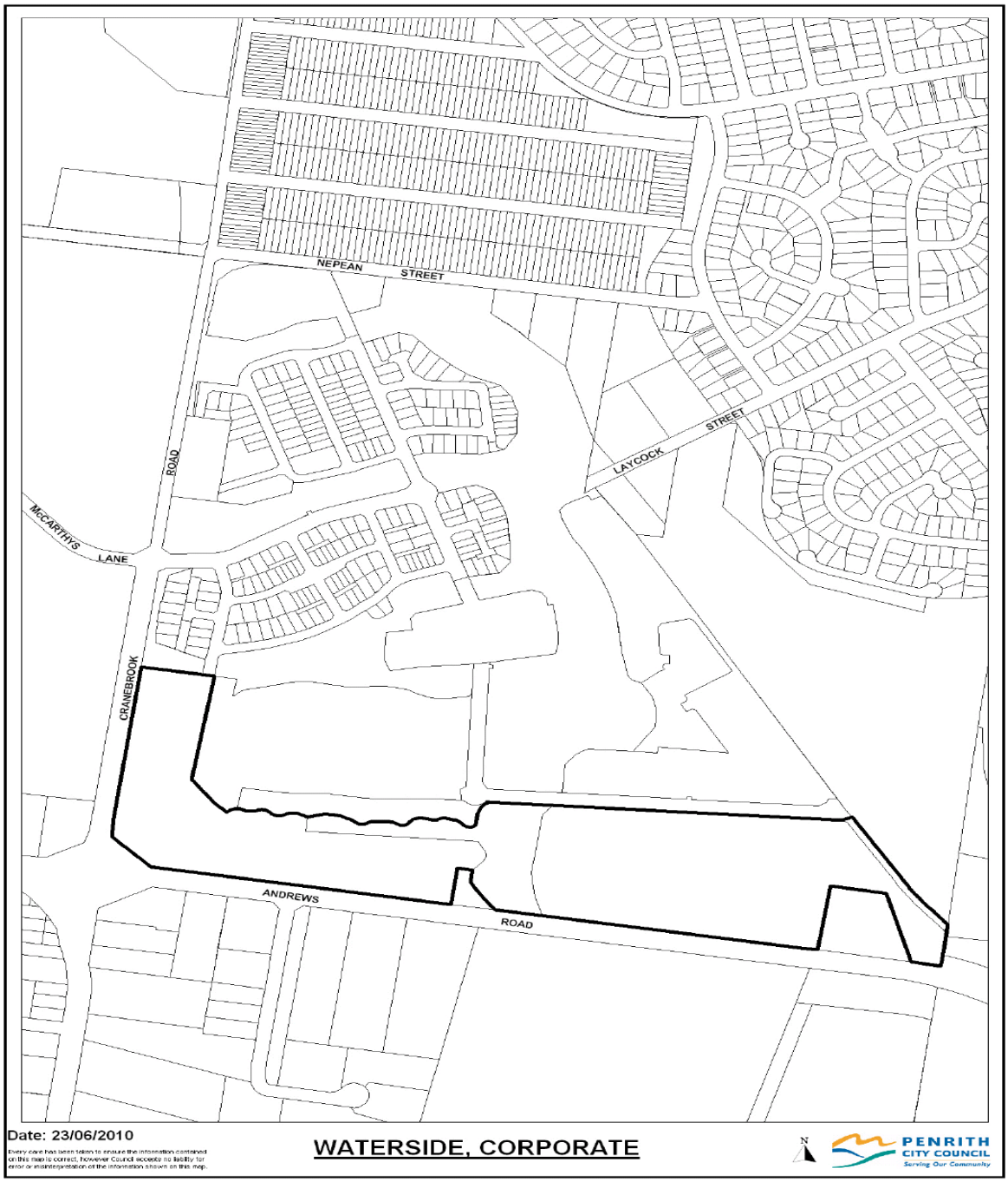
d) To minimise any adverse impact to residential development from noise as a result of industrial development;

e) To manage stormwater runoff, water quality and flooding in a safe, effective and environmentally responsible manner;

f) To provide opportunities for employment, visitor accommodation, child care facilities, neighbourhood shops and community facilities; and

g) To ensure the visual quality and the operating function of Waterside Corporate and the lakes system complement future development in the adjoining residential zone and achieve an appropriate and suitable interface between the two zones.

Figure E3.1: Land to which the 'Waterside Corporate' Part applies.

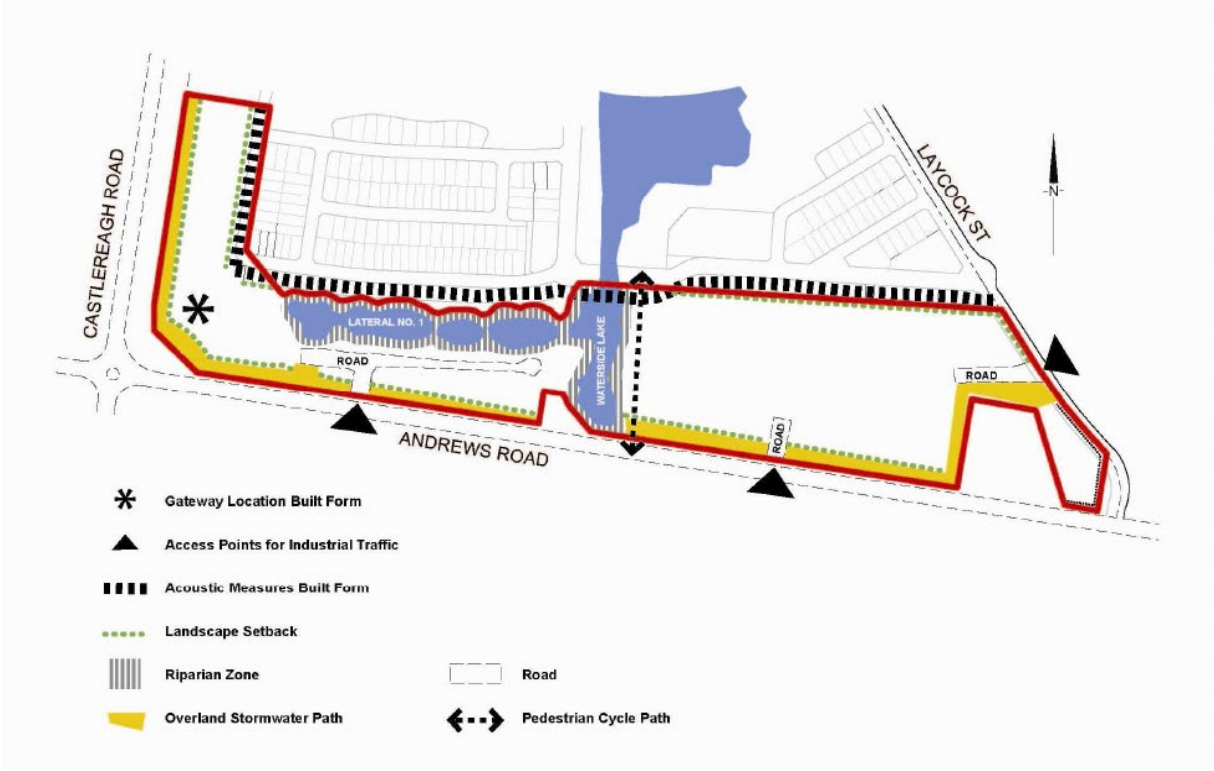


3.1.2 Site layout

The site is to be developed generally in accordance with the Key Design Elements shown in Figure E3.2: Key design Elements (Waterside Corporate). Council will consider variations to

this layout where it can be demonstrated that the objectives of this section of the DCP can be met.

Figure E3.2: Key Design Elements (Waterside Corporate)



3.1.3 Site development controls

3.1.3.1 Floodway and lake system

A. Objectives

a) To ensure development of the site is compatible with the flooding characteristics of the locality;

b) To ensure no adverse impact from flooding is experienced upstream and downstream as a result of development of this land; and

c) To ensure that development is appropriately protected from flood inundation.

B. Controls

1) The floodway and lake system shall be located generally in accordance with Figure E3.2: Key Design Elements (Waterside Corporate).

2) The floodway/main lake system shall have a width no less than that determined by Council having considered both flood conveyance requirements and modelled pre/post development flood impacts/variances for the 1% AEP (Annual Exceedance Probability), 0.5% AEP and 0.2% AEP local catchment and Nepean River flood events.

3) The lakes and lake foreshores (particularly the depth and grading) shall be designed to maximise safety.

4) Habitats, including islands, shall be constructed in each of the major lakes generally as indicated in Figure E3.2: Key Design Elements (Waterside Corporate) to provide habitat for local flora and fauna.

5) The floodway and lake system and their habitats are to be constructed and operated so as not to be conducive to mosquito breeding.

6) A recirculation system for the lakes shall be provided. The system must comprise components which will:

   a) Minimise the likelihood of stratification of lakes, if this is necessary due to lake depth; and

   b) Allow for full or partial draining of the lakes for maintenance purposes.

3.1.3.2 Catchment water quality

A. Objectives

a) To ensure that an adequate and environmentally sustainable method of controlling surface water and storm water is implemented;

b) To ensure appropriate water quality standards are maintained throughout the system and that post development water quality is an improvement on pre development water quality;

c) To maintain adequate water quality levels throughout the lakes system at all times; and

d) To ensure that water quality standards are not compromised for the lakes system.

B. Controls

1) Water quality is to be improved and maintained by every proposed development.

2) Adequate velocity and the controlled flow of water through the system shall be maintained at all times, to ensure the quality of the water and to reduce mosquito populations.

3) Water quality shall be enhanced by trapping and removing all debris. Gross pollutant traps are to be provided where the floodway enters the property at the Andrews Road boundary and where drainage from the south western corner of the public reserve enters the property at its eastern boundary.

4) Macrophyte planting is to be provided around the perimeter of the lakes to assist in the filtering of nutrients.

5) The use of fertilisers and other sources of nutrients may adversely impact on water quality and shall be minimised.

6) A process for monitoring the quality of discharges from this land is required to ensure system performance is maintained. This process, and agreed outcomes, shall be established through negotiation with the Penrith Lakes Development Corporation, Council, Department of Environment, Climate Change and Water. The monitoring process shall include maintenance of nutrient levels, and shall be undertaken on a regular basis. Details of the program shall be submitted with the development application/s for the construction of the lakes system.

3.1.3.3 Water quantity

A. Objectives

a) To ensure adequate circulation and stable water levels through the lake system and branch waterways.

B. Controls

1) A permanent water level shall be maintained within the lakes and lateral waterways.

2) An internal pumping system must be installed to enable the pumping of water between lakes, and the maintenance of water quality.

3) The pump system shall be enclosed, or provided with acoustic treatment or barriers, to ensure residents are not affected by the noise generated by its operation.

4) Water levels in the lakes and all laterals shall comply with the approved Water Management Plan (see 3.1.3.4 control (3)(c)).

3.1.3.4 Management of the lakes system

A. Objectives

a) To ensure the maintenance of the water management system (floodway, lakes, lateral waterways and stormwater drainage) to appropriate design and environmental standards; and

b) To encourage innovative design solutions to complement the management of water within the catchment.

B. Controls

1) A management plan for the regular maintenance of the lakes system shall be established and enforced. This shall include regular mowing and maintenance of the verges, pruning, structural and operational maintenance of the system, dewatering and desilting the lakes and ponds, and removal and replanting of the macrophytes as required.

2) Council shall not issue development consent for a proposal to subdivide or develop the site unless satisfactory arrangements have been made with Council for the ongoing maintenance and management of the lakes system.

3) As part of a development application submitted for construction of the lakes system, the following issues must be addressed:

   a) A proposal, which outlines the agreed responsibilities of all relevant parties, for the ownership and management of the lakes system. Satisfactory arrangements regarding this matter must be achieved prior to granting development consent for construction of the lakes system or subdivision of land;

   b) Means of improving water quality compared with existing water quality (at the time of submission), and the proposed water quality monitoring regime; and

   c) A Water Management Plan for the maintenance of the lakes system, including a schedule of proposed maintenance activities, annualized operational costs, and capital replacement costs. The Water Management Plan should also address:

      i) The water quality and quantity discharge details, including expected changes in water quality and quantity to the existing system due to development (low flows, high flows, total over average rainfall year);

      ii) A plan for monitoring the quality of water discharge from the site;

      iii) The management of pollutants, such as oils, grass clippings, etc;

      iv) The control of exotic flora and fauna;

      v) Stormwater controls;

      vi) Groundwater effects (including any plans to draw from the groundwater for supply);

      vii) Sewer requirements (impact on existing sewer system and lake system);

      viii) Emergency controls;

      ix) The handling of water during the various stages of construction, as well as the final system (including site water management plan and sediment and erosion control measures);

      x) The incorporation of water management facilities;

      xi) The process of handling contaminated fill, if required;

      xii) Wastewater reuse and its impact on outflow (quality and quantity);

      xiii) Internal pumping and the impact on outflow;

      xiv) A Construction Management Plan in relation to leaching or deposition of materials into the lakes system and control of runoff;

      xv) A program for mosquito control; and

xvi) Any other relevant matter identified in this section.

3.1.4 Built form controls

3.1.4.1 Site and building works

A. Objectives

a) To ensure that development meets sound environmental and flood planning practices and standards;

b) To make adequate provision for stormwater runoff in and through Waterside; and

c) To ensure that any contaminated land found on the site is properly managed and remediated to a level appropriate for the subject development.

B. Controls

1) All buildings on the site shall be designed and built such that their structural integrity can withstand flood flows generated by a flood equivalent to the Nepean River 'Flood of Record'- equating to the 0.5% AEP Flood Event. Damage potential is to be determined considering flood duration, flood depth and flow velocity such that buildings do not sustain structural damage or loss of load bearing capacity following immersion. Council will be guided by reference to available documentation provided in the 'Nepean Floodplain Management Strategy' in its determination as to whether flood compatible building design and material selection have been adequately considered. Appropriate modelling and mapping is to be undertaken to determine those areas of the site, which when fully developed, would present landform/development characteristics where special flood compatible building design is required.

2) All lots should have their finished surface at least 0.5m above the 1% AEP flood level generated by local catchment or Nepean River flood flows, whichever generates the higher flood levels.

3) Where finished ground levels are not 0.5m above the 1% AEP flood event level, all floor levels shall be constructed a minimum of 0.5m above the flood level.

4) Finished surface and ground levels shall fall to property boundaries and along roads to achieve adequate drainage.

5) Stormwater from individual lots shall be captured and stored, where feasible, for future use in landscape maintenance. Dispersed points of discharge to the waterway system (using roads, paths or open spaces) shall be provided. This may include a piped drainage system and grassed swales through open space areas.

6) Roof and surface water not reused on each lot is to be discharged into the lake system in a controlled manner.

7) All stormwater being discharged into the lake system is to be free of harmful pollutants, contaminants, grass litter and biodegradable matter.

8) The stormwater system shall be designed and constructed in accordance with Council's engineering standards.

9) A Stage 2 Environmental Site Assessment must be submitted to Council as part of any development application for bulk earthworks.

10) Any contaminated land must be remediated in accordance with the land management requirements of this DCP.

3.1.4.2 Access and parking

A. Objectives

a) To ensure safe and functional vehicle access and parking arrangements;

b) To prevent direct vehicular access to or from any development and Castlereagh Road and/or Andrews Road;

c) To provide a functional link between Waterside Residential and Waterside Corporate but to discourage unnecessary commercial traffic movements through the residential zone; and

d) To ensure safe, accessible and functional pedestrian and bicycle movement.

B. Controls

1) The significant entries to Waterside Corporate shall be located generally in accordance with Figure E3.2: Key Design Elements (Waterside Corporate). The type, size and specific location of the entry must be supported by a detailed traffic analysis prepared by an appropriately qualified professional.

2) Roads within Waterside Corporate shall be constructed above the 1% AEP flood level.

3) Access to or from Andrews and Castlereagh Roads shall only be permitted via an approved road. Individual driveways for site-specific developments will not be permitted.

4) Access to or from the neighbourhood facilities will be via Road 3 as shown in Figure E3.2: Key Design Elements.

5) Bus bays/shelters are to be provided to specifications and at locations to be determined by Council.

6) An evacuation plan for Waterside Corporate shall be developed in conjunction with the State Emergency Service. Details of this plan shall be submitted to Council prior to occupation of any building.

7) Below ground parking is not permitted.

8) Parking within the front building setback may be considered where it can be shown that the objectives of Section 3.1.4.9 Landscaping and Open Space will be achieved.

9) Publicly accessible bicycle/pedestrian paths are to be provided as indicated in Figure E3.2: Key Design Elements (Waterside Corporate).

10) Pedestrian pathways and cycleways shall be linked to provide a safe, integrated and continuous pedestrian/cycle network around the lake system and within the site.

3.1.4.3 Acoustic requirements

A. Objectives

a) To minimise any adverse impact to residential development of noise from nearby industrial development; and

b) To ensure that the design of any acoustic measures contribute to the visual amenity of Waterside and are suitably integrated with the built form and landscaping of the site.

B. Controls

1) All development applications are to be accompanied by an acoustic report or noise impact statement prepared by a qualified acoustic consultant as follows:

   a) Where development is to provide the principal acoustic buffer between residential and industrial development, an acoustic report is required to demonstrate the development will satisfy the noise criteria of Waterside Clause of Penrith LEP 2010; and

   b) All other development proposals are to be accompanied by a noise impact statement prepared in accordance with and demonstrating compliance with the noise and vibration requirements of this DCP.

2) All acoustic measures must be designed to:

   a) be compatible with the flood characteristics of the estate;

   b) integrate with adjoining buildings;

   c) be aesthetically and visually pleasing;

   d) be compatible with the locality when viewed from both the residential and industrial areas of the estate;

   e) be constructed of robust and readily maintained materials that also minimise opportunities for vandalism;

   f) integrate with and accommodate the pedestrian/cycle network, riparian areas and landscaping within the estate; and

   g) creatively respond to site characteristics and constructed with visually permeable elements where they cross water bodies.

3.1.4.4 Streetscape

A. Objectives

a) To enable flexibility in building height and design to provide variety in facades and external appearance;

b) To ensure that development creates a varied streetscape consistent with the envisaged built form scale in the locality;

c) To ensure the design and appearance of buildings and/or development, particularly when viewed from the waterways, other public places and Cranebrook is of a high standard; and

d) To coordinate lighting design and solutions across Waterside Corporate.

B. Controls

1) Buildings adjacent to the residential zone are to be of a scale and design sympathetic to nearby residential dwellings.

2) Development adjacent to residential houses should reflect the change in both detailing and massing and should not overlook private open spaces.

3) Architectural design along Andrews Road should be of a high standard, utilising quality materials and finishes.

4) Development is to provide a general image of buildings within a green setting, through the combination of appropriate setbacks and landscaping.

5) The aesthetic appeal of the street is to be maintained while providing a primary service role for vehicular and pedestrian access.

6) Roof plant must be effectively screened from view.

7) To soften the effect of development, landscaping must be of an appropriate scale and size consistent with the bulk and scale of buildings.

8) Service areas are to be placed to the rear or side of buildings, unless it can be established that they will not impact adversely on visual amenity or the acoustic requirements of this Section.

9) An integrated design for lighting is to be implemented throughout the site that is also complementary to the Waterside Residential lands.

3.1.4.5 Building envelopes

A. Objectives

a) To provide a visual and supplementary acoustic barrier between residential and industrial development;

b) To enhance the views through and across the subject land to Penrith Lakes, the Nepean River and the Blue Mountains;

c) To provide quality urban design at an appropriate scale;

d) To provide appropriately landscaped setbacks to roads and along boundaries adjoining residential and riparian areas; and

e) To provide building envelopes consistent with the scale of adjoining development, the desired streetscape and future amenity of the locality.

B. Controls

1) The setbacks of buildings from the boundary are to be in accordance with Table E3.1: Building Setbacks below.

2) Minor variations in setbacks will be considered where they will contribute to a varied and attractive streetscape and do not compromise relevant objectives.

Table E3.1: Building setbacks

Location	Minimum setback
Andrews Road	10m
Castlereagh Road	10m
Laycock Street	9m
Buildings fronting secondary and internal roads	5m
Buildings on lots adjoining residential land and riparian corridors	5m

3.1.4.6 Built form – corner of Andrews and Castlereagh Roads

A. Objectives

a) To enhance the gateway location at the intersection of Andrews Road and Castlereagh Road through strong built forms;

b) To reflect the gateway location with well-designed buildings incorporating a strong corner element;

c) To provide built form with additional architectural emphasis, such as varied building height, distinctive roof forms, articulated wall elements and bold use of materials;

d) To provide a suitable acoustic barrier to residential development to the north; and

e) To ensure that car parking is not visually intrusive.

B. Controls

1) Buildings are to address Andrews and Castlereagh Roads.

2) Front facades are to provide visual interest through articulation and the use of architectural treatments such as projections, indentations and roof elements.

3) Elevations are to display a variety of different materials and textures but endeavour to have a cohesive outcome.

4) Parking is to be visually unobtrusive and blend in and respect the overall character of the built form.

5) Any multi-storey car parking is to be integrated into the built form and screened from public view by appropriate landscaping and creative use of materials, e.g. perforated screens.

3.1.4.7 Built form – Lateral 1

A. Objectives

a) To provide access arrangements, building orientation and building design that address the riparian corridor.

B. Controls

1) Buildings are to front Lateral 1.

2) The front and rear elevations of buildings are to provide visual interest through articulation and architectural treatments, such as projections, indentations and roof elements.

3) The Andrews Road frontage of this section of the site is to be densely planted to enhance the presentation of development.

3.1.4.8 Built form - neighbourhood facilities

A. Objectives

a) To provide a neighbourhood shop, cafes, restaurants and related facilities and services for the local residential community and workers in the locality;

b) To provide a destination and gathering point for the residential and worker community;

c) To provide a high level of connectivity for pedestrians and cyclists between the facilities and residential development and employment lands;

d) To provide active street frontages and consolidate activity around a central area; and

e) To ensure that parking is unobtrusive and suitably landscaped.

B. Controls

1) Any views to the lakes and riparian areas are to be maximised.

2) The neighbourhood facilities are to be linked into the broader cycle/pedestrian network.

3) Parking areas are to be interspersed with areas of landscaping to soften the visual expanse of hard paving.

3.1.4.9 Landscaping and open space

A. Objectives

a) To provide landscaping which screens and softens building mass and roof form, particularly when viewed from adjoining roads and surrounding areas;

b) To provide open spaces which are safe and inviting to use;

c) To ensure the grouping of landscaped areas between adjoining developments, consolidate open space areas and allow a greater density of tree planting; and

d) To provide high quality and consistent themed landscaping to Castlereagh Road and Andrews Road frontages of the site.

B. Controls

1) The design of open space areas and buildings shall enhance existing views and create opportunities for additional views within and through the site.

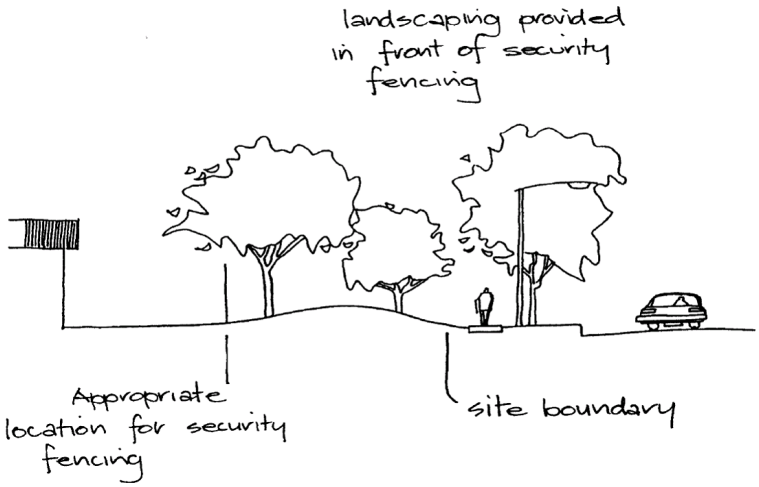
2) The front building setback and setbacks to all public areas must be landscaped to soften building mass and roof forms.

3) The building setback adjoining residential development must be landscaped and used for that purpose only.

4) Landscaping must comprise canopy trees under planted with suitable shrubs and/or groundcover.

5) Landscaping along the Castlereagh Road and Andrews Road frontages of the site is to be of a consistent theme, comprised predominantly of native species.

Figure E3.3: Example of preferred landscaping design



3.1.5 Ownership and management

Waterside Corporate will be subdivided under the community scheme legislation. This will enable the creation of individual lots under Torrens Title, Strata Schemes and Community Property for the shared rights and responsibilities of the Community Association, and the dedication of land to Council. It also ensures that the lakes system can be properly managed without unreasonable demands on Council resources. Under the proposed system, the Community Association will be able to maintain and embellish publicly accessible land to a higher standard than is readily achievable with Council resources.

3.1.5.1 Management principles

1) The lake system within Waterside is owned and managed by the Community Association. The lake system consists of:

   a) The 5 main lakes, the lateral lakes, and the water contained within the lakes;

   b) The open space surrounding the lakes and below the 1% AEP;

   c) The culverts and weirs that are not within the road reserves;

   d) The pump system to maintain water levels and water quality; and

   e) The water quality devices, such as gross pollutant traps, macrophyte planting and grass swales.

2) Arrangements for the maintenance of areas within the development, including the lake system, the internal road system and any other publicly accessible areas shall be made prior to the granting of development consent for construction of the lakes system or subdivision of land and are indicated in Table E3.2: Management Designation below.

3) The road system for the development, except the private accessways, shall be dedicated to Council.

4) Public access shall be provided and maintained at all times to the parks and bicycle/pedestrian pathways identified in Figure E3.2: Key Design Elements (Waterside Corporate).

5) The Community Association shall maintain the lake system, open space areas around the lakes and all bicycle/pedestrian pathways. The Community Association must remove litter that may collect among the macrophyte planting.

6) The Community Association shall maintain landscaped areas within the median strips, roundabouts and footpaths.

7) The access ways are to be created as restricted neighbourhood property to ensure that the restricted neighbourhood property users will pay for the maintenance and upkeep of those areas.

Table E3.2: Management Designation

Element	Owned By	Maintained By	Cleaned By
Road System	Penrith City Council	Penrith City Council	Community Association
Utility Services	Service Provider	Service Provider	Service Provider
Garbage Services	Penrith City Council	Penrith City Council	Penrith City Council
Acoustic Barrier	Community Association	Community Association	Community Association
Community Facilities[1]	Community Association	Community Association	Community Association
Community Property[2]	Community Association	Community Association	Community Association
Landscaping[3]	Penrith City Council, Community Association and Neighbourhood Association	Community Association	Community Association
Road Bridges	Penrith City Council	Penrith City Council	Community Association
Road Retaining Wall	Penrith City Council	Penrith City Council	Community Association
Pedestrian Bridges	Community Association	Community Association	Community Association
Main Weirs	Community Association	Community Association	Community Association
Road Culverts	Penrith City Council	Penrith City Council	Penrith City Council
Low Flow Weirs	Community Association	Community Association	Community Association
Road Stormwater Pipelines and Pits	Penrith City Council	Penrith City Council	Community Association
Road Pit Socks	Penrith City Council	Penrith City Council	Community Association
Gross Pollutant Traps	Penrith City Council	Penrith City Council	Penrith City Council
Recirculation	Community Association	Community	Community

Element	Owned By	Maintained By	Cleaned By
System		Association	Association
Macrophyte Planting	Community Association	Community Association	Community Association
Grass Swales	Penrith City Council	Penrith City Council	Community Association
Lake Warning Signs and Fences	Community Association	Community Association	Community Association

Table Notes:

1. *The Community facilities are defined as facilities for the use of proprietors and occupiers of the community scheme.*

2. *The Community property is defined as property owned and maintained by the Community Association.*

3. *The Landscaping on the site is owned by different parties, yet all of it is maintained by the Community Association. Penrith City Council owns the public roads, medians, footpaths in public roads, roundabouts and woodland reserve. The Community Association owns all open space areas associated with the lakes and community property. The Neighbourhood Association owns all neighbourhood property.*

3.2 Waterside Residential

3.2.1 Preliminary

3.2.1.1 Purpose of the Section

The purpose of this Section is to guide residential development of the Waterside area.

3.2.1.2 Land to which the Section applies

This section applies to the land shown on Figure E3.4 below.

Figure E3.4: Land to which the 'Waterside Residential' Part applies.

3.2.1.3 Vision for Waterside

The development at Waterside has evolved in response to on-site and surrounding physical characteristics. The majority of residential traffic will access the site via Castlereagh Road and Laycock Street.

The development is to deliver a broad range of dwelling types that have high levels of amenity and good access to on-site open space areas and facilities.

Landscaping will separate the buildings in the Corporate and Residential zones. The proposed residential development will be separated from the light industrial buildings by dense landscaping to be contained in building setbacks, roadway verges and median strips. This landscaping will provide a transition between the different land uses and building types.

Development of Waterside is to:

1) utilise and enhance the natural characteristics of the land to create a unique community identity and special residential environment.

2) meet sound environmental planning practices and standards and satisfy ecologically sustainable design principles.

3) maintain and enhance the views through and across the subject land to the Penrith Lakes, the Nepean River and the Mountains.

4) minimise any adverse impact on residential development from noise on adjacent roads and nearby industrial development.

5) manage the collection, storage, disposal and impacts of stormwater in an environmentally sustainable and responsible manner.

6) Retain and enhance the existing wetlands adjacent to Nepean Street.

7) Enable a diverse range of housing forms and densities to meet the needs of different age groups and family compositions.

8) Demonstrate a high standard of residential amenity and urban and architectural design quality.

3.2.1.4 Aims and Principles of this Section

A. Aims of this Section

a) To provide a clear planning framework for development in the area;

b) To ensure that development meets sound environmental planning practices and standards and encourage development which satisfies ecologically sustainable design principles;

c) To protect the environmental heritage of the area, whether it is of historic, aesthetic, architectural, archaeological, natural, cultural, Aboriginal or other significance;

d) To utilise and enhance the natural characteristics of the land to provide opportunities for a unique community identity and special residential environment;

e) To supplement and enhance the landscape character of the area;

f) To maintain and enhance the views through and across the subject land to the Penrith Lakes, the Nepean River and the Mountains;

g) To encourage development which enhances the area's gateway location to Penrith and Penrith Lakes;

h) To minimise any adverse impact, to residential development, of noise from traffic on adjacent roads and nearby industrial development;

i) To responsibly manage drainage, water management and flooding;

j) To retain and enhance the existing wetlands adjacent to Nepean Street;

k) To provide opportunities for visitor accommodation;

l) To ensure that development occurs in an orderly and economic way; and

B. Development Principles

1) The management of the lake system will be determined by agreement between all major parties, and will be kept within the ownership of the Community Association. The lake system consists of:

   a) The 5 main lakes, the lateral lakes, and the water contained within the lakes;

   b) The open space surrounding the lakes and below the 1% AEP;

   c) The culverts and weirs that are not within the road reserves;

   d) The pump system to maintain water levels and water quality; and

   e) The water quality devices, such as gross pollutant traps, macrophyte planting, and grass swales.

2) Arrangements for the maintenance of areas within the development, including the lake system, the internal road system and any other publicly accessible areas shall be made prior to the granting of development consent for construction of the lakes system or subdivision of land and are indicated in Table E3.3: Management Designation under Community Management Statement.

3) The road system for the development, except the private accessways, shall be dedicated to Council.

4) Public access shall be provided and maintained at all times to the parks and bicycle/ pedestrian pathways identified in Figure E3.11 – Land Accessible to the Public.

5) The Community Association shall own and manage all open space with the exception of the Woodland Reserve, which is to be rehabilitated and dedicated as public reserve.

6) The Community Association shall maintain the lake system, open space areas around the lakes and all bicycle/pedestrian pathways. The Community Association must remove litter that may collect among the macrophyte planting.

7) The Community Association shall maintain landscaped areas within the median strips, roundabouts and footpaths.

8) The access ways are to be created as restricted neighbourhood property, to ensure that the restricted neighbourhood property users will pay for the maintenance and upkeep of those areas.

9) Dwellings are to be designed to accommodate home-based telecommunications facilities, with shared antenna/television aerials (if necessary) for dwellings on each residential 'island'.

Table E3.3 - Management Designation under Community Management Statement

Element	Owned By	Maintained By	Cleaned By
Road System	Penrith City Council	Penrith City Council	Community Association.
Utility Services	Service Provider	Service Provider	Service Provider
Garbage Services	Penrith City Council	Penrith City Council	Penrith City Council
Acoustic Barrier	Community Association	Community Association	Community Association
Community Facilities[1]	Community Association	Community Association	Community Association
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Road Bridges	Penrith City Council	Penrith City Council	Community Association
Road Retaining Wall	Penrith City Council	Penrith City Council	Community Association
Pedestrian Bridges	Community Association	Community Association	Community Association
Main Weirs	Community Association	Community Association	Community Association
Road Culverts	Penrith City Council	Penrith City Council	Penrith City Council

Element	Owned By	Maintained By	Cleaned By
Low Flow Weirs	Community Association	Community Association	Community Association
Road Stormwater Pipelines and pits	Penrith City Council	Penrith City Council	Community Association
Road Pit Socks	Penrith City Council.	Penrith City Council.	Community Association
Gross Pollutant Traps	Penrith City Council	Penrith City Council	Penrith City Council
Recirculation System	Community Association	Community Association	Community Association
Macrophyte Planting	Community Association	Community Association	Community Association
Grass Swales	Penrith City Council.	Penrith City Council.	Community Association
Lake Warning Signs and fences	Community Association	Community Association	Community Association

(1) The community facilities are defined as facilities for the use of proprietors and occupiers of the community scheme.

(2) The Community property is defined as property owned and maintained by the community Association.

(3) The Landscaping on the site is owned by different parties, yet all of it is maintained by the Community Association. The PCC owns the public roads medians, footpaths in public roads, roundabouts and woodland reserve. The Community Association owns all open space areas associated with the lakes and community property. While the Neighbourhood Association owns all neighbourhood property.

3.2.1.5 Urban Structure and Staging

The Waterside Residential Master Plan establishes the urban structure for the planning and development of the subject land. The Plan is illustrated at Figure E3.5: Waterside Residential Masterplan.

Figure E3.5: Waterside Residential Master Plan

The following design principles underpinning the Master Plan must be addressed at subdivision stage:

1) Development will be located around the lakes system, community centre and open space areas which will provide focal points for the new community.

2) Housing type and density will be provided and located as indicated in Figure E3.8: Residential Densities.

3) The development is to deliver a broad range of dwelling types that have high levels of amenity and good access to on-site open space areas and facilities.

4) The area will be legible and accessible to the general public. It will incorporate a bus route, cycle routes and walking tracks as indicated in Figure E3.11 – Land Accessible to the Public.

5) Dense landscaping contained in setbacks and road reserves will separate the buildings in the Corporate and Residential zones.

6) The road layout will accord with Figure E3.10 – Road Hierarchy to minimise traffic movements, with the majority of residential traffic to access the site via Castlereagh Road.

7) The staging of the development within the R1 General Residential zone is proposed to generally progress southward and eastward towards the Laycock Street extension. This progressive delivery of the residential development is to accord with the recommendations of the approved Acoustic Strategy as adopted in Council's Meeting dated 8 March 2010.

3.2.1.6 Approval Process

1) A Concept Plan shall be submitted for Council's consideration prior to submission of specific applications for development. Separate Concept Plans for each zone may be submitted if, in the opinion of the Council, an appropriate and suitable interface between the zones is demonstrated.

2) Each Concept Plan will be reported to Council and, if adopted, will establish in more detail the character, density and built form for development in each zone.

3) Each Concept Plan shall demonstrate that the development will satisfy the quantitative and qualitative controls of this section, and shall include:

   a) An indicative site plan for the lakes, floodway, waterways, development and subdivision (including a provisional staging plan), which provides sufficient detail to enable assessment against the provisions of the LEP and this section;

   b) A plan of existing significant trees (identifying those which will be retained);

   c) A plan for the management and maintenance of the water system, including any relevant documentary evidence of agreement/s with relevant authorities/bodies;

   d) A report assessing the significance of identified Aboriginal sites (including those already known to exist) and a plan detailing the location of any Aboriginal sites;

   e) A report assessing the significance of existing and potential heritage items, and a statement assessing the impact of the proposed development on those items, and the curtilage and vicinity of those items; and

   f) An acoustic report in accordance with the provisions of Table E3.5: Acoustic Reports, which:

      i) Identifies the noise environment of the subject land (including a plan of existing noise contours);

      ii) Provides an assessment of the impact of external noise sources (in particular, industrial and traffic noise); and

iii) Proposes acoustic measures to mitigate any noise impacts.

4) Any subsequent application for development shall include:

   a) Details of the proposed development;

   b) Detailed excavation plans for the relevant land, showing the location of all cut and fill works and finished ground levels;

   c) An acoustic report detailing any necessary site-specific acoustic measures in accordance with the provisions of Table E3.5 – Acoustic Requirements;

   d) Information which demonstrates the proposal complies with the relevant LEP and the provisions contained in this section (including any approved Concept Plan); and

   e) A written description (and samples) of external materials and colours for proposed buildings, fencing, pavements, roads, landscape planting, and special treatments or features.

3.2.1.7 Specific information relating to the R1 General Residential and E2 Environmental Conservation zones

1) Master Plans have been submitted to Council for the Waterside Precinct for the subject lands. They were placed on public exhibition and adopted by Council as amendments to this Part.

2) Specific requirements for these zones are generally listed under separate headings, except where it was more appropriate to fully incorporate the specific requirements without the use of a separate heading.

3) Applications for development in the R1 General Residential and the E2 Environmental Conservation zones must generally comply with both the specific requirements listed for that area and the general provisions of this Section, where relevant.

3.2.1.8 Wetlands Protection

The area of the site north of Nepean Street is zoned E2 Environmental Conservation under the provisions of the Penrith LEP 2010. The wetlands area is also identified as 'Mapped Wetland 156' under the provisions of the *Sydney Region Environmental Plan No. 20 - Hawkesbury Nepean River*. Wetland 156 is mapped as a perennial wetland despite areas of the wetland being dry at various times of the year.

The wetlands cover a total area of approximately 8.2ha in three sections, fragmented by Nepean Street and an existing drainage channel. For the purposes of discussion, the three 3 fragmented areas of Wetland 156 are labelled as A, B and C (refer Figures E3.6 and E3.7). Wetland Area A is the largest, comprising approximately 7.5ha, or 91.5% of the overall area. Wetland Area A is located to the north of Nepean Street, and will not be disturbed. Wetland Areas B and C comprise the remaining 0.7ha, or 8.5%. These two areas are located within the proposed residential area and will be disturbed.

It is proposed to enlarge Area A by closing Nepean Street to through traffic; removing the carriageway of the closed section of Nepean Street; and extending Wetland Area A from the north of Nepean Street to the R1 General Residential zone. The rehabilitation will form one

large wetland rather than three fragmented parts (refer to Figure E3.7). The loss of wetland remnant Areas B and C will be compensated by the enlargement of wetland Area A and the construction of the lake system.

The development of the lake system, in conjunction with the rehabilitation of the wetland, will increase the amount of habitat available for native fauna by approximately 222m^2. The wetland rehabilitation will maintain and or potentially improve ecological biodiversity.

Figure E3.6 - Existing Conditions of Mapped Wetland 156

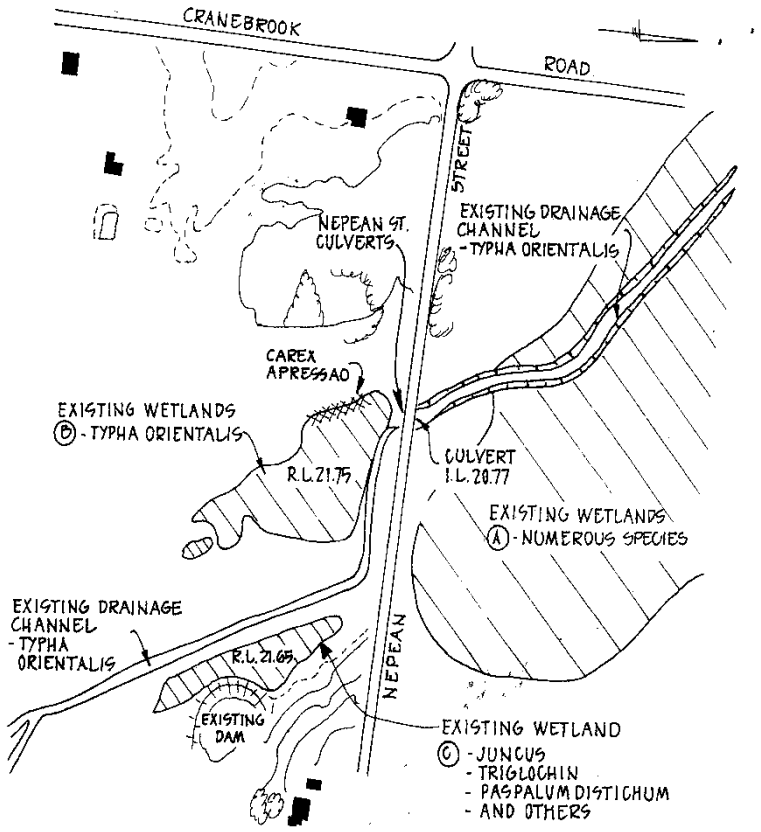
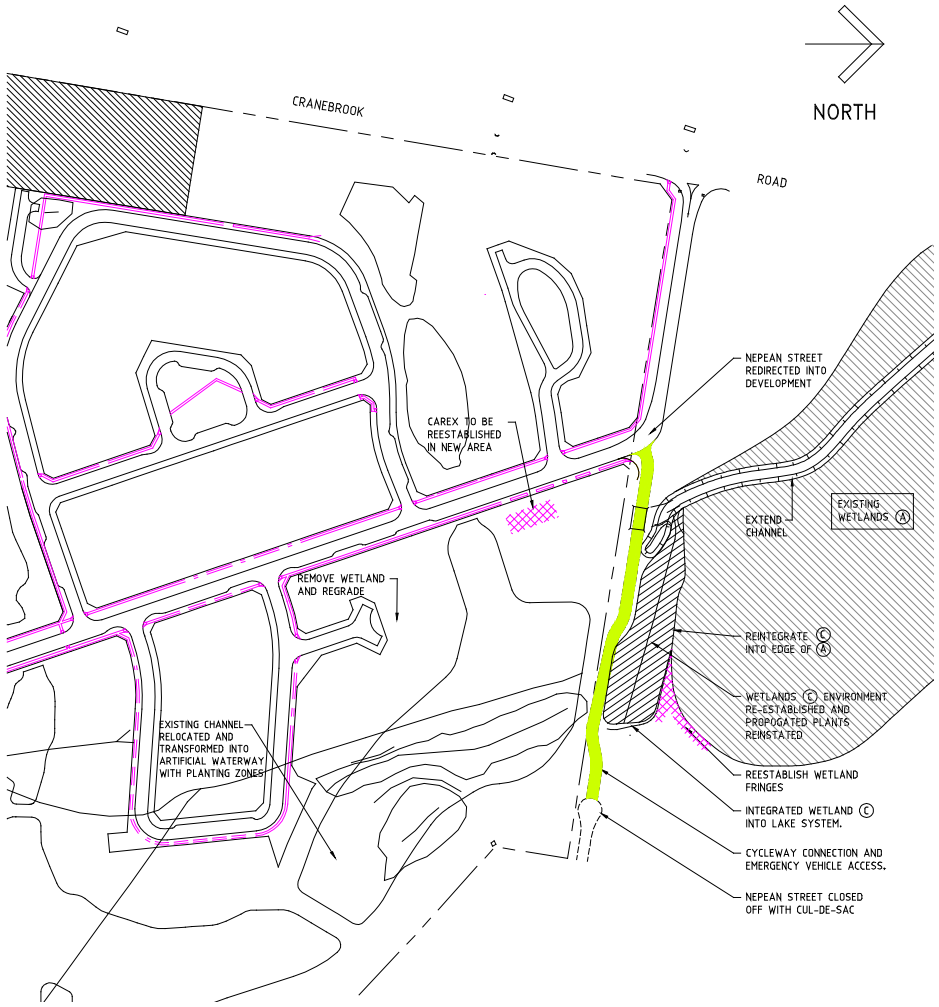


Figure E3.7: Proposed Wetlands Rehabilitation



3.2.1.9 Ownership and Management under the Community Scheme Legislation

The R1 General Residential zone will be subdivided under the community scheme legislation. This will enable the creation of individual lots under Torrens Title, Strata Schemes, and Community Property for the shared rights and responsibilities of the Community Association, and the dedication of land to the Council. It also ensures that the lakes system can be properly managed without unreasonable demands on Council resources.

Under the proposed system, the Community Association will be able to maintain and embellish publicly accessible land to a higher standard than is readily achievable with Council resources. The ongoing management and maintenance of the R1 General Residential zoned land will be the subject of a Community Management Statement. The E2 Environmental Conservation zone will not form part of the Community Scheme. This area will remain under separate title.

3.2.2 Development Requirements

The objectives and specific requirements for elements of any development of the subject land are detailed in the following sections.

3.2.2.1 Floodway, Drainage and Site Works

A. Objectives

General Objectives

a) To encourage the enhancement of the natural characteristics of the land to provide opportunities for a unique community identity and special residential environment.

b) To protect the environmental heritage of the area, whether it is of historic, aesthetic, architectural, archaeological, natural, cultural, Aboriginal or other significance.

c) To maintain biodiversity by providing and increasing habitat for native fauna.

Floodway and Lake System Objectives

a) To ensure no adverse impact from flooding is experienced upstream and downstream as a result of development of this land by the incorporation of a floodway into the lakes system,

b) To ensure that development is appropriately protected from flood inundation.

Catchment Water Quality Objectives

a) To ensure that an adequate and environmentally acceptable method of controlling surface water and storm water is implemented.

b) To ensure appropriate water quality standards are maintained throughout the system and that post development water quality is an improvement on pre development water quality.

c) To maintain adequate water quality levels throughout the lakes system at all times.

d) To ensure that water quality standards are not compromised for the Lakes system.

Water Quantity Objectives

a) To ensure adequate circulation and stable levels of water through the lake system and branch waterways.

Management of the Lakes System Objectives

a) To ensure the maintenance of the water management system (floodway, lakes, lateral waterways and stormwater drainage) to appropriate design and environmental standards.

b) To ensure the maintenance of the water management system to appropriate design and environmental standards.

c) To encourage innovative design solutions to complement the management of water within the catchment,

Wetland Protection Objectives

a) To maintain the quantity of water reaching the Nepean Street wetland.

b) To ensure the retention and enhancement of the existing wetlands adjacent to Nepean Street.

Stormwater Drainage Objectives

a) To make adequate provision for stormwater runoff in and through the estate.

b) To ensure the drainage system adequately protects road pavements.

c) To encourage use of water-permeable paving such as hollow blocks with gravel centres.

Earthworks Objectives

a) To ensure appropriate erosion and sedimentation control of bulk earthworks construction.

Contaminated Land Objectives

a) To ensure that any contaminated land found on the site is properly managed and remediated to a level appropriate for the subject development.

Aboriginal Cultural Heritage and Non-Aboriginal Heritage Objectives

a) To appropriately manage the Aboriginal cultural heritage of Waterside.

b) To protect and preserve items of local heritage significance.

c) To ensure that identified items of local heritage significance are adequately recorded by archival means as part of this development, if demolition is deemed necessary.

B. Controls

1) Floodway and Lake System

a) The floodway and lake system shall be located generally in accordance with this sections relevant map/s.

b) The floodway/main lake system shall have a width no less than that determined by Council having considered both flood conveyance requirements and modelled pre/post development flood impacts/variances for the 1% AEP, 0.5% AEP and 0.2%AEP local catchment and Nepean River flood events.

c) The lakes and lake foreshores (particularly the depth and grading) shall be designed to maximise safety.

d) Additional habitats, including islands, shall be constructed in each of the major lakes generally as indicated on the E3.12: Key Design Elements (Waterside Residential) to provide a habitat for local flora and fauna.

e) A recirculation system for the lakes shall be provided. The system must comprise components which will:

i) Minimise the likelihood of stratification of lakes, if this is necessary due to lake depth;

ii) Allow for full or partial draining of the lakes for maintenance purposes; and

iii) Prevent the formation of habitat conducive to mosquito breeding.

2) Catchment Water Quality

a) Water quality shall be improved and maintained by each proposed development.

b) Adequate velocity and the controlled flow of water through the system shall be maintained at all times, to ensure the quality of the water and to reduce mosquito populations.

c) Water quality shall be enhanced by trapping and removing all debris. Gross pollutant traps are to be provided where the floodway enters the property at the Andrews Rd boundary and where drainage from the south western corner of the public reserve enters the property at its eastern boundary.

d) Macrophyte planting is to be provided around the perimeter of lakes edges to assist in the filtering of nutrients.

e) The use of fertilisers and other sources of nutrients may adversely impact on water quality and shall be minimised.

f) A process for monitoring the quality of discharges from this land is required to ensure system performance is maintained. This process, and agreed outcomes, shall be established through negotiation with the Penrith Lakes Development Corporation, Council and NSW Office of Environment and Heritage. The monitoring process shall include maintenance of nutrient levels, and shall be undertaken on a regular basis. Details of the program shall be submitted with development application/s for the construction of the lakes system.

g) A management plan for the regular maintenance of the lakes system shall be established and enforced. This shall include regular mowing and maintenance of the verges, pruning, structural and operational maintenance of the system, dewatering and de-silting the lakes and ponds, and removal and replanting of the macrophytes as required.

h) A draft management plan shall be submitted with development application/s for the construction of the lakes system.

3) Water Quantity

a) A permanent water level shall be maintained within the lateral waterways.

b) An internal pumping system must be installed to enable the pumping of water between lakes, and the maintenance of water quality.

c) The pump system shall be enclosed, or provided with acoustic treatment or barriers, to ensure residents are not affected by the noise generated by its operation.

d) Water levels in the Lakes and all laterals shall comply with the approved water management plan.

4) Management of the Lakes System

a) Council shall not issue development consent for a proposal to subdivide or develop the site unless satisfactory arrangements have been made with the Council for the ongoing maintenance and management of the lakes system.

b) As part of a development application submitted for construction of the lakes system, the following issues must be addressed:

i) A proposal which outlines the agreed responsibilities, of all relevant parties, for the ownership and management of the lakes system. Satisfactory arrangements regarding this matter must be achieved prior to granting development consent for construction of the lakes system or subdivision of land;

ii) Means of improving water quality compared with existing water quality (at the time of submission), and the proposed water quality monitoring regime;

iii) A Water Management Plan for the maintenance of the lakes system, including a schedule of proposed maintenance activities, annualized operational costs, and capital replacement costs. The Water Management Plan should also address:

- The water quality and quantity discharge details, including expected changes in water quality and quantity to the existing system due to development (low flows, high flows, total over average rainfall year);
- A plan for monitoring the quality of water discharge from the site;
- The management of pollutants such as oils, grass clippings etc.;
- The control of exotic flora and fauna;
- Stormwater controls;
- Groundwater effects (including any plans to draw from the groundwater for supply);
- Sewer requirements (impact on existing sewer system and lake system);
- Emergency controls;
- The handling of water during the various stages of construction, as well as the final system (including site water management plan and sediment and erosion control measures);
- The incorporation of water management facilities;
- The process of handling contaminated fill, if required;
- Wastewater re-use and its impact on outflow (quality and quantity); and
- Internal pumping and the impact on outflow;
- A Construction Management Plan in relation to leaching or deposition of materials into the lakes system and control of runoff; and

- A program for mosquito control and any other relevant matter identified in this section.

5) Wetland Protection

a) An Environmental Impact Statement (EIS), in accordance with the provisions of the *Environmental Planning and Assessment Act 1979*, must be submitted for any works which will impact on Mapped Wetland No.156.

b) The rehabilitation of Mapped Wetland No. 156 shall be generally be in accordance with the concept plan shown in Figure E3.7: Proposed Wetlands Rehabilitation, unless this is varied by the EIS process described above.

c) Appropriate erosion and sedimentation control measures must be provided for any development in Waterside, to ensure no sediment from that development enters the wetland system.

d) Plantings for the rehabilitated wetland area must be consistent with existing natural species to blend both natural and made elements.

6) Stormwater Drainage

a) All components of the drainage system shall be designed to convey the 1% AEP flow. Pipe networks within roads shall convey the 20% AEP with the road carriageway containing additional flows up to the 1% AEP. Requirements set out in the subdivision section of this DCP must be complied with.

b) Dispersed points of discharge to the waterway system (using roads, paths or open spaces) shall be provided. This may include a piped drainage system and grassed swales through open space areas.

c) Ground waters shall be protected from the impacts of any surface waters.

d) Innovative design solutions for stormwater management are encouraged. On-site stormwater detention, dual water supply and / or reuse shall be considered, and details provided for Council's consideration.

e) Any proposed drainage system shall be designed to protect road pavements.

f) The stormwater drainage system shall be designed to facilitate maintenance of footpath and road reserve areas.

g) Roof and surface water not reused on each lot is to be discharged into the lake system in a controlled manner.

h) All stormwater being discharged into the lake system is to be free of harmful pollutants, contaminants, grass litter and biodegradable matter.

i) The stormwater system shall be designed and constructed in accordance with the requirements of the Engineering Works requirements in Appendix F3 – Submission Requirements of this DCP and the accompanying guidelines.

7) Earthworks

a) All earthworks shall be undertaken in accordance with the NSW Government's "*Managing Urban Stormwater: Soils and Construction Manual*" (Volume 2A, January 2008) and shall minimise the potential for soil loss and pollution.

b) Full details of soil erosion and sediment control measures shall be submitted with all subdivision or development applications which will involve soil disturbance.

8) Contaminated Land

a) Geotechnique Pty Ltd. undertook a Preliminary Environmental Site Assessment in February 1999. The assessment involved:

i) A desktop study of all available information from the NSW Environmental Protection Authority, Lands Title Office and Land Information Centre;

ii) Review of soils and geological maps; and

iii) Site reconnaissance to identify the presence of potential contaminants.

The report concluded that the site should be suitable for the proposed development, subject to further contamination investigation and subsequent remediation, if required.

b) A Stage 2 Environmental Site Assessment must be submitted to Council as part of any development application for bulk earthworks;

c) Contaminated land must be remediated to an acceptable level prior to commencement of any earthworks in the affected area; and

d) Remediation shall involve the treating and / or mitigating of the contaminants to the satisfaction of an EPA qualified auditor, and in accordance with Land Management section of this Plan).

9) Aboriginal Cultural Heritage

a) A fully comprehensive archaeological survey of the subject land is to be undertaken to identify surface remains and areas of potential artefact bearing deposit.

b) Archaeological and cultural sensitivity maps are to be prepared.

c) A program of subsurface testing is to be undertaken in the areas of archaeological or cultural sensitivity or subsurface potential to determine the presence or absence of sites and their archaeological or cultural significance.

d) If any sites are found, an Aboriginal Cultural Heritage Management Plan may be required.

e) If an Aboriginal Cultural Heritage Management Plan is required, that plan must be submitted prior to commencement of construction of the lake system. Should it be deemed that any aspect of that construction will compromise any aboriginal cultural material, prior consultation with the National Parks and Wildlife Service and the Deerubbin Local Aboriginal Land Council (DLALC) is required.

f) Proposed earthworks shall be assessed by members of the DLALC. Onsite monitoring by the DLALC during excavation in the vicinity of identified or potentially significant sites may be required.

g) All Aboriginal cultural heritage assessment and archaeological investigation should be conducted in consultation with the DLALC.

3.2.2.2 Urban Design

A. Objectives

General Objectives

a) To recognise the unique setting of the site, and to express Penrith's role as a regional city, in the development of essential design elements for buildings within the estate.

b) To protect the environmental heritage of the area, whether it is of historic, aesthetic, architectural, archaeological, natural, cultural, Aboriginal or other significance.

Design Elements Objectives

a) To encourage development which satisfies principles of Environmentally Sustainable Development.

b) To enhance views through and across the subject land to Penrith Lakes, the Nepean River and the Blue Mountains.

c) To achieve a range of housing forms and densities.

d) To provide opportunities for visitor accommodation,

e) To provide a level of development that complements and enhances the waterways system.

f) To maintain adequate building envelopes to achieve appropriate levels of scale consistent with landscaping, the desired streetscape, and the desired future amenity.

External Materials and Finishes Objectives

a) To ensure that external materials and finishes complement the landscaping and urban design of the development.

b) To enhance the streetscape and roofscape through the use of a diverse range of materials and finishes.

c) To encourage the use of high quality external materials and finishes.

Energy Efficiency Objective

a) To promote energy efficient development and minimise the need for artificial lighting, heating or cooling.

Site and Building Works Objectives

a) To ensure that development meets sound environmental planning practices and standards.

b) To provide a satisfactory and appropriate level of landscaping.

c) To ensure that the design and establishment of development, community facilities, open space and waterways is undertaken in an integrated fashion.

d) To encourage the most effective, orderly and economic provision of service infrastructure for the area.

e) To ensure that site facilities are effectively integrated into the development, and that they are contemporary, practical, attractive and easily maintained.

Advertising Objectives

a) To prevent the proliferation of advertising signs.

b) To allow signage and advertising which is complementary to the R1 General Residential built form, and does not detract from a high quality urban environment.

B. Specific Objectives for the R1 General Residential zone

a) To provide a suitable interface between R1 General Residential and the E2 Environmental Conservation zones.

b) To encourage the use of the open space areas by providing an interconnected pathway system through the entire estate.

Residential Diversity

a) To deliver a broad range of dwelling types that have high levels of amenity and good access to on-site open space areas and facilities.

Building Envelopes

a) To maintain views of Penrith Lakes, the Nepean River and the Blue Mountains for the residents of Cranebrook.

b) To provide a variety of facades and external appearances, to create a distinctive image for the estate.

External Materials and Finishes Objectives

a) To maximise the use of recycled materials, or components in which recycled materials have been used.

Privacy

a) To ensure visual privacy between dwellings.

b) To avoid overlooking of living spaces in buildings and private open spaces.

Energy Efficiency

a) To minimise the need for artificial lighting, heating or cooling.

b) To ensure reasonable access to sunlight for living spaces within buildings and open spaces around buildings.

c) To encourage the siting, design and construction of dwellings that will receive the maximum benefit from solar energy and provide for energy conservation measures.

d) To allow for active solar energy devices such as domestic water heaters and / or use of solar energy for all household power requirements,

Fencing

a) To ensure fencing complements development style.

b) To ensure fencing does not contribute to problems relating to safety and overlooking.

B. Controls

1) Design Elements

a) The design and appearance of each building and/or development, particularly when viewed from the waterways, other public places and Cranebrook must be of a high standard which meets the design requirements of the section.

b) The design of each building and/or development must satisfy ecologically sustainable design principles.

c) An integrated design for lighting and signage is to be implemented throughout the estate.

d) The wetlands at the northern end of the estate shall not be adversely affected by any development.

2) External Materials and Finishes

a) The external finishes of all development are to be:

i) Durable, high quality, low maintenance materials.

ii) Compatible with the overall design and form of the estate.

iii) Considered in association with proposed planting and landscape treatment; and

iv) Considered in the context of their ability to mitigate acoustic impact.

b) Roof materials shall not be highly glazed or reflective.

c) Large areas of reflective materials will not be accepted.

d) Fencing must integrate with the built form and landscape character, with a continuity and consistency to its design (form, material and colour).

3) Energy Efficiency

a) Winter solar penetration should be maximised and summer solar penetration minimised.

b) Natural ventilation opportunities should be maximised.

4) Site and Building Works

a) All buildings on the site shall be designed and built such that their structural integrity can withstand flood flows generated by a flood equivalent to the Nepean River 'Flood of Record'- equating to the 0.5% AEP Flood Event. Damage potential is to be determined considering flood duration, flood depth and flow velocity such that buildings do not sustain structural damage or loss of load bearing capacity following immersion. Council will be guided by reference to available documentation provided in the 'Nepean Floodplain Management Strategy' in its determination as to whether flood compatible building design and material selection have been adequately considered. Appropriate modelling and mapping is to be undertaken to determine those areas of the site which when fully developed would present development characteristics where special flood compatible building design is required.

b) All lots should have their finished surface at least 500mm above the 1% AEP flood level generated by local catchment or Nepean River flood flows, which ever generates the higher flood levels.

c) Where finished ground levels are not 0.5m above the 1% AEP flood event level, dwellings shall be constructed with habitable floor levels a minimum of 0.5m above the flood level.

d) Water quality, downstream of any proposed development, shall be improved and maintained throughout any construction and/or development works.

e) Stormwater on each lot shall be captured and stored, where feasible, for future use in landscape maintenance.

f) Recycling of stormwater for garden irrigation shall be implemented by the provision of on-site stormwater detention to standards specified by Council.

g) Finished surface and ground levels shall fall to property boundaries and along roads to achieve adequate drainage.

h) Soil erosion and sediment control measures shall be in accordance with the NSW Governments' *"Managing Urban Stormwater: Soils and Construction Manual 2004"* (Landcom, 2004). Details shall be submitted to Council with each development application.

5) Site Facilities

a) Waste and recycling facilities are to be provided in accordance with the Waste Management Section of this Plan.

b) A Waste Management Plan is required to be submitted with any development application for demolition, construction and or use of residential, commercial and industrial development.

6) Advertising

a) All advertising is to comply with the advertising and signage requirements of this plan and be:

   i) Constructed of high quality durable materials;

   ii) Considered in conjunction with the design and construction of buildings; and

   iii) Contained wholly within the site.

b) Hoardings may be displayed during construction, subject to Council's approval, and must be removed upon completion of the relevant building/s.

c) Real Estate signs may be displayed during periods of sale, providing the signs are located within the relevant property boundaries, and not located on footpaths and other pedestrian areas.

d) The Community Association shall be responsible for the cleaning of any graffiti that occurs within the estate.

7) Residential Densities

a) Development shall establish a range of housing densities and forms across the estate:

b) Subdivision may be in the form of 'A' type lots, 'B 'type lots, 'C' type lots, 'D' type lots and 'E' type lots (Refer to the Residential Development part of this Section).

c) A mix of housing lots and types shall be generally consistent with the residential densities and lot layout shown in Figure E3.8: Residential Densities; and

   i) The notional yield for each of the 'dwelling types' are outlined in Table E3.4 General Residential Design Elements.

d) The location of the 'dwelling types' shall comply with the requirements of the section except where it can be demonstrated that:

   i) the overall density of the proposed development parcel will still be achieved, and

   ii) the proposed densities, range of lot sizes, and built form/designs still achieve the aims, objectives and requirements of the section.

8) Streetscape and Amenity

a) A mixture of housing designs shall be provided, to create attractive and varied streetscapes.

b) Dwellings adjoining pathways and access ways should be designed, through placement of living spaces and windows, in such a way that the public areas can be observed from the dwellings. This is to increase security and to encourage a sense of ownership by the occupants.

c) Buildings, materials and fencing should be articulated and designed to integrate pathways and access ways. This is intended to increase security and create a sense of ownership.

d) Dwellings adjoining public open spaces, pathways and waterways shall be provided with outdoor spaces in which privacy can be ensured without obstructing the important public views.

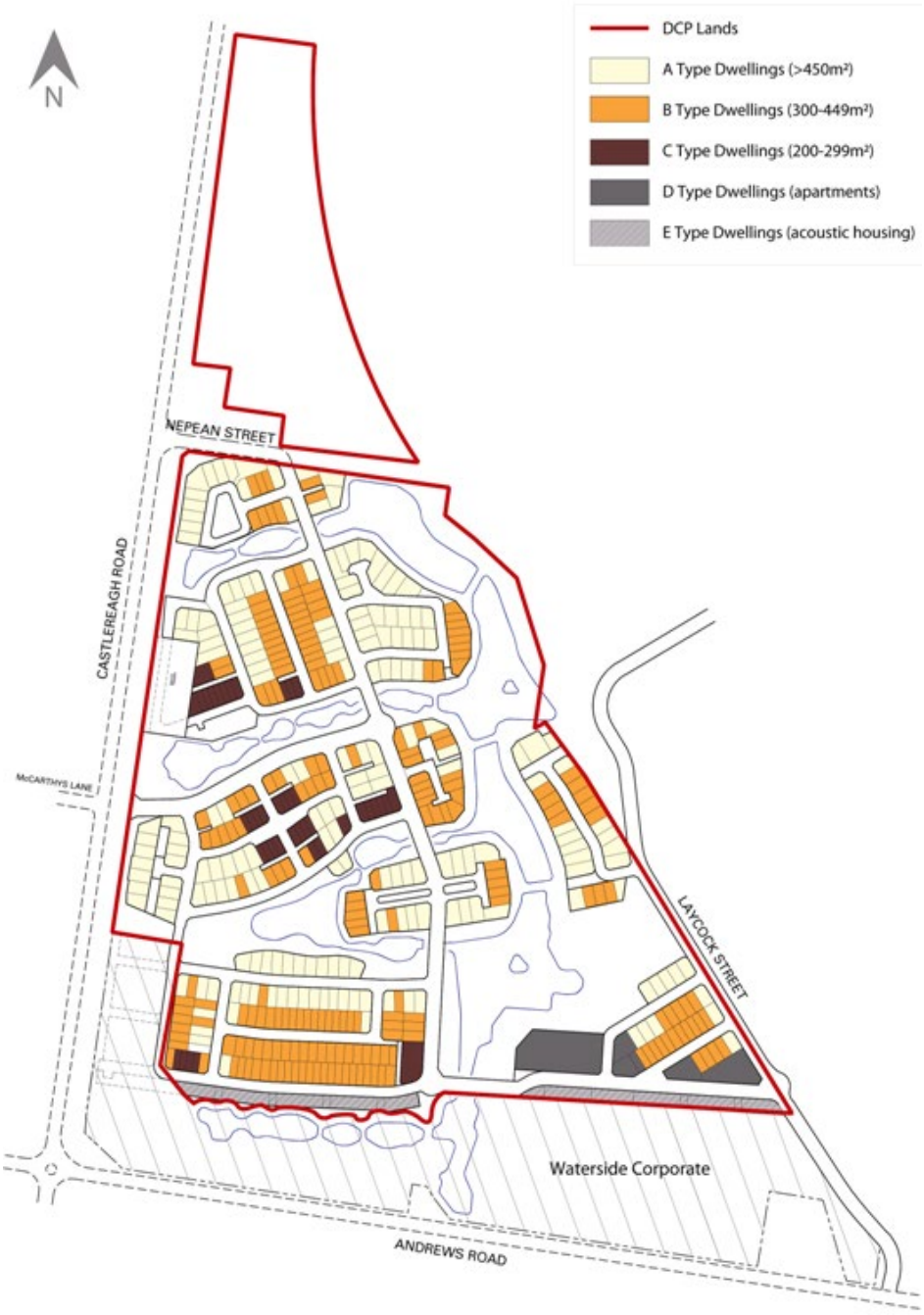
e) The streetscape, dwelling designs and site layouts should generally reflect the indicative concept site plans in Section 3.2.2.6.1 Dwelling Types.

Table E3.4: R1 General Residential Design Elements

Design Elements	'A' Type Dwellings	'B' Type Dwellings	'C' Type Dwellings	'D' Type Dwellings	'E' Type Dwellings
% of notional yield	34%	38%	7%	5%	16%

Note: Percentages based on yield, not developable area.

Figure E3.8: Residential Densities



9) Building Envelopes

a) Variations in setbacks and building heights may be considered where they will not compromise the objectives of this section, and will contribute to a varied and attractive streetscape.

b) Any changes in scale of 'D' type dwellings, adjacent to lower density residential housing, should reflect the change in both detailing and mass.

c) Design and built form of 'D' Type dwellings are to be considered in accordance with relevant principles of *State Environmental Planning Policy 65 – Design Quality of Residential Flat Development*.

d) 'E' type dwellings are to be designed to be groups of interconnecting dwellings made up of approximately 7 to 11 dwellings.

e) Each group of 'E' type dwellings are collectively not to have site coverage of more than 60% of the total site area.

f) Parking under buildings shall be considered to be a storey if it is more than 1.5m above finished ground level.

g) Projections permitted into the setback areas include eaves, sun hoods, gutters, down pipes, flues, light fittings, electricity or gas meters. Any of these elements may project a maximum of 1.0m.

10) External Materials and Finishes

a) Material selection must take into account the life cycle effect of their manufacture, use and disposal to minimise the effect on the environment. The following environmental factors shall be considered in such analysis:

i) environmental impact throughout their life cycle;

ii) energy use throughout their life cycle;

iii) carbon dioxide emission during manufacture, use and disposal;

iv) toxicity content and toxin production during manufacture, use and disposal;

v) reactive organic compound content;

vi) rare and non-renewable material content;

vii) potential for re-use or recycling;

viii) re-use or recycled material content;

ix) transport and distribution requirements;

x) thermal comfort;

xi) maintenance;

xii) durability; and

xiii) cost.

b) No materials or construction techniques are to be used which may in some way leach or deposit pollutants into the ecological system of the lakes. A Construction Management Plan must be submitted to Council for approval prior to commencement of construction. The Construction Management Plan must address:

i) the type of the staging and timing of construction;

ii) building materials used;

iii) the measures to prevent any leaching or deposition of materials into the lake system;

iv) the method of sorting waste for recycling, e.g. separation of metal, concrete and timber in individual containers prior to transportation from the site, and (v) control of stormwater runoff; and placement and storage of building related elements.

11) Privacy

a) Visual privacy shall be achieved by:

i) using windows that are narrow, translucent or have distorted glass,

ii) ensuring windows do not face directly onto the windows, balconies or courtyards of adjoining dwellings, and

iii) screening opposing windows, balconies and courtyards.

b) Windows, doors and balconies, particularly those above ground level, shall be designed or placed to minimize overlooking of neighbouring outdoor open spaces.

12) Energy Efficiency

a) Any development or buildings for residential purposes shall:

i) Be designed to ensure that the northern facade of new dwellings, and 50% of their private and / or landscaped open space (including the main area), receive a minimum of 3 hours direct sunlight between the hours of 9am and 3pm on 21 June each year;

ii) Be designed and located to ensure that adjoining residential buildings and 50% of their private and / or landscaped open space (including the main area), receive a minimum of 3 hours direct sunlight between the hours of 9am and 3pm on 21 June each year;

iii) Include ceiling insulation to an equivalent thermal rating of at least R2.0 and wall insulation to an equivalent thermal rating of at least R1.5; and

iv) Include protection from the entry of summer sunlight by shading devices on external openings to habitable rooms.

b) All dwellings shall be designed to achieve relevant BASIX requirements.

13) Site Facilities

a) Outdoor clothes-drying areas for multiunit housing (other than for 'D' type dwellings) shall be provided in separate enclosures, to maximise security. These drying areas should be screened from the public view.

b) A central reception aerial / master antenna shall be provided for any proposed development of more than two dwellings. Satellite dishes shall be screened from any public place. Details of any proposed aerial, antenna or dish shall be submitted with the development application.

c) Dwellings are to be designed to accommodate home-based telecommunications facilities and information technologies, by allowing for:

i) Additional telephone lines and outlets;

ii) Additional electrical outlets; and

iii) Satellite or cable-based reception.

14) Fencing

a) The type, style and design of the fencing must complement surrounding buildings and the landscape design.

b) The following types of fencing are prohibited:

i) Colorbond; and

ii) Mesh wire fencing; and

iii) Chain link fencing.

c) Fences bounding the edge of the lake system shall have a maximum height of 1.5m.

d) Fences bounding pathways and access ways shall be no higher than 1.8m.

e) Fencing and courtyard walls forward of the building line shall be a maximum of 1.2m, with exception of 'E' type dwellings.

f) Side fences (to the rear of the building line) and rear fences shall not exceed 1.8m.

3.2.2.3 Acoustic Requirements

A. Objectives

General Objectives

a) To ensure that development meets sound environmental planning practices and standards.

b) To minimise any adverse impact, to residential development, of noise from traffic on adjacent roads and nearby industrial development.

c) To ensure that the residential uses of this site do not restrict, by way of additional noise controls or requirements, future development or expansion of adjacent industrial activities.

d) To ensure that the design of any acoustic measures contribute to the visual amenity of Waterside and are suitably integrated with the built form and landscaping of the site.

B. Specific Objectives for the R1 General Residential zone

a) To facilitate residential development by requiring acoustic barriers along Castlereagh Road.

b) To facilitate residential development by ensuring appropriate acoustic measures along Andrews Road.

c) To require acoustic barriers that are aesthetically appealing.

Table E3.5: Acoustic Reports

Submission	Details
Acoustic Report with each Concept Plan	Proposed acoustic measures for the estate
Acoustic Report with each Development Application	Site-specific acoustic measures for each proposed development.
Certificate Of Compliance when the lake system and waterways have been completed.	Compliance required with outdoor noise criteria in residential areas.
Certificate Of Compliance when any relevant acoustic barrier/s or buildings have been completed.	Compliance required with outdoor noise criteria in affected areas prior to proceeding with residential development.
Certificate of Compliance prior to occupancy of each residential building.	Compliance required with internal noise criteria in affected areas.

B. Controls

1) Acoustic Requirements

a) An acoustic report, prepared by an accredited acoustic consultant approved by Council, shall be submitted at each relevant stage of development, as specified in Table E3.5: Acoustic Requirements.

b) A certificate of compliance, prepared by an accredited acoustic consultant approved by Council, shall be submitted at each relevant stage of development, as specified in Table E3.5: Acoustic Requirements.

c) If Council considers that an acoustic report or certificate of compliance does not adequately address all relevant issues, or provide all relevant information, Council may require additional acoustic surveys to be undertaken or the submission of additional information.

d) Noise attenuation measures along Andrews Road and Castlereagh Road shall be designed to be consistent with the landscape setting of the estate.

e) Noise attenuation measures shall consist of a range of treatments such as (but not limited to) landscaped mounds, varied setbacks, appropriate building designs, acoustic treatments (such as double glazing) and acoustic barriers.

f) Noise attenuation measures shall integrate with and complement the design and siting of the proposed residential development.

g) Landscape planting in any acoustic measures shall comply with the Landscape Design section of this Plan.

2) Noise Measurement Criteria

a) A minimum of 2 weeks' measurement of ambient noise levels, which provides a minimum of 150 valid data samples.

b) A minimum of 1 week's measurement of traffic noise.

c) A minimum of 2 weeks measurement of industrial noise, which provides a minimum of 150 valid data samples, for each of the specified time periods, being:

   i) noon to 4.00pm (day time)

   ii) midnight to 4.00am (night time).

d) A minimum of 4 logger points, at the worst affected locations as specified by Council, within the Waterside site.

e) A minimum of 2 logger points for control monitoring, at relevant locations specified by Council, outside the Waterside site (e.g. Graham Close and Echo Place).

3) Noise Prediction Criteria

a) The acoustic report is to include, where relevant, predictions using a recognized calculation procedure, such as the Calculation of Road Traffic Noise (CORTN) or the FHWA method and the latest available annual average daily traffic volume figures supplied by the Roads and Maritime Services (RMS) or Council.

b) The acoustic report is to recognise, where relevant, future traffic noise levels, given anticipated changes in usage.

4) Report & Certificate Information

a) The following information, where relevant, shall be provided with each acoustic report or certificate:

   i) Details of local topography, existing and proposed buildings, and exposed or shielded situations which may affect the results *(and any relevant allowances made)*;

   ii) Details of meteorological conditions during the periods of acoustic measurement;

   iii) The measured noise levels for all noise sources in (2)(b), 2(c) and 2(d) above;

   iv) The predicted traffic noise levels at specified locations, being the midpoint of each site boundary and, where relevant, 1m from the external facade walls of each floor of any building;

   v) Details of outdoor noise levels relevant to the calculated interior noise levels for each building;

vi) The sound insulation performance ratings of external facade walls in terms of individual components and composite construction (*test result data may be required)*;

vii) Plans and sections of the site detailing buildings, logger locations and other relevant details; and

viii) A statement of opinion confirming compliance with the relevant acoustic criteria.

5) Acoustic Requirements – R1 General Residential zone

a) Dwellings in the R1 General Residential zone shall not be occupied unless the indoor and outdoor noise levels comply with the provisions of the Waterside Clause in Penrith LEP 2010.

b) Acoustic barriers shall be provided along the site's Castlereagh Road frontage. The acoustic barriers must be designed to achieve compliance with the provisions of the Waterside Clause in Penrith LEP 2010.

c) The acoustic barriers may comprise a combination of earth mounding, timber, steel, bricks, concrete and transparent acrylic and may be integrated with residential development such as in the case of 'E' type dwellings.

d) Dense landscaping shall be provided between the acoustic barriers and Castlereagh Road to maintain aesthetic appeal.

e) Where the 'Building Interior Noise Criteria' outlined in the LEP are exceeded, after construction of the acoustic barrier along Castlereagh Road, additional sound-rated glazing for affected rooms may be required.

f) An acoustic report, prepared by an accredited acoustic consultant approved by Council, shall be submitted with any development application for a dwelling, which verifies compliance with the relevant provisions of the Waterside Clause in Penrith LEP 2010.

3.2.2.4 Landscape Planting and Open Space

A. General Objectives

a) To ensure that development meets sound environmental planning practices and standards.

b) To enhance the landscape character of the area.

c) To enhance the views through and across the subject land to Penrith Lakes, the Nepean River and the Blue Mountains.

d) To ensure that the design and establishment of development, community facilities, open space and waterways is undertaken in an integrated fashion.

e) To provide open spaces which are safe and inviting to use.

f) To encourage the most effective, orderly and economic provision of service infrastructure for the area.

g) To preserve the natural landscape where feasible and provide habitat for native fauna.

h) To encourage planting of species appropriate to both the development and the locality.

i) To retain significant trees wherever possible.

j) To provide landscaping which screens and softens building mass and roof form, particularly when viewed from surrounding areas.

k) To encourage the grouping of landscaped areas between adjoining development to consolidate open space areas and allow a greater density of tree planting.

l) To encourage landscaping that is suitably integrated with acoustic treatment, particularly along the boundaries of the site.

B. Specific Objectives for the R1 General Industrial zone

Tree Preservation

a) To preserve the natural landscape where feasible, and provide habitat for native fauna.

Landscaping

a) To embellish the site through quality landscaping.

b) To encourage the planting of species consistent with the overall estate development and surrounding locality.

Planting

a) To encourage the planting of species consistent with the overall estate development and surrounding locality.

b) To encourage the planting of trees that when mature are similar in scale to the specific developments.

c) To provide screening where required and to ‘soften’ building masses through appropriate tree planting layout and species selection.

d) To encourage the grouping of landscaped areas between adjoining developments to consolidate open space areas that allow a greater density of tree planting.

Landscaped Open Space

a) To ensure that adequate landscaped open space is provided for residential development, and

Private Open Space

a) To ensure that adequate private open space is provided for residential development.

B. Controls

1) Design Elements

a) Design of open space areas and buildings shall enhance existing views and create opportunities for additional views within and through Waterside.

b) Dwellings shall face towards streets, open spaces, footpaths and cycleways to provide for visual surveillance of public spaces.

c) A minimum 40m separation shall be provided between dwellings and/or other buildings on opposite edges of a lake or lateral waterway.

d) Existing trees are to be preserved when possible, and supplemented by additional landscape planting.

e) Pedestrian pathways and cycleways shall be linked to provide a safe, integrated and continuous pedestrian/cycle network around the lake system and within the development.

f) Pathways must not be fenced from view, except where they are short straight paths between properties, with both ends visually open.

g) Evergreen and flowering hedges are encouraged as a strong visual component of all streetscapes.

h) Super-advanced tree planting shall be planted along all roadways, and fast-growing species are encouraged.

i) Large canopy native trees which are common to this region, including those species currently present, shall be planted along the major roads and throughout the open space areas and shall consist of species such as:

   i) Casuarina cunninghamiana

   ii) Casuarina glauca

   iii) Eucalyptus amplifolia

   iv) Eucalyptus moluccana

   v) Eucalyptus tereticornis

   vi) Melaleuca linariifolia

   vii)Schinus areira

j) Planting along avenues, and feature planting in the open space areas shall consist of species such as:

   i) Acer negundo

   ii) Celtis australi

   iii) Gleditsia ‘sunburst’

iv) Lagerstroemia indica

v) Populus deltoids

vi) Populus yunnanensis

k) Landscape planting in shareways and access ways shall consist of small scale plantings such as:

i) Callistemon citrinus

ii) Callistemon viminalis

iii) Camellia sasanqua

iv) Lagerstroemia indica

v) Magnolia grandiflora

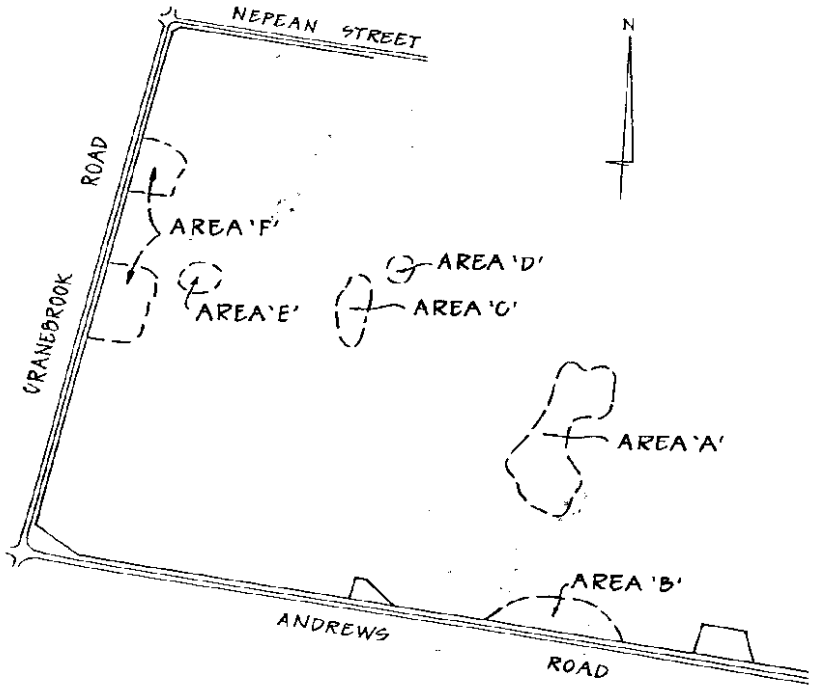
vi) Melaleuca linarifolia

vii) Melaleuca styphelioides

viii) Robinia psuedoacacia “Frisia”

l) Water edge treatment is subject to Council being satisfied that public safety and maintenance have been adequately addressed.

Figure E3.9 - Existing vegetation on site *(Plan courtesy of Bowdens Group)*



2) Tree Preservation

a) The 7 factors in Section 5A of the *Environmental Planning and Assessment Act 1979* must be taken in account and be addressed in any development application that may impact on vegetation within mapped 'Area A' in Figure E3.9 Existing vegetation on site.

b) A rehabilitation and management plan shall be prepared for the stand of trees mapped as Area A, which includes a requirement for the removal of the weeds that currently exist on the site, and to ensure its future use as a public reserve. A planting regime will be required in conjunction with a management regime to suppress further weed growth.

c) Care should be taken to ensure that the Grey Box E. *Moluccana* is not affected or impacted upon by altering the existing hydrological processes in the course of earthworks or any other works.

3) Landscaping

a) Plant species shall generally be chosen from the suggested species list provided in Table E3.6: Suggested Species List.

b) The Castlereagh Road, Nepean Street and Laycock Street frontages are to be densely planted between the boundary alignment and the carriageway.

c) Sydney Water and Integral Energy are to be consulted with regard to the location of landscape planting along Castlereagh Road, to prevent any conflict with service provision.

d) No imported topsoil is to be used. All existing topsoil must be stockpiled and rehabilitated on the site.

4) Planting

a) Landscape planting and built elements shall be used to provide internal privacy without obstructing views from dwellings.

b) Property owners are encouraged to plant species from the suggested species list provided in Table E3.6: Suggested Species List in this Section.

c) The planting of *Typha orientalis - Cumbungi* is prohibited due to the adverse impact that species has on waterway systems.

d) 2m wide landscaped areas are to be provided between car parking aisles.

e) In car parking areas, trees should be planted every 10 spaces in defined planting nibs a minimum of 2m wide.

5) Landscaped Open Space

a) The following minimum landscaped open space requirements apply for each dwelling type:

i) A' type dwellings 50% of site area

ii) B' type dwellings 40% of site area

iii) C' type dwellings 35% of site area

iv) D' type dwellings 35% of site area

v) E' type dwellings 20% of site area

b) Any landscaped area having a dimension less than 2.0m shall not be included in the calculation of landscaped open space for A, B and C Type dwellings only.

c) Private open space is included in the calculation of landscaped open space.

d) Notwithstanding Control 5(a), where single story dwellings are proposed, the minimum landscaped open space requirements are as follows for A and B Type dwellings:

i) A' type dwellings 50% of site area (where allotments are >550m^2)

ii) A' type dwellings 40% of site area (where allotments are 450-550m^2)

iii) B' type dwellings 30% of site area

6) Private Open Space

a) An area of usable private open space, at ground level as a garden or courtyard, or as a balcony, shall be provided for each dwelling

b) 'A' 'B' 'C' and 'E' type dwellings are to have a minimum of 20% of the lot area allocated as private open space which is to include:

i) A principal area of 24m^2 with a minimum dimension of 4m, directly accessible from a major living area of the dwelling; and

ii) At least 65% of the private open space is to be unroofed soft landscaping excluding swimming pools and outdoor rooms.

c) Upper storey 'E' type dwellings are to have a minimum of 20% of the lot area allocated as private open space which is to include a principal area of 24m^2 with a minimum dimension of 4m, directly accessible from a major living area of the dwelling.

d) Private Open space for 'D' type dwellings is to be determined by design.

e) The principal area of private open space shall be located to:

i) have direct access from the living room(s),

ii) to receive at least 3 hours of sunlight between 9am – 3pm on June 21 each year,

iii) maximise privacy for the residents and neighbours, and

iv) minimise overshadowing from adjoining properties.

f) Private open space can be made up of more than 1 courtyard provided that 1 area has a minimum area of 24m² and a minimum width of 4.0m.

g) Where the siting and location of 'D' type dwellings prevents adequate solar access to private open space, an alternative building design providing private open space in the form of roof terraces, may be considered.

Table E3.6 - Suggested Species List

Native Trees	
Angophora floribunda	Rough-barked Apple
Casuarina cunninghamiana	River Oak
Casuarina glauca	Swamp Oak
Eucalyptus amplifolia	Cabbage Gum
Eucalyptus crebra	Narrow-leaved Ironbark
Eucalyptus elata	Peppermint
Eucalyptus globoidea	White Stringybark
Eucalyptus maculata	Spotted Gum
Eucalyptus moluccana	Grey Box
Eucalyptus sideroxylon	Pink Flowered Iron Bark
Eucalyptus tereticornus	Forest Red Gum
Ficus hillii	Hills Weeping Fig
Lophostemon confertus	Brush Box
Melaleuca decora	Paperbark
Melaleuca linariifolia	Snow in Summer
Melaleuca quinquenervia	Broad-leaved Paperbark
Melaleuca styphelioides	Prickly-leaved Paperbark
Tristaniopsis laurina	Water Gum
Native Shrubs	
Acacia implexa	Hickory
Acacia decurrens	Sydney Green Wattle
Acacia parramattensis	Parramatta Green Wattle

Callistemon sp.	Bottle Brush
Daviesia ulicifolia	Gorse Bitter-pea
Dillwynia juniperina	Prickly Parrot-pea
Dodonaea viscosa purpurea	Hop Bush
Grevillea ‘Honey Gem’	Grevillea
Indigofera australis	Native Indigo
Native Aquatic Plants	
Carex appressa	Tall Sedge
Cyperus gunnii	Spike
Elaeocharis acuta	Rush
Elaeocharis sphacelata	Common Rush
Juncus usitatus	Tassel Cord-rush
Resteo tetraphyllus	
Scirpus validus	
Exotic Street Trees	
Fraxinus oxycarpa	Claret Ash
Gleditsia “Sunburst”	Honey Locust
Lagerstroemia indica	Crepe Myrtle
Pistacia chinensis	Chinese Pistacia
Prunus sp	Cherry
Sapium sebiferum	Chinese Tallowood
Ulmus parvifolia	Chinese Elm
Zelkova serrata	Japanese Elm
Grasses and Accents	
Agrostis avenacea	Blown Grass
Cymbopogan refractus	Barbed Wire Grass
Carex appressa	Tussock Sedge

Cyperus exaltatus	Tall Flat-sedge
Cyperus polystachyos	
Dianella revoluta	Spreading Flax Lily
Danthonia sp	Wallaby Grass
Dichelachne micrantha	Short-hair Plume Grass
Echinopogon caespitosus	Tutted Hedgehog Grass
Eragrostis elongata	Lavender Grass
Gahnia sieberiana	Red-fruited Saw-sedge
Hermarthriz uncinata	Matgrass
Lomandra longifolia	Spiny-headed Mat-rush
Microlaena stipoides var stipoides	Weeping meadow Grass
Phragmites australis	Common Reed
Poa labillardieri Eskdale	Tussock Grass
Themeda australis	Kangaroo Grass

3.2.2.5 Roads and Car parking

A. Objectives

General Objectives

a) To ensure the road network is designed and constructed to provide long term performance with minimal maintenance.

b) To ensure that development meets sound environmental planning practices and standards.

c) To ensure a safe and efficient internal road system, and a safe and secure environment for pedestrians and cyclists.

d) To prevent direct vehicular access to or from any development from designated roads (Castlereagh Road).

e) To ensure the provision of safe, convenient and attractive car parking areas throughout the estate for the use of residents and visitors.

f) To encourage the most effective, orderly and economic provision of service infrastructure for the area.

g) To provide distinct, functional and attractive entrances to the development.

h) To avoid disruptions to through traffic travelling along Castlereagh and Andrews Roads.

i) To clearly define road hierarchies through effective planting.

j) To provide convenient and functional public transport routes.

k) To ensure that adequate on-site parking is provided to meet the needs of each development.

l) To ensure parking area layout enhances the function and appearance of the development.

m) To screen parking areas from public view.

n) To ensure that underground parking entrances and loading docks do not dominate building facades and do not detract from the streetscape.

Road Network Objectives

a) To provide distinct, functional and attractive entrances to the site.

b) To avoid disruptions to through traffic travelling on the main thoroughfares of Castlereagh Road and Andrews Road.

c) To delineate road hierarchies through effective road planting.

d) To provide convenient, safe and publicly accessible bicycle/pedestrian paths.

e) To provide convenient and functional public transport routes.

On-Site Parking and Pedestrian Access Objectives

a) To ensure each development provides adequate parking on site to accommodate all parking demands generated by the development.

b) To encourage the development of a parking layout which enhances the function and appearance of the development.

c) To ensure that garage doors and entrances to underground car parking areas do not dominate building facades and do not detract from the desired streetscape.

d) To ensure safe and functional pedestrian movement.

B. Controls

1) Road Network and Design

a) All roads shall be generally designed and constructed in accordance with the road widths outlined in the Transport, Access and Parking Section of this Plan and the Road Hierarchy shown at Figure E3.10 – Road Hierarchy.

b) The significant entries to the estate shall be located generally in accordance with Figure E3.12: Key Design Elements (Waterside Residential).

c) All roads into and within the estate shall be landscaped with super-advanced trees and plants.

d) Roads within the estate shall be constructed above the 1% AEP flood level.

e) Direct vehicular access from any designated road shall not be permitted, other than access for existing dwellings, or access via the defined entries to the estate.

f) Access for developments, from Castlereagh Road or the 'Entry Avenue' off Laycock Street, shall only be permitted via an approved road. Individual driveways for site-specific developments will not be permitted.

g) Roads within the estate shall be designed to minimise traffic speeds, maximise traffic and pedestrian safety and provide visual reinforcement for different functions by the use of a variety of surface materials and colours.

h) Roundabouts shall be constructed to specifications, and at locations, to be determined by Council. Specifically roundabouts or similar control mechanisms will be required at the intersections of:

    i) McCarthy's Lane and Castlereagh Road.

    ii) Andrews Road and Laycock Street.

i) All roads are to be sign posted at their design speed.

j) On completion of the Laycock Street extension, Nepean Street shall be closed and rehabilitated.

k) Bus bays/shelters are to be provided to specifications, and at locations, to be determined by Council.

l) The bus shelters must be constructed from high quality materials and designed to complement the surrounding streetscape.

m) Traffic calming devices shall be provided to specifications, and at locations, to be determined by Council.

n) An evacuation plan for the residents and visitors of the estate shall be developed in conjunction with the State Emergency Service. Details of this plan shall be submitted to Council prior to occupation of any residential development.

2) Pedestrian / Cycleway Network

a) Publicly accessible bicycle / pedestrian paths are to be provided in the locations shown on the map at Figure E3.11: Land Accessible to the Public.

b) A physical barrier and median strip refuge must be provided where the bicycle / pedestrian paths intersect with a roadway.

c) Parking areas are to be designed to minimise vehicular / pedestrian conflict. A pedestrian pathway connection between the car parking areas and the building access points shall be provided.

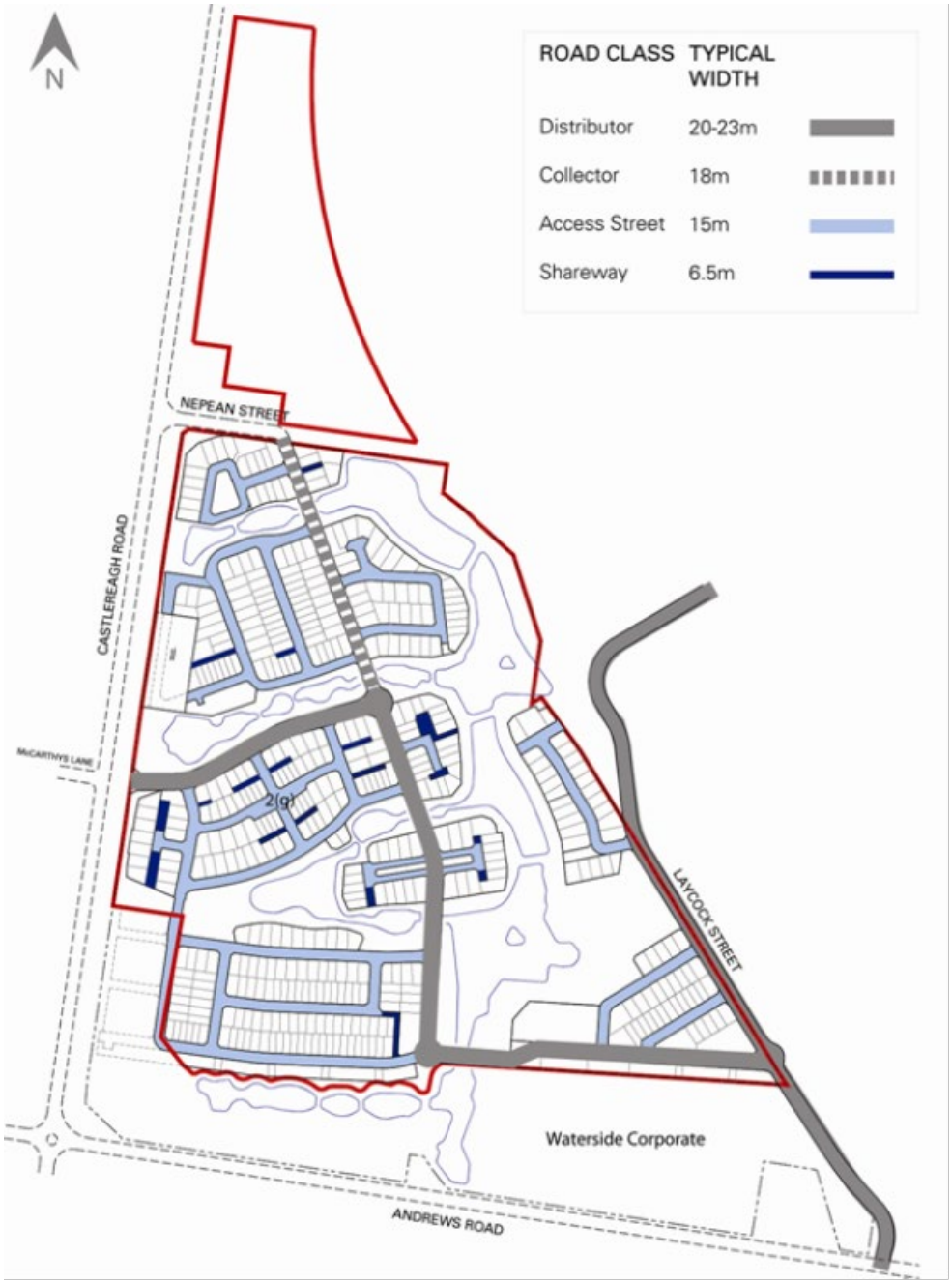


Figure E3.10 – Road Hierarchy

Figure E3.11 – Land Accessible to the Public

3) Garage Requirements

a) Garages must not dominate the streetscape.

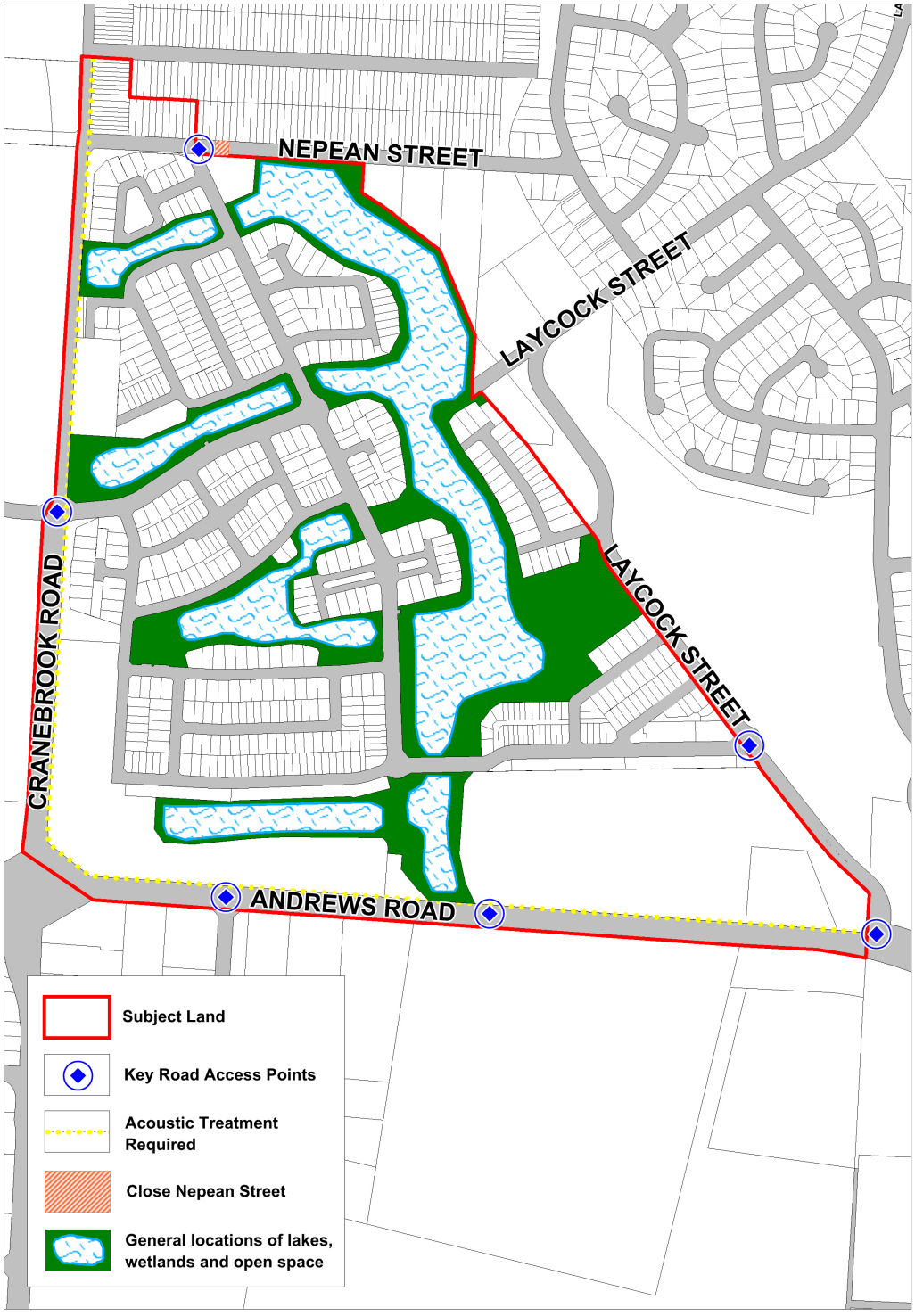
b) Where an access way is provided to a lot, garages are to be at the rear of the site.

c) Where there are no access ways, garages should be carefully integrated with the built form of the dwelling.

d) Garages facing rear access ways should be positioned to create a private open space for the dwelling while allowing for views from the dwelling to the access way.

e) To maintain access way security, habitable rooms over garages are encouraged.

Figure E3.12: Key Design Elements (Waterside Residential)



3.2.2.6 Residential Development

This Part provides more detail objectives and performance criteria for a variety of typical development forms.

A. Objectives

Residential development in Waterside shall be designed to:

a) Provide specific controls for residential development in Waterside.

b) Be compatible in scale with the mass and character of adjacent building types.

c) To ensure development is appropriately scaled to suit the dwelling's local context.

3.2.2.6.1 Dwelling Types

The dwelling types which reflect the controls in the next section are described as follows:

'A' type Dwelling – Custom House Lots

Lots 450m^2 or greater, sold as land upon which housing, constructed by any builder, may be constructed provided the design complies with this section and any adopted Design Guidelines. The house will generally be detached, in single or two storey form. Lot modules are *generally* a 15m or greater frontage and a 30m or greater depth.

Figure E3.13: Type 'A' Dwelling example

'B' type Dwelling – Designer Lots

Lots 300m^2 or greater, but less than 450m^2, sold as land to the public, upon which, housing, constructed by one of only three pre-selected builders, using pre-approved designs (complying with this section and any adopted Design Guidelines) may only be constructed. The house may be either attached or detached, single, part single and part two storey (to

avoid overshadowing of solar courts) or two storeys. Lot modules are *generally* 10m x 30m (with zero lot line) or 12.5m x 30m. Garages may be on the lot boundary.

Figure E4.14: Type 'B' dwelling example (1)

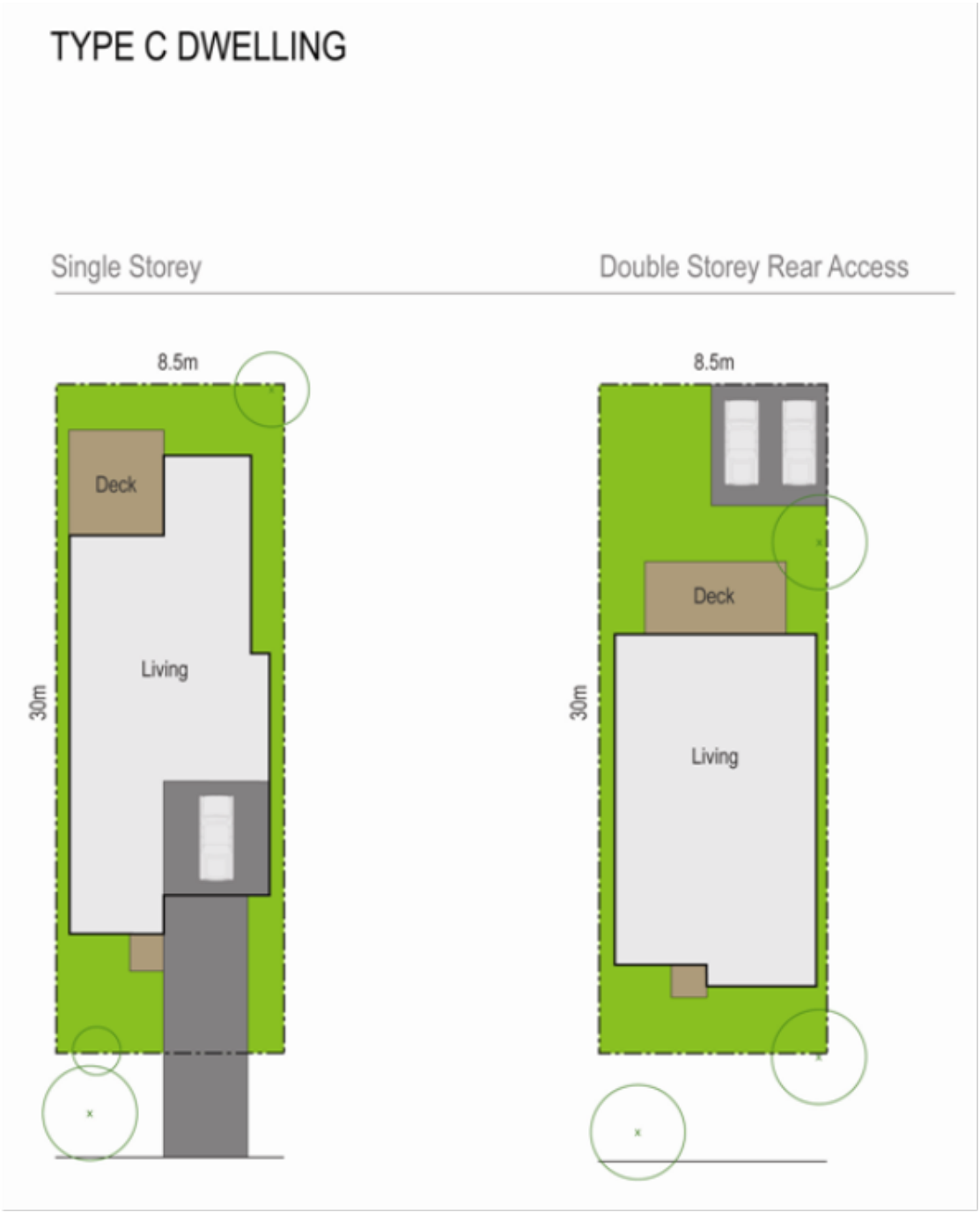
Figure E3.15: Type 'B' dwelling example (2)

TYPE B DWELLING

'C' type Dwelling – Terrace & Courtyard Lots

Lots 200m^2 or greater, but less than 300m^2, which have had the final house design submitted and approved at the subdivision stage. The house will be either attached (i.e. one of two terraces) or detached on a zero lot line with a courtyard.

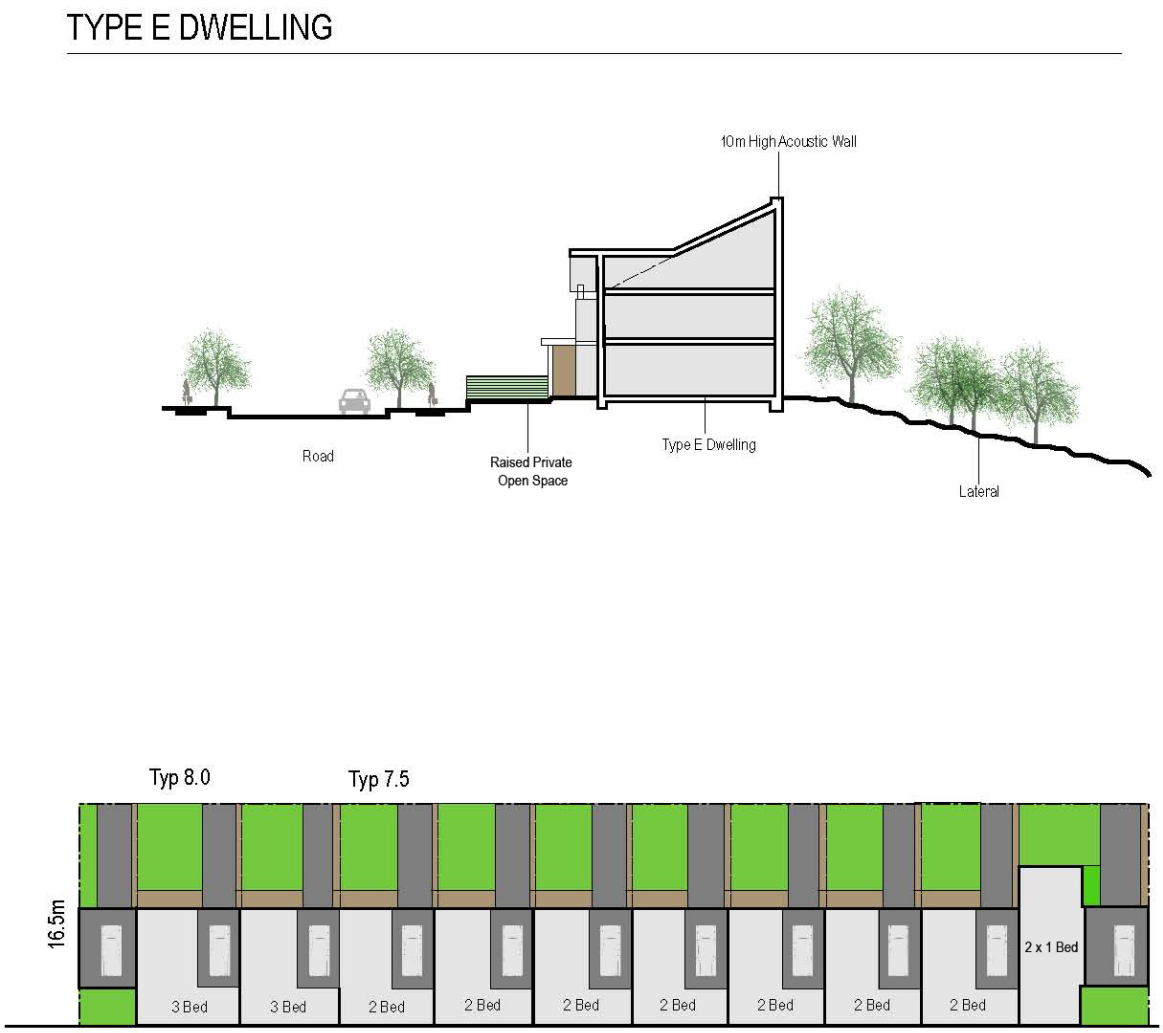
Figure E3.16: Type 'C' dwelling example



'D' type Dwelling means three (3) storey multi-unit housing.

'E' type Dwelling - these dwellings are designed to provide acoustic attenuation for parts of the R1 General Residential zoned land to ensure compliance with the Waterside Clause of Penrith LEP 2010. They are to be constructed as interconnected terraces comprising of two to three storeys with single garages. Each dwelling is to be integrated into the design of an acoustic wall, which will form the rear wall of the dwellings and will not have any openings. A principle private open space area for each dwelling is to be located to the front of the dwelling, which is to be sufficiently separated from the adjacent street and ensures adequate privacy for occupants. These dwellings may be Torrens or Strata titled.

Figure E3.17: Type 'E' dwelling example



3.2.2.6.2 Residential Development Controls

Design Element	'A' Type Dwellings	'B' Type Dwellings	'C' Type Dwellings	'D' Type Dwellings	'E' Type Dwellings
Height (max)	2 storeys	2 Storeys	2 Storeys	3 Storeys	3 Storeys
Front Setback (min)	4.5m	4.5m	3.5m	4.5m setback or see State Government's *"Residential Flat Design Code"* for guidance	4.5m
Front setback – Porches and verandahs (min)	3m	3m	2.5m		2.5m
Side Setbacks (min)	0.9m	0m on one side, single storey only	0m on one side, single storey only	Refer to State Government's *"Residential Flat Design Code"* for guidance	0m on both sides
	2.5m to secondary street for corner lots	0.9m alternate side and for upper floor	0.9m alternate side and for upper floor		2.5m to secondary street for corner lots
		2.5m to secondary street for corner lots	2.5m to secondary street for corner lots		
Rear Setbacks (min)	4m for single storey	4m for single storey	4m for single storey	Refer to State Government's *"Residential Flat Design Code"* for guidance	0m
	6m for upper floor	6m for upper floors (2m incursion for 20%)	6m for upper floors (2m incursion for 20%)		
		0m for rear garage	0m for rear garage		
Landscaped Open Space Area (min)	50% of site area	40% of site area	30% of site area	35% of site area	20% of site area
Landscaped Open Space – Single Storey Dwellings (min)	40% of site area where lot is < 550m^2	30% of site area	30% of site area	N/A	N/A

Design Element	'A' Type Dwellings	'B' Type Dwellings	'C' Type Dwellings	'D' Type Dwellings	'E' Type Dwellings
Private Open Space Area (min)	20% of lot area	20% of lot area	20% of lot area	Refer to State Government's *"Residential Flat Design Code"* for guidance	20% of lot area, or an area of 24m^2 for upper floor dwellings

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Part B – Cranebrook Neighbourhood Centre

3.3 Community Land / Group Neighbourhood Centre Cranebrook

1) Development in the Cranebrook Neighbourhood Centre, as shown in Figure E3.18, should be consistent with Figure E3.18 below.

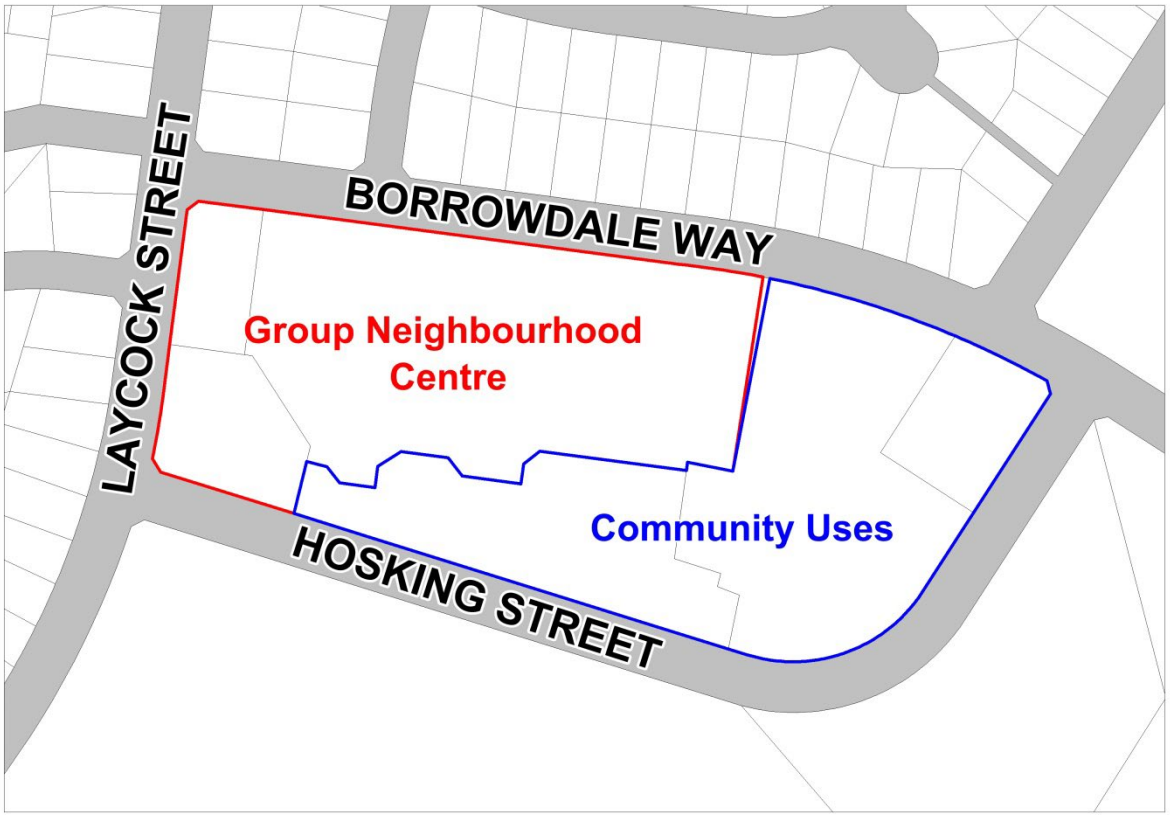

Figure E3.18: Cranebrook Community Land/Group Neighbourhood Centre

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Part C Cranebrook Rural Residential Development

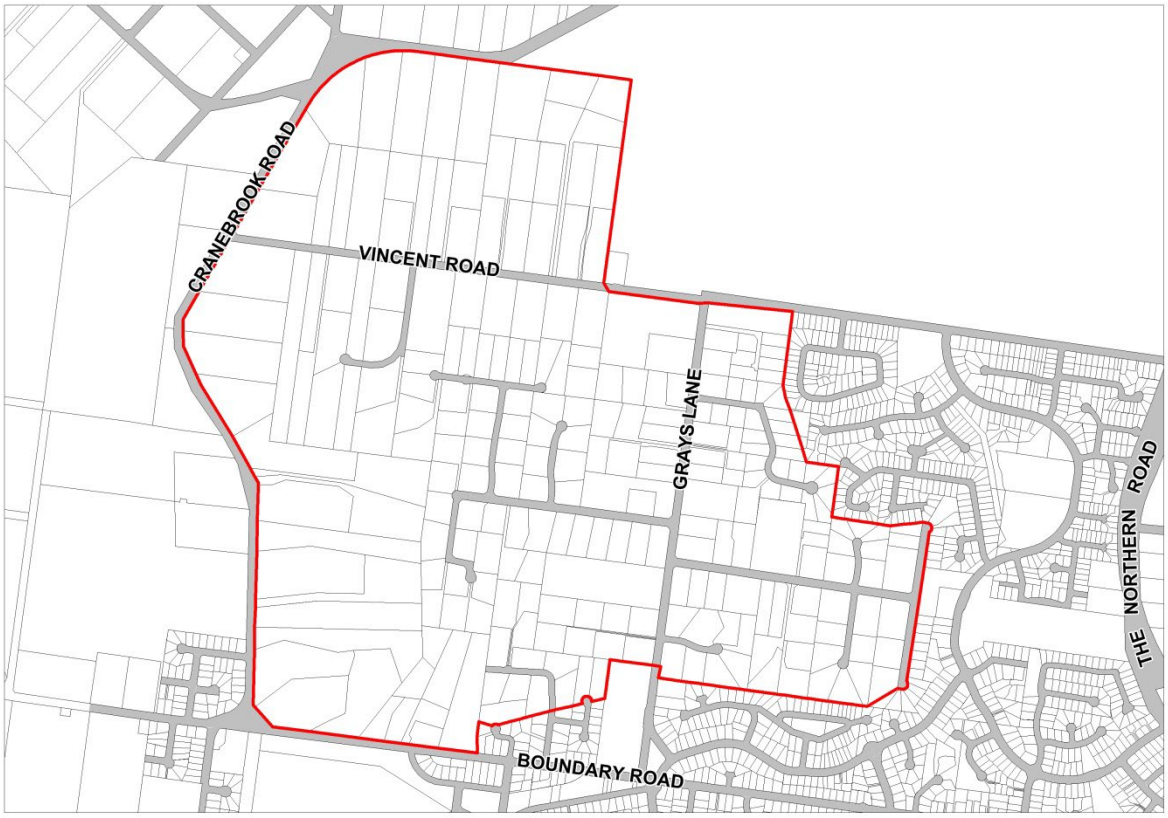
3.4 Cranebrook Rural Residential Development

3.4.1 Introduction

3.4.1.1 Land to which this Part Applies

This section applies to land located in the vicinity of Cranebrook Road, Boundary Road and Vincent Road, Cranebrook as shown in Figure E3.19 below.

Figure E3.19: Land to which this Part applies



3.4.1.2 General Objectives

a) To maintain a flexible, objectives-based approach to future detailed planning and development in the area;

b) To recognise and respect the environmental quality, rural character and existing lifestyle characteristics of the area, whilst enabling further development opportunities; and

c) To encourage development in a manner that assists the establishment of a community with its own identity, which is integrated with its surroundings;

Further detailed objectives are provided for specific aspects of development.

3.4.2 Specific Objectives and Policies

3.4.2.1 Access and Roads

Rural residential development in Cranebrook will necessitate the construction of new roads, and result in an increase in traffic using existing roads.

A. Objectives

a) To preserve the rural character and streetscape of existing roads in the area;

b) To encourage a standard of road design for new roads which:

   i) Complements the rural character and streetscape of existing roads in the area; and

   ii) Reflects the function of the road.

c) To minimise encroachment of urban area traffic, and particularly to the denial of through-vehicular access from the residential release area to Linden Crescent;

d) To encourage the provision of internal roads;

e) To make provision for upgrading existing roads;

f) To encourage the shared use of roads and road reserves by pedestrians and cyclists;

g) To encourage identity for the rural community

h) To enhance opportunities for further subdivision if required in the future; and

i) To encourage direct road access and the minimisation of battle-axe lots; as found in traditional rural subdivision and development.

B. Controls

1) The road reservation requirements in this Section override those outlined in the Transport, Access and Parking section of this Plan where they are inconsistent.

2) All new roads and access ways are to be constructed to the following requirements:

   a) Road reservation – 20m;

   b) Road construction – 6m centre seal, to be constructed in accordance with Council's standard for rural roads;

   c) Grass table drains to be provided in all circumstances, except for steep areas where concrete drainage will be required;

   d) One way cross falls may be considered in appropriate circumstances; and

   e) Battle axe access – 20m, to provide for road reservation potential with 3m sealed driveway.

3) Council may agree to a narrower road reservation where the Developer can satisfactorily demonstrate that:

   a) The objectives of the Local Environmental Plan and this DCP can still be achieved;

   b) All services can be adequately accommodated within the road reservation, together with landscaping;

   c) Rural style fencing is provided; and

   d) The engineering requirements can be satisfied.

4) All roads and accessways should complement the rural character and streetscape of the existing streets in the area;

5) A low density of development is maintained along the Vincent Street frontage;

6) No through vehicular access shall be permitted between the Cranebrook residential release and Linden Crescent;

7) On-street parking is discouraged. Parking demand from new development should be accommodated on-site;

8) All new roads should be designed for low traffic volumes. Road reservation treatments should provide for safe access by pedestrians and cyclists;

9) A programme of landscaping and street planting will be undertaken along;

   a) Existing roads; and

   b) Proposed roads.

10) Landscaped threshold treatment should be given at the entrance to all new roads;

11) All access roads and driveways should follow the natural contours where possible;

12) Existing sealed roads in the area may need to be upgraded in some areas to satisfy the likely traffic increases. This may be achieved by:

   a) Section 94 contributions, where the total cost of significant works is divided proportionately by the number of new lots to be created; or

   b) Conditions of development consent, where each subdivision provides for specialised work adjacent to their property.

13) The following figures (Figures E3.21 – E3.26) show some road concepts, access layout and landscaping.

14) In general, subdivision should provide public road frontage to new lots. Battle-axe frontage for new lots is discouraged.

Figure E3.20: Roadside Treatment and Layout on Slope

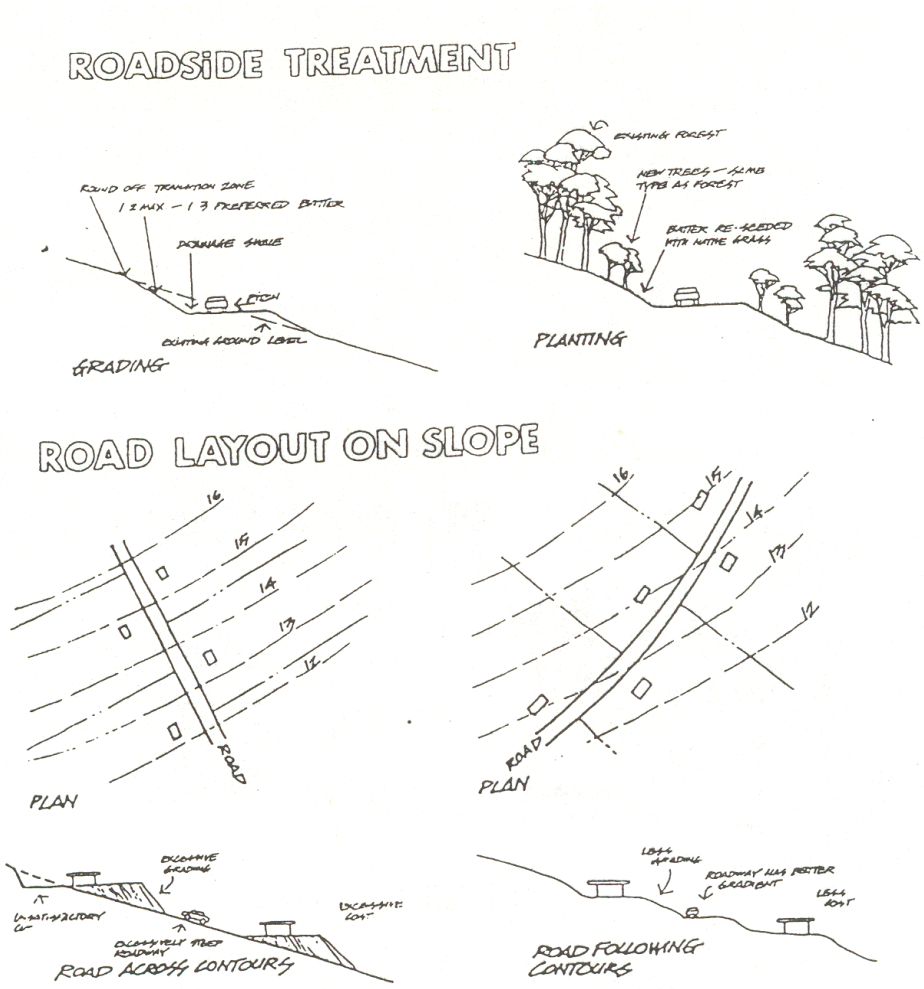
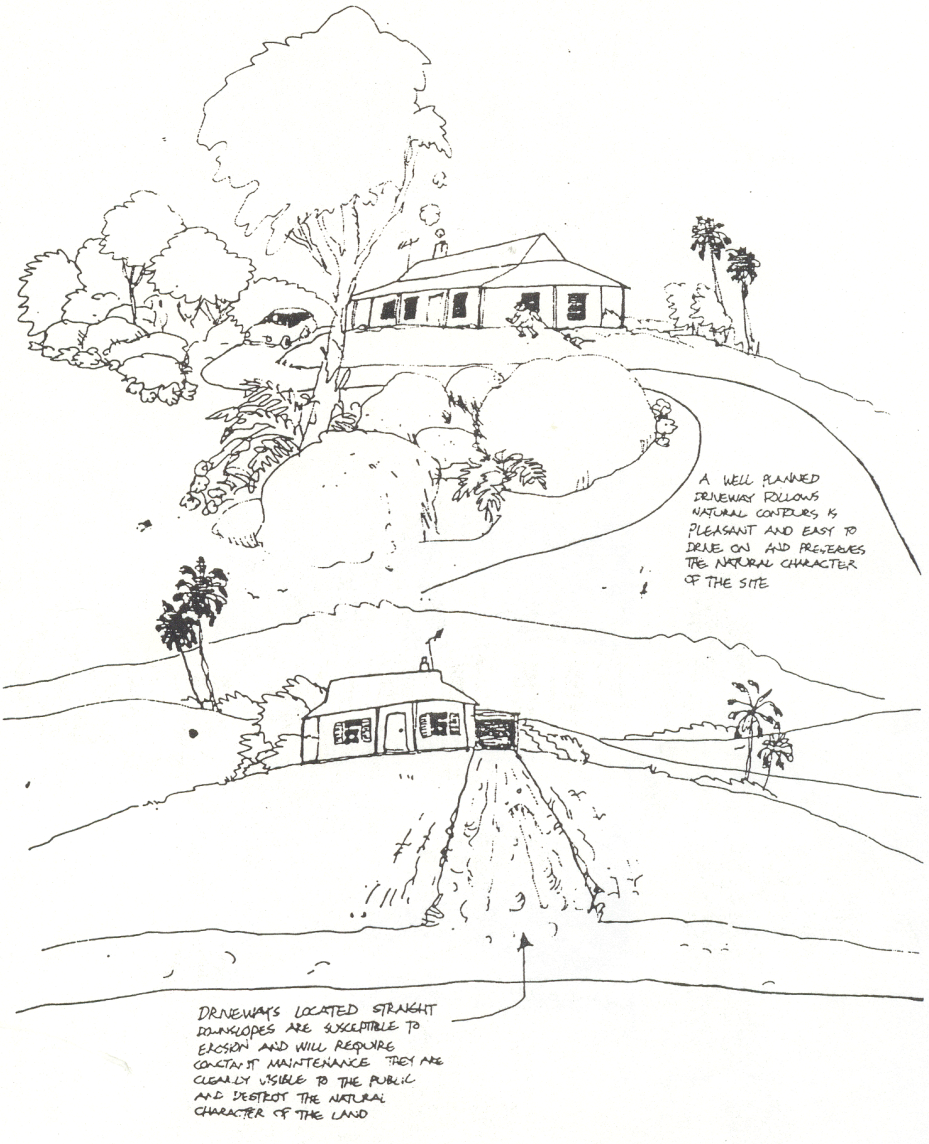
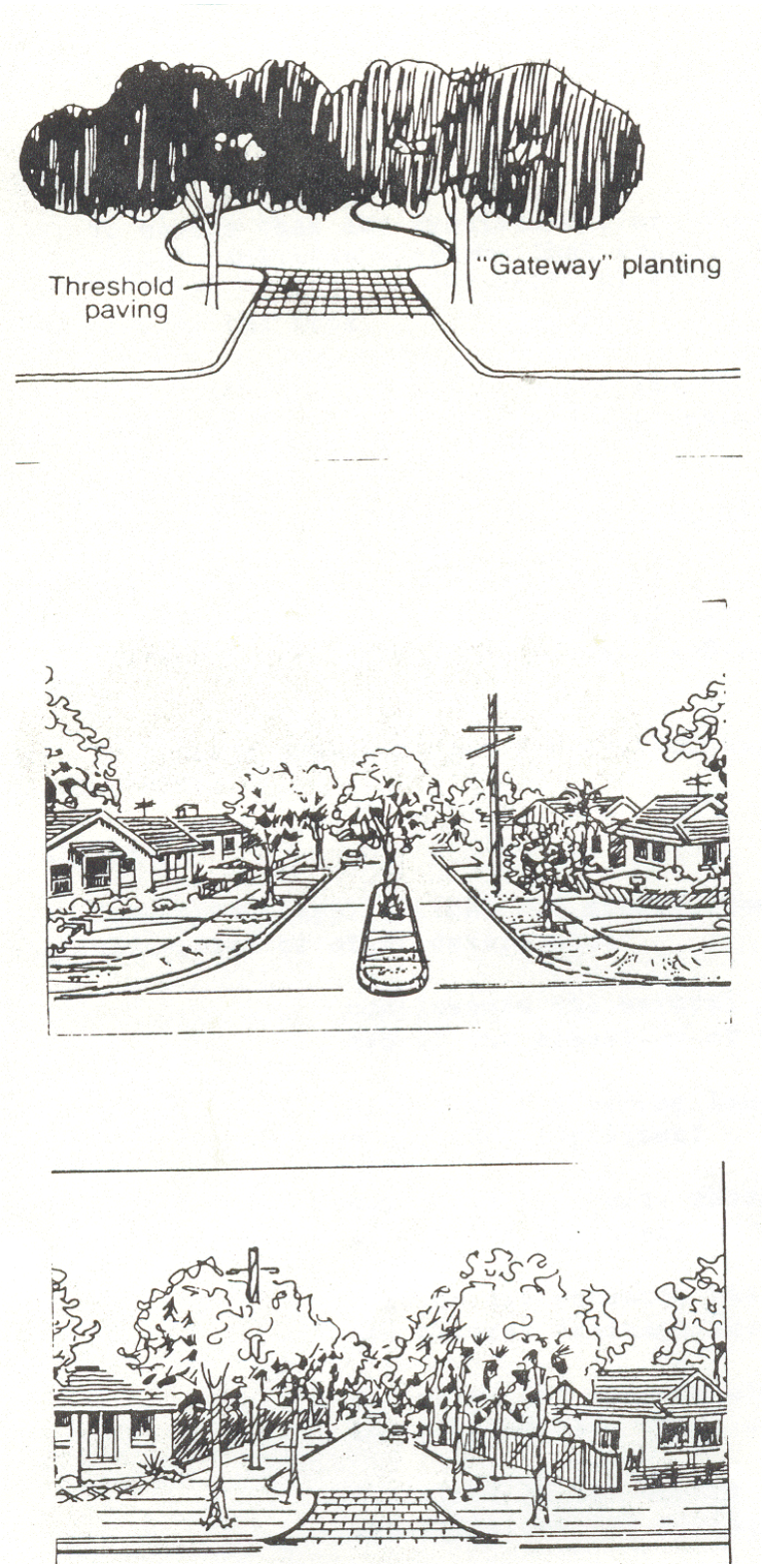


Figure E3.21: Example of access layout and landscaping (1)



E3.22: Example of access layout and landscaping (2)



3.4.2.2 Subdivision and Layout

The minimum lot sizes in Cranebrook are to be in accordance with the LEP. The following provisions provide additional objectives and controls for subdivision in the Cranebrook rural area.

A. Objectives

a) To ensure that any subdivision, or likely subsequent development, achieves a scheme that recognises and maximises the opportunities offered by the physical attributes and rural character of the area.

b) To encourage direct road access and the minimisation of battle-axe lots, as found in traditional rural subdivision and development.

c) To achieve adequate protection of valuable items of heritage significance.

d) To provide a gradual transition of density controls between the Cranebrook urban and rural areas, running generally east to west.

e) To enhance opportunities for further subdivision if required in the future.

B. Controls

1) Development applications for subdivision should ensure that any subdivision or other development:
   a) Complements the natural features of slope, aspect and elevation of the land;
   b) Maintains the strong landscape presence along the ridgelines;
   c) Maintains the rural character and visual quality of the area;
   d) Retains and enhances the existing vegetation and natural drainage courses;
   e) Minimises the effects of intrusive elements in the landscape (e.g. overhead utilities);
   f) Maximises in lot design valuable opportunities for sunlight and views;
   g) Retain existing dams wherever possible.
2) In general, subdivision should provide public road frontage to new lots;
3) Battle-axe frontage for new lots is discouraged.
4) Subdivided lots of a simple shape will be encouraged, with boundaries responsive to physical features. Applicants should refer to Figure E11.8 on the following page for examples. Awkward irregular lots and long thin lots will be discouraged. A maximum depth to width ratio of 1:4 is generally to be applied.
5) In that land within the E4 Environmental Living zone where there is discretion for further subdivision, applications for subdivision should also;
   a) Nominate future dwelling locations (Once approved, future dwelling locations will be identified by means of a restriction on the property title.); and
   b) Address the impact on existing vegetation and landscape and provide supporting landscape proposals.
6) All subdivision in the vicinity of an item of Environmental Heritage shall maintain a suitable curtilage.

3.4.2.3 Built Structures

A. Objectives

a) To ensure that all improvements are complementary to the natural features such as landscape, ridgelines, topography.

b) To ensure that all development achieves a scheme that recognises and maximises the opportunities offered by the rural character and physical attributes of the area.

c) To encourage consideration of all the rural components of development such as fencing, outbuildings, driveways and landscaping, in the design of proposed development.

B. Controls

1) All development for dwellings, outbuildings, and other buildings should:
   a) Complement the natural features of slope, aspect and elevation of the land;
   b) Maintain the strong landscape presence along the ridgelines;
   c) Maintain the rural character and visual quality of the area;
   d) Retain and enhance the existing vegetation and natural drainage courses;
   e) Minimise the effects of intrusive elements in the landscape (e.g. overhead utilities).
2) All development for residential purposes should maximise opportunities for sunlight and consider the effect of the development on adjoining properties.
3) All built structures should be designed to complement and enhance the rural environment. This includes consideration of the: -
   a) Height
   b) Location
   c) Setback
   d) Shape
   e) Building materials
   f) External features of all proposed buildings.
4) Increased development along ridgelines is discouraged.
5) Landscape plans will be required with development applications for built structures.
6) Boundary fencing should be of an open, rural character, in line with that normally found in rural areas. No objections are raised to internal courtyard fencing, or entry fencing provided such fencing is sensitive to the rural environment.

Figure E3.23: Design Approaches to the Site

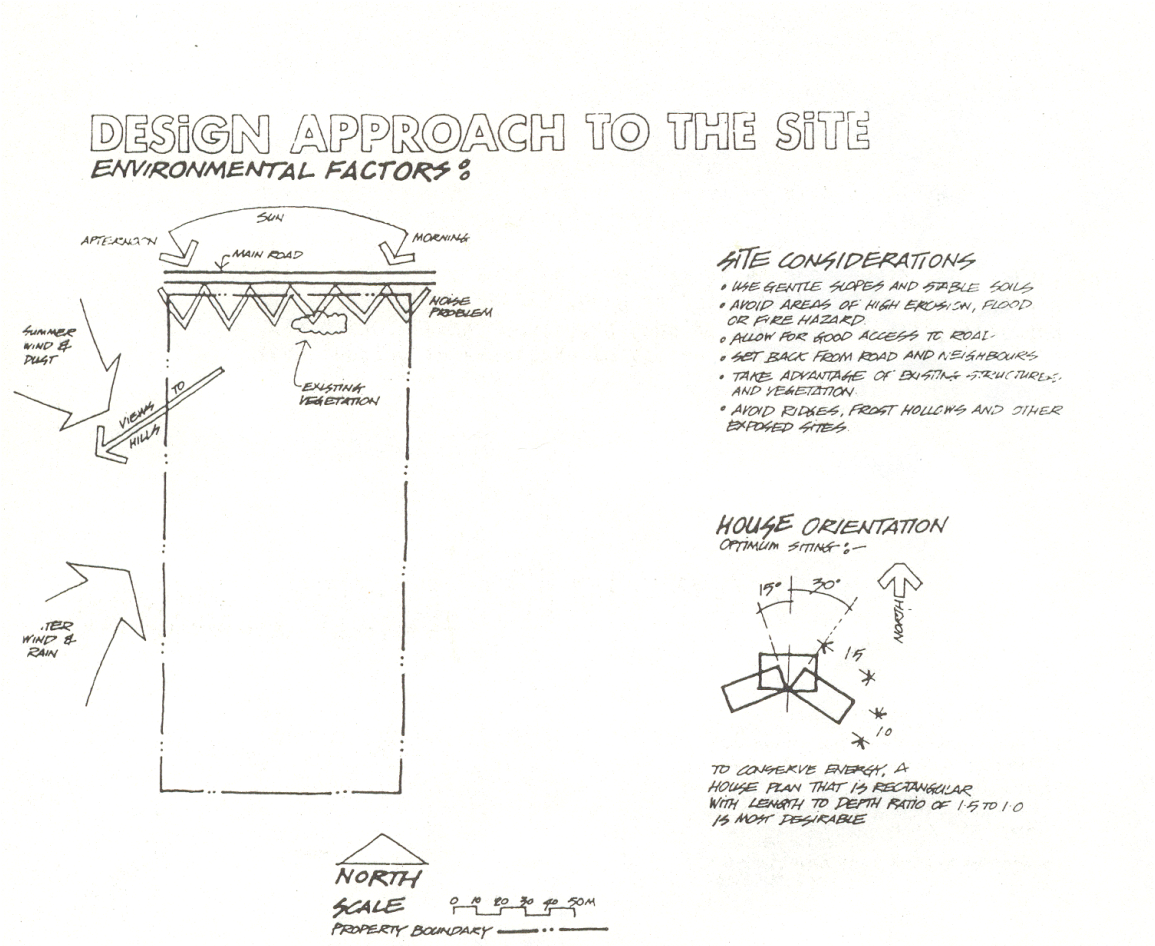


Figure E3.24: Example of a Design Approach

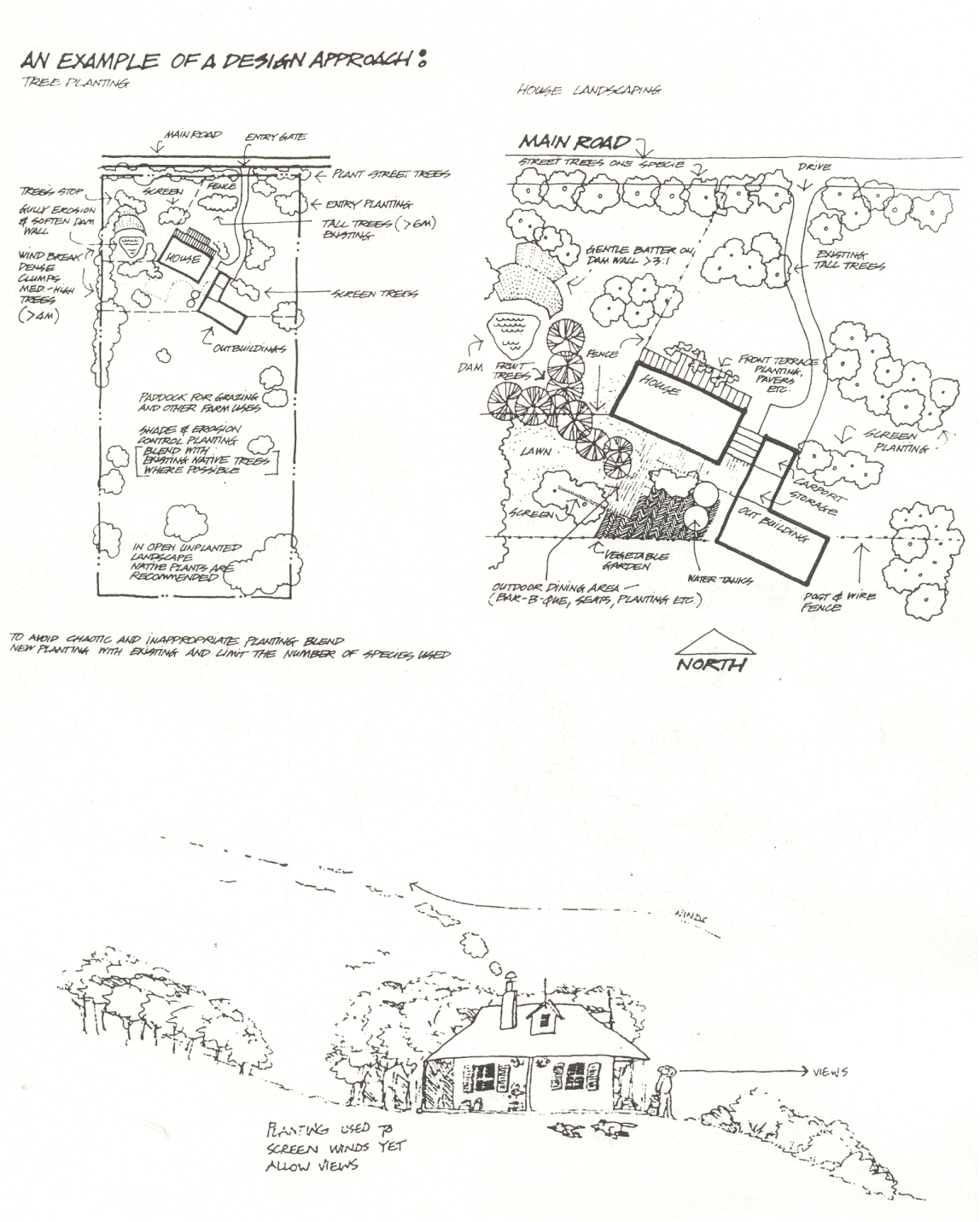
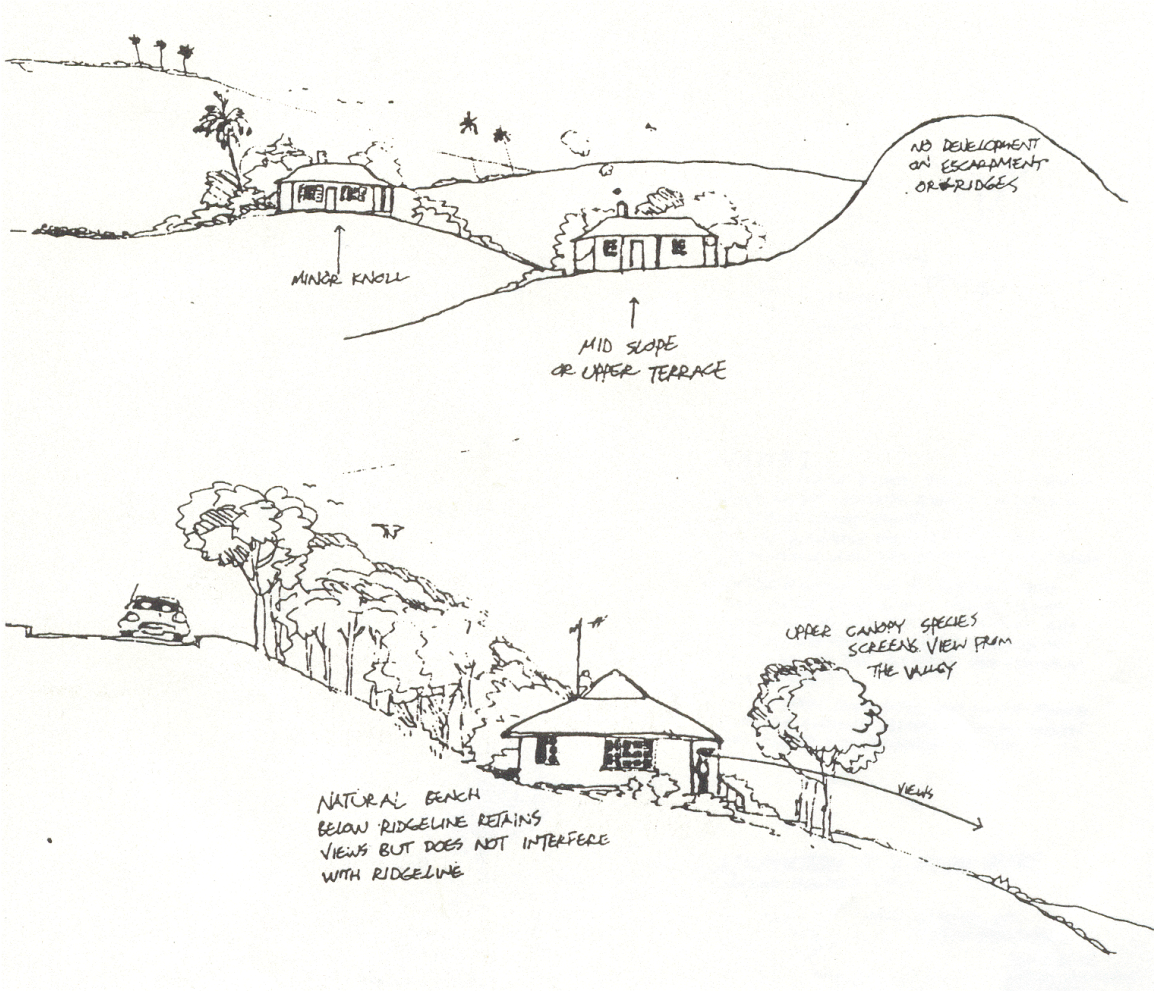
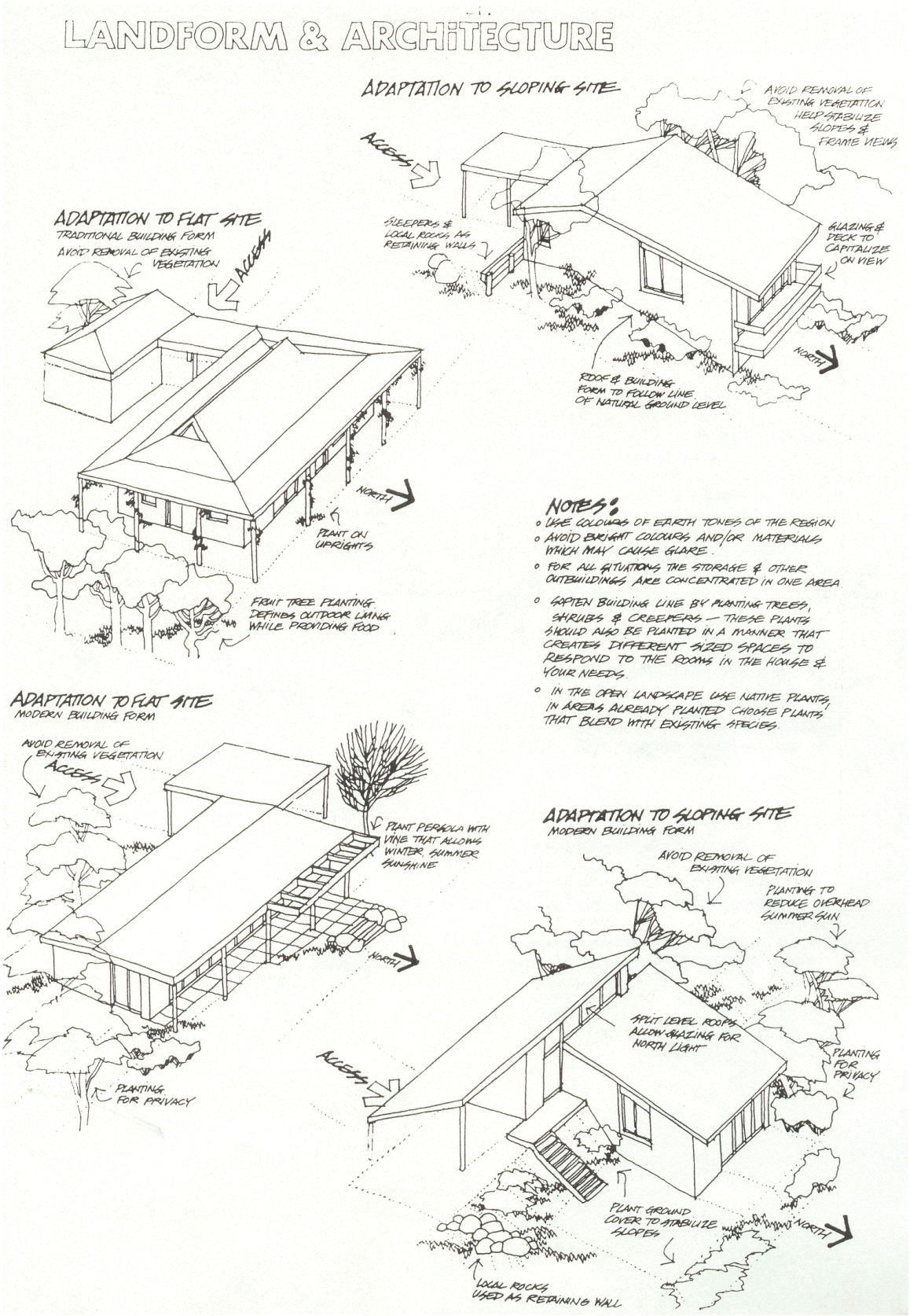


Figure E3.25: Example of design approach on slope




LANDFORM & ARCHITECTURE
ADAPTATION TO SLOPING SITE
AVOID REMOVAL OF EXISTING VEGETATION HELP STABILIZE SLOPES & FRAME VIEWS
ACCESS
SLEEPERS & LOCAL ROCKS AS RETAINING WALLS
GLAZING & DECK TO CAPITALIZE ON VIEW
NORTH
ROOF & BUILDING FORM TO FOLLOW LINE OF NATURAL GROUND LEVEL
ADAPTATION TO FLAT SITE
TRADITIONAL BUILDING FORM
AVOID REMOVAL OF EXISTING VEGETATION
ACCESS
NORTH
PLANT ON UPRIGHTS
FRUIT TREE PLANTING DEFINES OUTDOOR LIVING WHILE PROVIDING FOOD
NOTES:
USE COLOURS OF EARTH TONES OF THE REGION
AVOID BRIGHT COLOURS AND/OR MATERIALS WHICH MAY CAUSE GLARE.
FOR ALL SITUATIONS THE STORAGE & OTHER OUTBUILDINGS ARE CONCENTRATED IN ONE AREA
SHAPEN BUILDING LINE BY PLANTING TREES, SHRUBS & CREEPERS — THESE PLANTS SHOULD ALSO BE PLANTED IN A MANNER THAT CREATES DIFFERENT SIZED SPACES TO RESPOND TO THE ROOMS IN THE HOUSE & YOUR NEEDS.
IN THE OPEN LANDSCAPE USE NATIVE PLANTS, IN AREAS ALREADY PLANTED CHOOSE PLANTS THAT BLEND WITH EXISTING SPECIES.
ADAPTATION TO FLAT SITE
MODERN BUILDING FORM
AVOID REMOVAL OF EXISTING VEGETATION
ACCESS
PLANT PERGOLA WITH VINE THAT ALLOWS WINTER SUNSHINE
NORTH
PLANTING FOR PRIVACY
ADAPTATION TO SLOPING SITE
MODERN BUILDING FORM
AVOID REMOVAL OF EXISTING VEGETATION
PLANTING TO REDUCE OVERHEAD SUMMER SUN
SPLIT LEVEL ROOFS ALLOW GLAZING FOR NORTH LIGHT
PLANTING FOR PRIVACY
ACCESS
PLANT GROUND COVER TO STABILIZE SLOPES
NORTH
LOCAL ROCKS USED AS RETAINING WALL

3.4.2.4 Landscape

A. Objectives

a) To retain and enhance the existing landscape, and where disruption is necessary, to minimise the impact of that disruption; and

b) To identify areas of particular landscape value requiring specialised treatment.

B. Controls

1) Existing vegetation should be retained wherever practicable, particularly significant groups of natural vegetation;

2) Where vegetation must be removed, additional planting of native species may be required;

3) Existing vegetation should be preserved and reinforced;

   a) Along important ridgelines; and

   b) In the vicinity of natural drainage lines.

4) Plans of landscaping will be generally required for all development applications;

5) In that land within the E4 Environmental Living zone where there is discretion for further residential development it will be necessary to:

   a) Nominate future dwelling locations;

   b) Address the impact of existing vegetation and landscape; and

   c) Provide alternative supporting landscaping proposals.

6) The removal of trees shall be in accordance with the Vegetation Management Section.

3.4.2.5 Community Facilities

A. Objectives

a) To provide for the reasonable demand for community facilities and playing fields created by future residents; and

b) To encourage social integration with adjacent residential areas by shared use, and contribution towards the development of community facilities and playing fields.

B. Controls

1) To assess and monitor community needs for the area;

2) To provide details on the provision of community facilities and playing fields for the use of residents; and

3) To require contribution towards community facilities and playing fields in accordance with the assessed needs with any new development.

3.4.2.6 Services

A. Objective

a) To ensure the provision of suitable services to the area in a manner that is cost effective and complementary to the overall objectives for the area.

3.4.2.6.1 Water Supply/Effluent Disposal

A. Controls

1) Prior to the issue of development consent on any land, satisfactory arrangements must be made with Sydney Water and Council (within their respective areas of responsibility) for:
   a) Amplification and reticulation of water services to the land to which the application relates (unless Sydney Water certifies that the carrying out of development in accordance with that consent will not require the making of any such arrangement);
   b) Amplification and reticulation of sewerage services in the case of development creating lots less than 4,000m^2 in area;
   c) On-site disposal of effluent for development not requiring sewerage reticulation. Landowners are encouraged to install aerated disposal systems to minimise environmental impact.

3.4.2.6.2 Drainage

A. Objectives

a) To preserve and upgrade the existing drainage system, and to minimise major engineering works; and

b) To maintain the quality of stormwater discharge into the downstream drainage system.

B. Controls

1) The existing drainage system is to be retained;
2) Engineered drainage channels are to be provided only in exceptional circumstances;
3) Grass-swale drainage is to be provided, except in steeper areas where concrete lined inverts may be necessary;
4) All development should minimise runoff and related pollution, particularly in the vicinity of natural drainage lines;
5) A monetary contribution will be required to upgrade road drainage. This contribution will be imposed under Section 94 of the Environmental Planning and Assessment Act; and
6) Dams should be retained wherever possible.

3.4.3 Maps

The following maps illustrate the road layouts of Cranebrook, as well as the various amendments to the DCP which apply to the subject land.

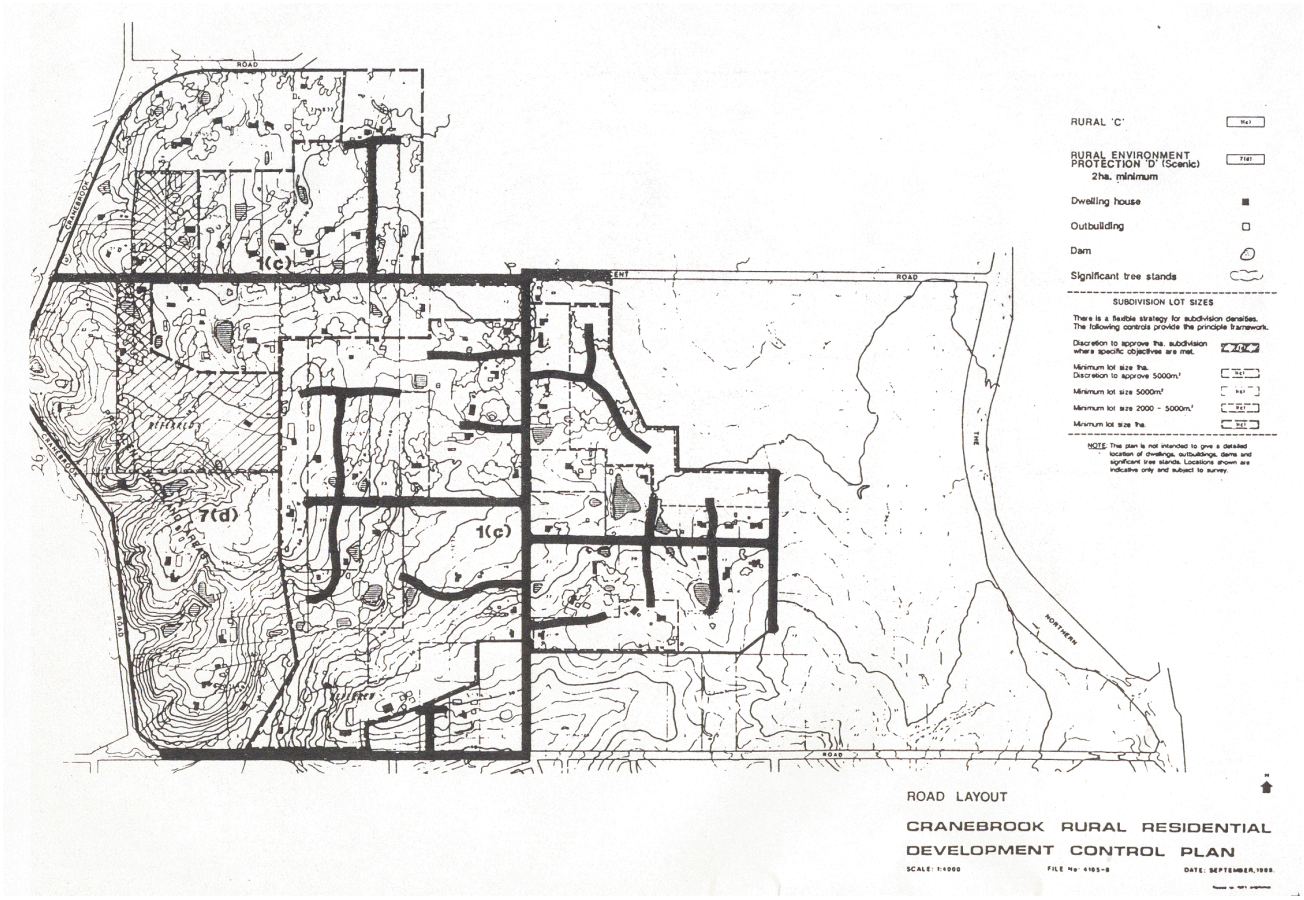

ROAD
1(c)
7(d)
1(c)
ROAD
ROAD
RURAL 'C'
RURAL ENVIRONMENT PROTECTION 'D' (Scenic) 2ha. minimum
Dwelling house
Outbuilding
Dam
Significant tree stands
SUBDIVISION LOT SIZES
There is a flexible strategy for subdivision densities. The following controls provide the principle framework.
Discretion to approve 1ha. subdivision where specific objectives are met.
Minimum lot size 1ha. Discretion to approve 5000m²
Minimum lot size 5000m²
Minimum lot size 2000 - 5000m²
Minimum lot size 1ha.
NOTE: The plan is not intended to give a detailed location of dwellings, outbuildings, dams and significant tree stands. Locations shown are indicative only and subject to survey.
ROAD LAYOUT
CRANEBROOK RURAL RESIDENTIAL DEVELOPMENT CONTROL PLAN
SCALE: 1:4000
FILE No: 4105-8
DATE: SEPTEMBER, 1988.

Figure E3.28: Amendment to DCP (1)

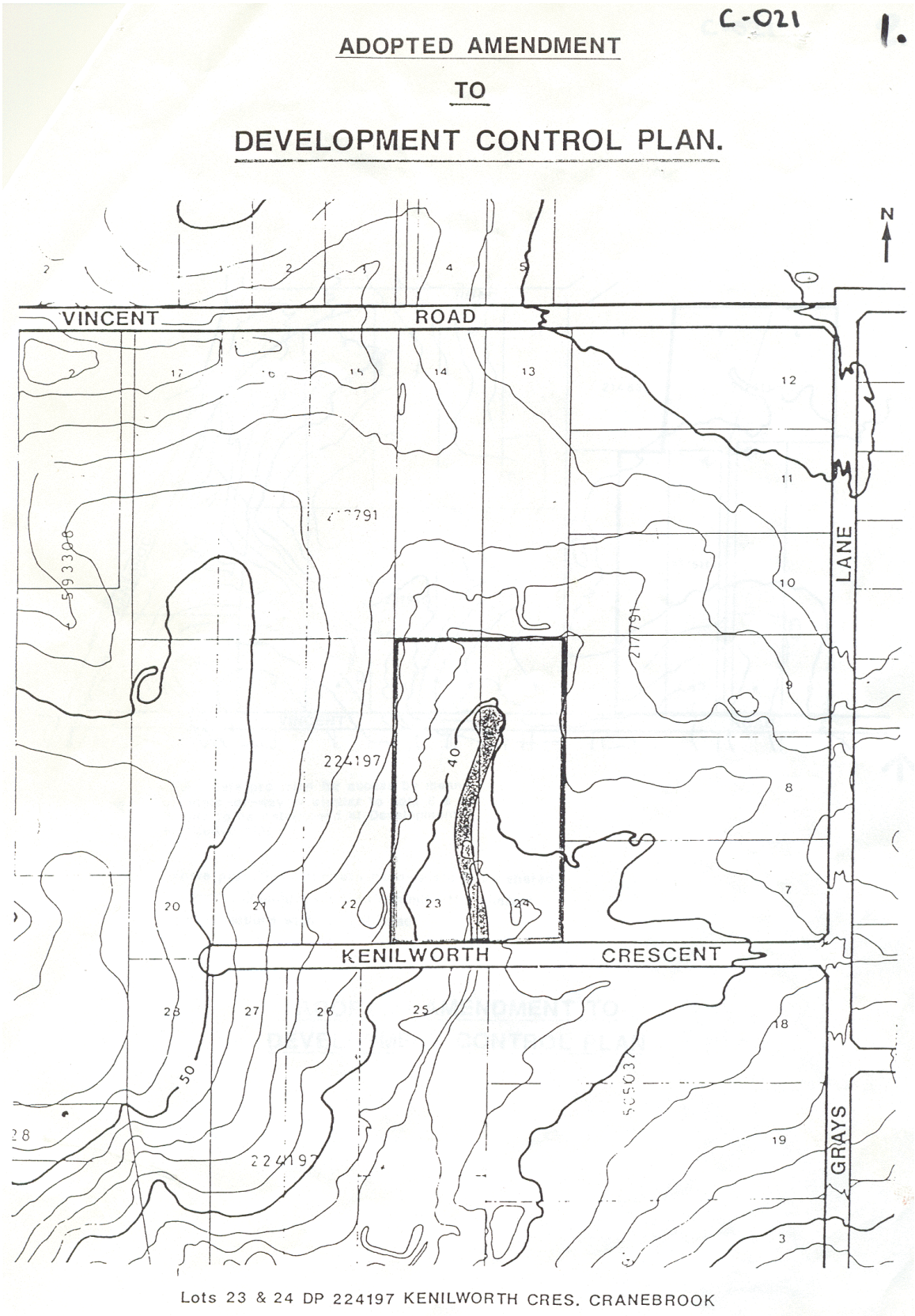
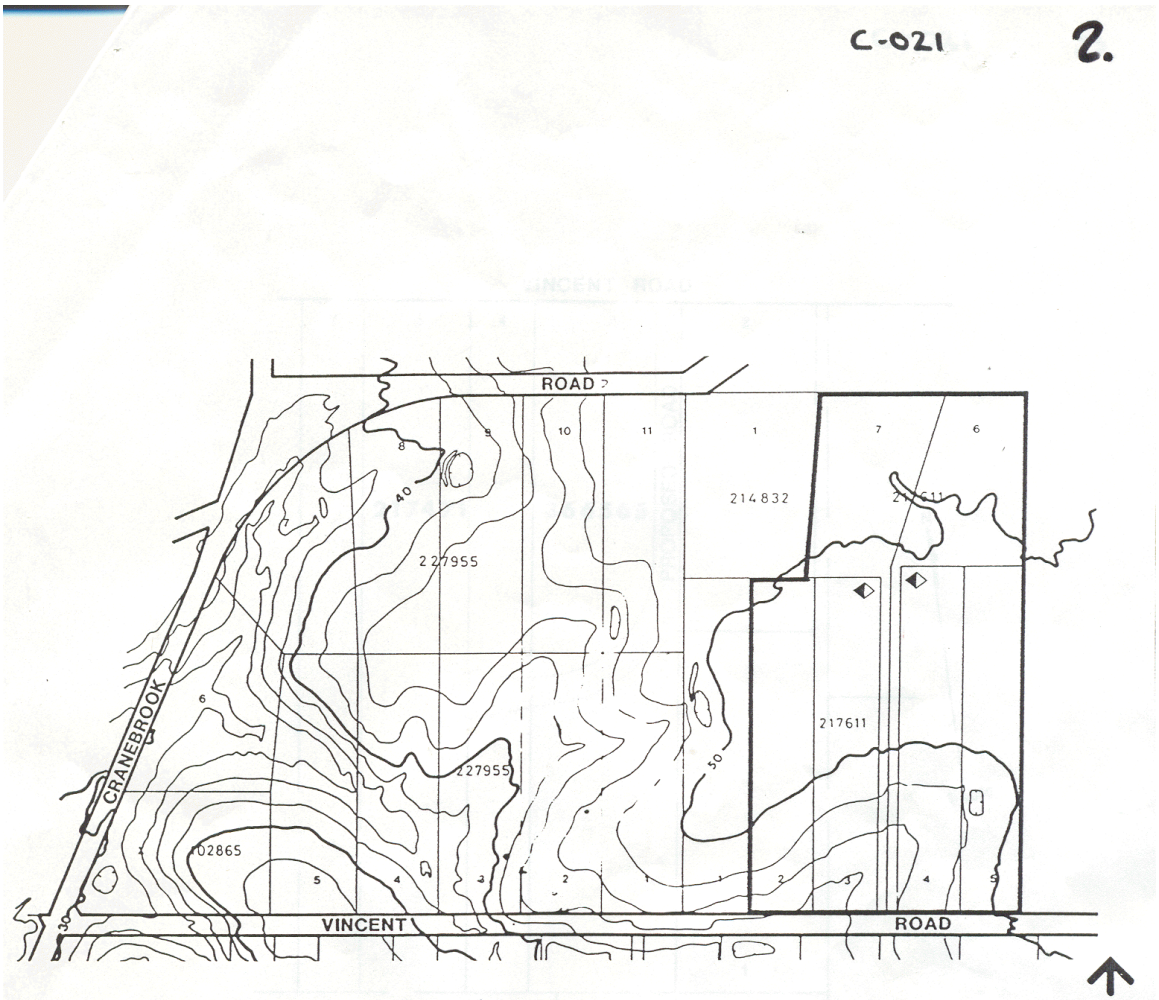
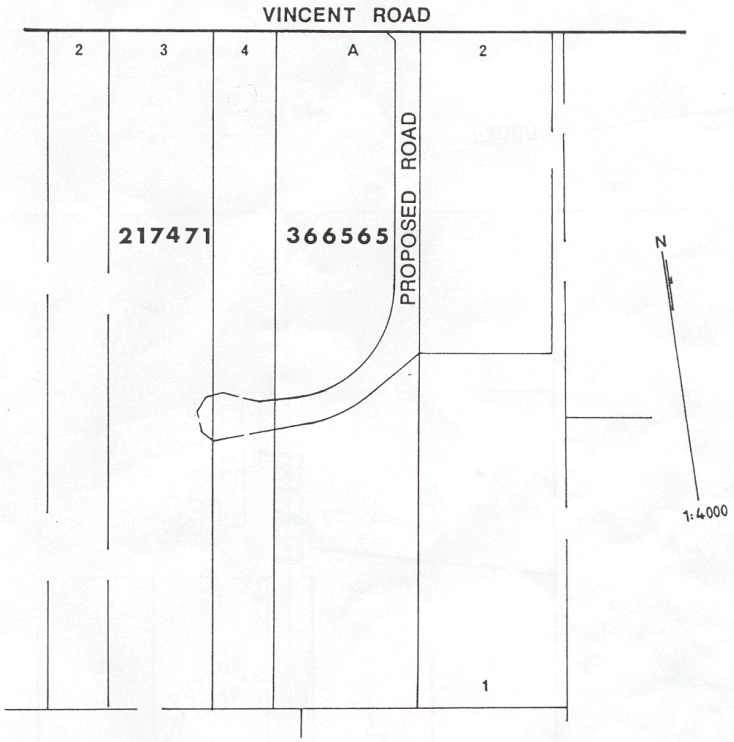


Figure E3.29: Amendment to DCP (2)



C-021 3.



ADOPTED AMENDMENT TO
DEVELOPMENT CONTROL PLAN

3/10/89 4105-8 Pt6

Figure E3.31: Amendment to DCP (4)

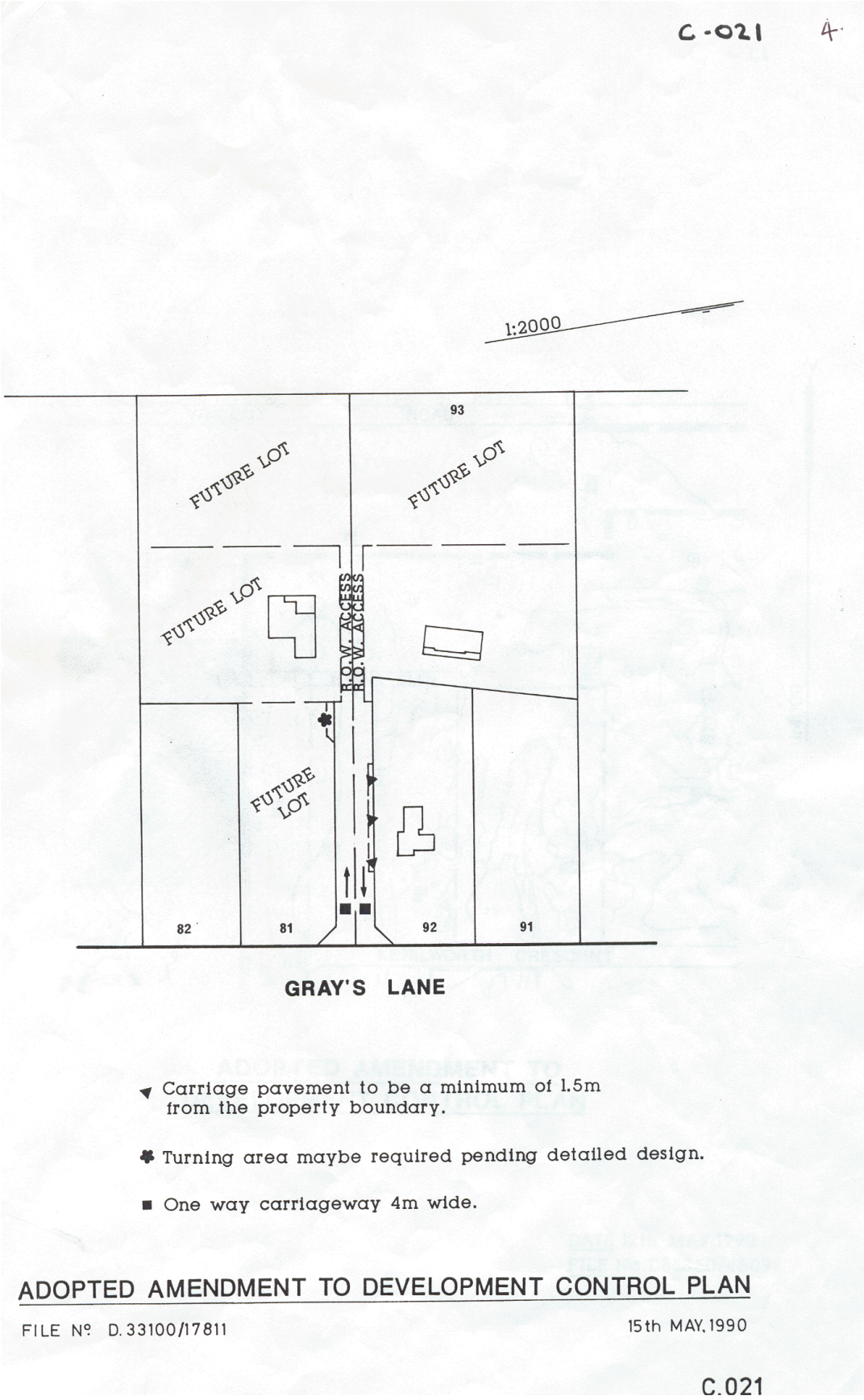


Figure E3.32: Amendment to DCP (5)

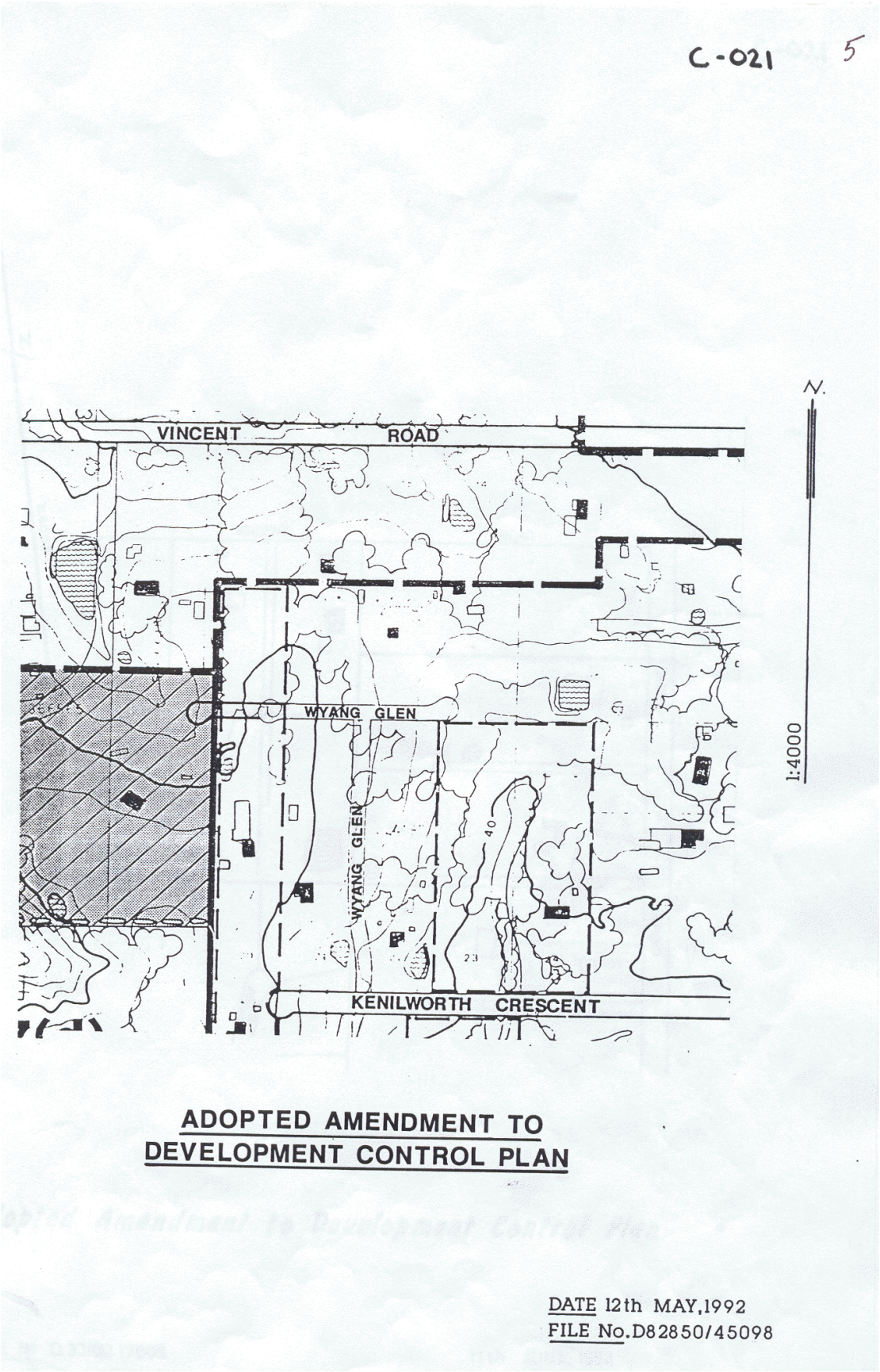


Figure E3.33: Amendment to DCP (6)

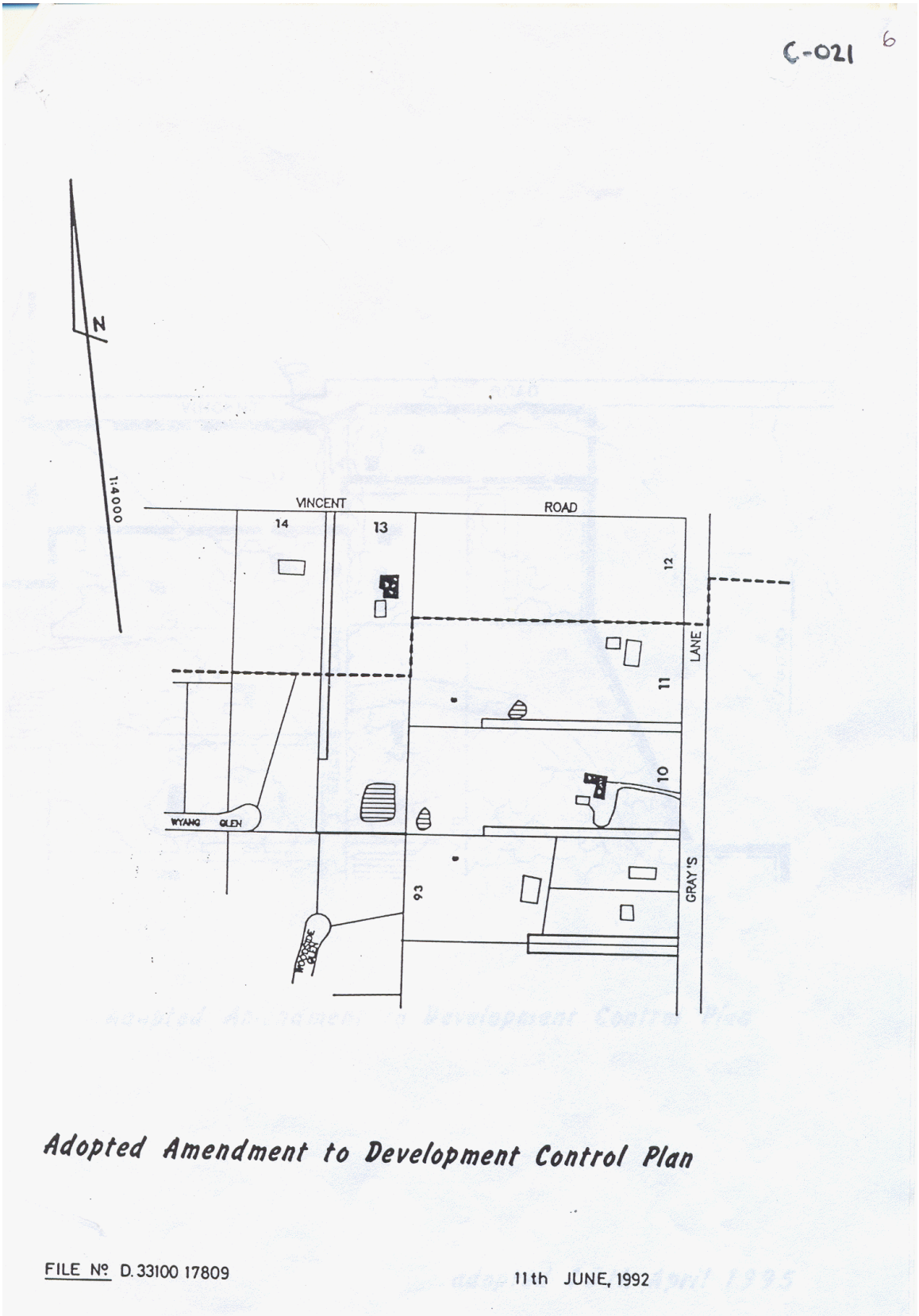
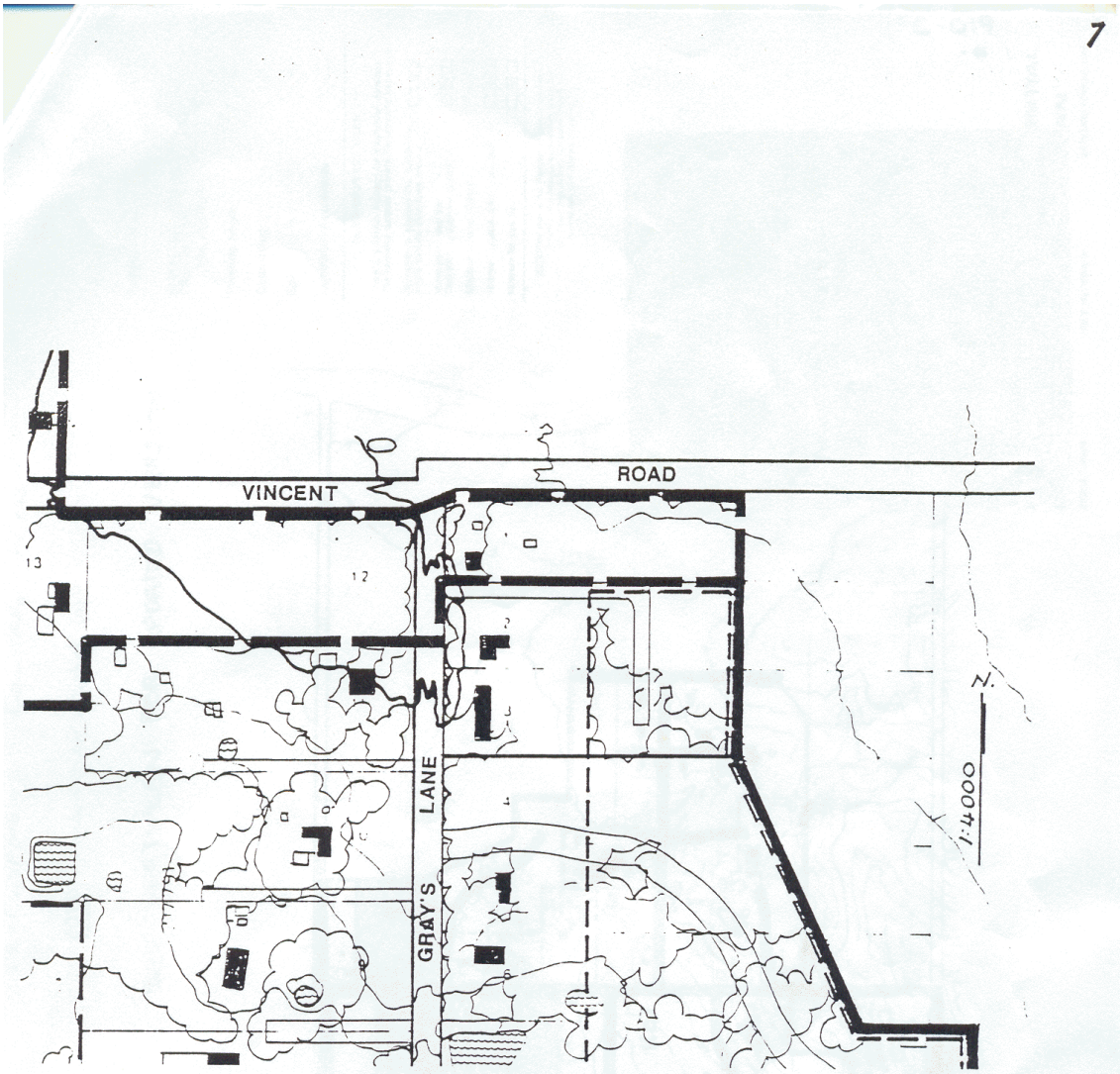


Figure E3.34: Amendment to DCP (7)



Adopted Amendment to Development Control Plan

adopted 18th April 1995

C.021

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E4 Emu Heights – Blue Mountains Eastern Escarpment

Part A – Preliminary

4.1 Introduction

In an area as sensitive as the Blue Mountains Eastern Escarpment, development proposals must be responsive to a wide range of concerns regarding the preservation of the natural and cultural environment.

The following Siting, Design and Management section sets out in full the type of development which is acceptable with respect to the preservation of the visual, topographic, vegetative and cultural features which make the Escarpment unique. All applications to Council must respond to these guidelines and development shall be allowed to proceed only

If it is in accordance with the requirements set out in the guidelines.

In areas of moderate and moderate to high bushfire hazard, all development proposals will be required to comply with the section relating to bushfire hazard. In these situations an acceptable compromise between controls relating to visual amenity and those relating to fire hazard must be reached.

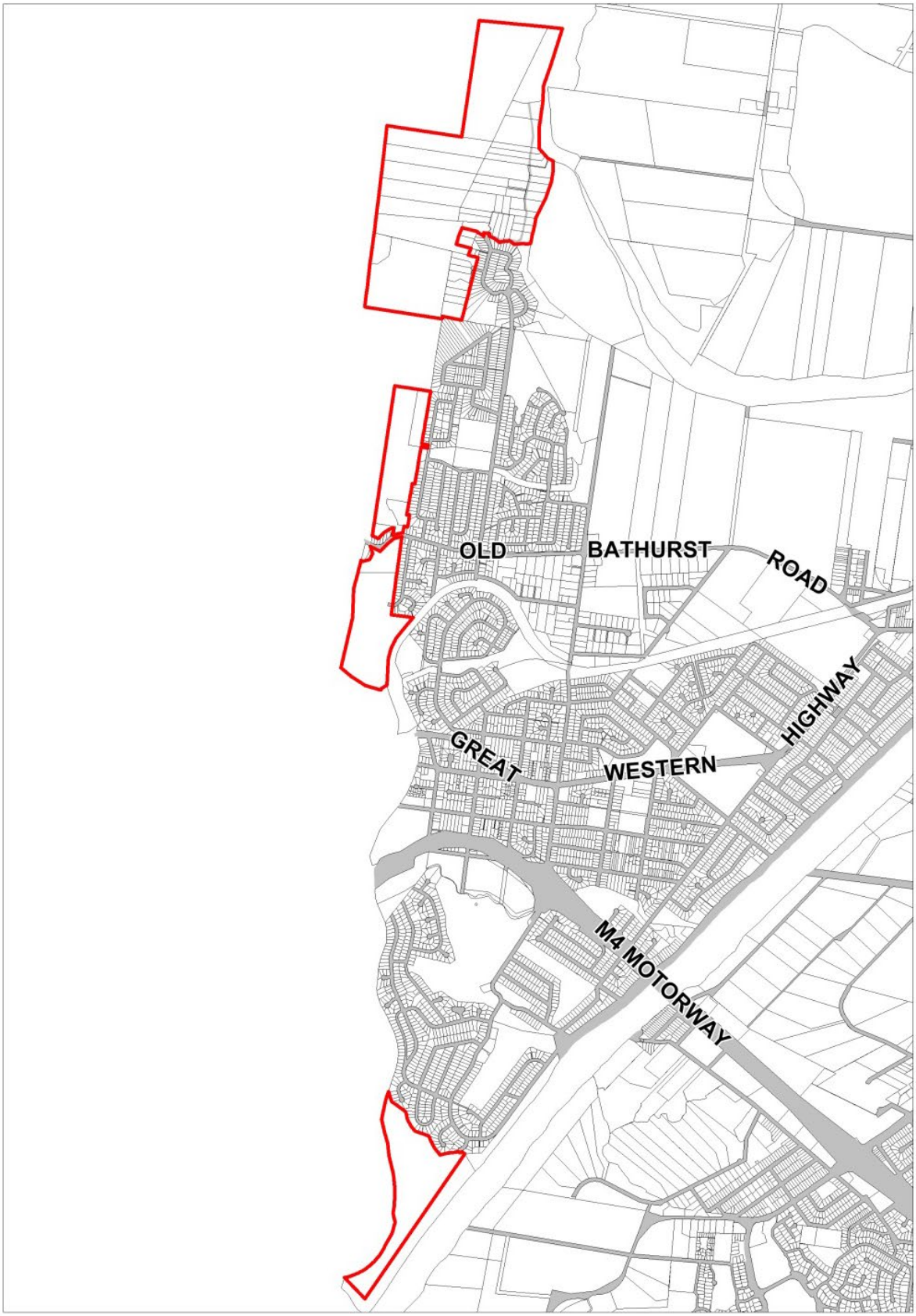
Any application must satisfactorily address development principles, objectives and policies, and must justify any variation, as well as address how the development complies with this section.

Subdivision Applications must be in accordance with the allotment layout contained in the plans accompanying this Section, as shown in Figures E4.4 – E4.8.

4.1.1 Land to which this Section applies

This section applies to the land shown in Figure E4.1.

Figure E4.1: Land to which this Section applies



4.1.2 Purpose of the Section

The purpose of this section is to give detailed guidance to people wishing to carry out development on the Blue Mountains Eastern Escarpment, and to provide Council's policies and controls with respect to development.

4.1.3 Aims and Objectives of this Section

a) To provide detailed guidelines and controls for development on the Blue Mountains Eastern Escarpment lands.

b) To provide Council's policies to assist those people wishing to carry out development on the Blue Mountains Eastern Escarpment lands.

c) To ensure that such development does not compromise the environmental qualities of the Blue Mountains Eastern Escarpment.

d) To identify lands for environment protection and to strictly control development within these lands.

e) To ensure that the tree covered natural appearance of the escarpment is retained.

f) To ensure that in any development of the land, regard is had to physical constraints including bushfire hazard, slopes, soil erosion hazards, flooding and access difficulties, as well as archaeological issues.

g) To ensure that in any development of the land, regard is had to the visual prominence of the area.

h) To ensure that in any development of the land, provision is made for an adequate water supply and environmentally acceptable waste water disposal system, drainage systems and electricity supply systems.

4.1.4 Special Requirements

1) **Easements and Rights-of-Way:** Where indicated on accompanying Figure E4.4 – Map 3, all easements and rights-of-way are to be formally negotiated and registered. A formal fire fighting easement is to be provided in accordance with the accompanying Figure E4.4 – Map 3. It is to be 5m in width, with turning bays in some cases, and is to involve the removal of undergrowth and, where necessary, the removal of trees to allow for the passage of fire fighting vehicles. The fire fighting easement must be grassed and appropriately drained to prevent erosion.

2) **Plantings:** Replanting is to be carried out using suitable species. On lots so marked on accompanying Figure E4.4 – Map 3, as 'lots marked as such to be planted with fire resistant species', fire resistant species are to be used. This requirement does not imply the removal of all trees on site and replacement with fire resistant species, it relates only to replanting following completion of works on site.

3) **Protected Lands:** Some of the lands may be subject to the Protected Lands provisions of the *Soil Conservation Act 1938*. Applicants are required to check with the Office of Environment and Heritage about the applicability of those provisions to their proposal. If relevant, Council is required to be notified.

4) **Siting, Design and Management Guidelines:** The following guidelines set out the detailed controls on development in the area covered by this Section. They aim to minimise impacts on the natural environment of the Escarpment and all development proposals must address the provisions contained within them.

Part B – Controls

4.2 Siting

A. Background

Visual impact, energy efficiency, and access to views and privacy are largely dependent upon where a building is located and how it is oriented. In environmentally sensitive areas particularly, the site selection process must involve consideration of the orientation, direction of views and slopes, relationship to the landscape and retention of existing vegetation.

Building forms must stay below the ridge lines so as to retain the visual character of the escarpment.

B. Controls

1) A position on a mid-slope bench where the topography provides a natural enclosure, and where existing vegetation can provide screening, is preferable.
2) Buildings must be on slopes less than 1:5 (vertical: horizontal).
3) Where possible, and having due regard for the bushfire hazard, orientation of buildings is to be towards the north.
4) Generally, a setback minimum of 15m from roads is required. Parking areas are not permitted within this setback.
5) A setback of 80m from the Nepean River bank is required.

4.3 Construction and Earthworks

A. Background

On steeper slopes, earthworks will be highly visible and there may be stability problems. Thus, site disturbance is to be minimised so as to retain the visual character of the escarpment.

Details of erosion and sediment control are required for inclusion in a subdivision and development application when site disturbance is proposed.

B. Controls

1) Where relevant, proposals for the following erosion control measures must be included in any application:
    a) Effective sediment traps in drainage courses prior to construction.
    b) Provision of overland flow diversions above and below development sites.
    c) Vehicular traffic to be confined to sealed roads or parking bays.
    d) Suitable ground and/or shrub cover to be established in all landscaped areas as soon as construction is completed.
    e) Site and excavation works is to be limited to the immediate building envelope.
    f) Maintenance of control measures.
    g) Rehabilitation techniques.

    These proposals are to be included in an erosion and sediment control plan.

2) Surplus excavated material is to be removed from the site.
3) Restoration of all site disturbances is required prior to occupation of buildings.
4) Cut and fill depth is to be minimised.
5) Slab on ground construction is inappropriate on slopes steeper than 1:10. Elevated floors are required on these slopes. Caution must be taken here in areas of bushfire risk.

4.4 Building Design

A. Introduction

Thorough site analysis and planning is essential to ensure that the building responds to the site rather than trying to modify the site to fit the building. This will ensure that the bushland character of the Escarpment is maintained.

Particular attention should be paid to the visual prominence of the buildings. Buildings which have their main lines at right angles to the natural ground slope appear obtrusive. The strong triangular geometry, of for instance an A-frame or a gable, gives an unacceptable vertical emphasis to the building.

B. Controls

1) Facades and roof lines should be broken into small elements. No single plane or element is to exceed 10m in any dimension. Walls can be relieved in elevation by use of bays and recesses.
2) The longer facades of the building are to be parallel to the contours.
3) Horizontal emphasis is to be given to the composition of building elements such as wall panels, windows, roof and verandah lines.
4) Verandahs, wide eaves, pergolas and trellises serve to relate structures to natural ground level and to vegetation.
5) Split level buildings, which step up and down the slopes, will avoid cutting and filling, and will avoid the need for high walls.
6) To avoid piers, stilts and poles, build load bearing structures directly from the ground.
7) Tanks, sheds, carports and garages are to be screened by vegetation and walls, and are to be built to link to the main buildings or form part of a group of buildings and should be of similar colours to the dwelling house.
8) Round or curved buildings (either in plan or elevation) can be compatible with the landscape.
9) Dual occupancy development must be designed in accordance with the provisions of this Section and those of the Residential Development Section of this Plan.

4.4.1 Roof form

A. Background

Roof forms which bring the roof line down towards the earth, blend better with the landscape. Steeply pitched roofs usually appear obtrusive because their slopes are greatly in excess of the natural slope of the ground.

However, in hill country, it is most unusual to see a flat or low pitched roof that reflects and blends with the landform. Hipped roofs are very effective in leading the eye back down to ground level and hence are preferred.

B. Controls

1) The roofline is to be below tree canopy level.
2) Roof pitch is to be generally parallel to the surrounding ground slope with a minimum pitch of 10 degrees and a maximum of 30 degrees.
3) No single plane or element of a pitched roof should exceed 10m in any direction.
4) Top edges of roofs are to return at the same pitch rather than terminate in a skillion form.
5) It is preferable to finish the roof with wide eaves or verandahs and bring the roof edge as close to the ground as possible.
6) Solar energy collector panels are to be non-reflective.

4.4.2 Building Height

A. Background

Height restrictions apply in order to avoid loss of the visual qualities of the area. Generally, a height of more than one level is considered unsuitable.

B. Controls

1) Building heights are limited to one level (including garage) except in cases where unacceptable site disturbance will result. Split level development is preferable in such cases.
2) Where height is limited to one level, enclosed under house storage will be permitted. In moderate and moderate to high bushfire risk areas, this storage area must be enclosed.

4.4.3 Doors and Windows

A. Controls

To minimise undesirable impacts caused by the use of reflective materials, the following guidelines are appropriate:

1) Doors and window openings are to be vertical in proportion.
2) Timber construction is appropriate, subject to acceptable treatment to reduce the bushfire hazard potential.
3) Aluminium windows and doors are acceptable, provided that the frames are of acceptable colours (brown, green, cream etc.).

4.4.4 Fences

A. Background

To minimise impact on the bushland character of the area, minimal or no fencing may be appropriate in some locations. However, appropriate fencing will be required to assist with bushland management.

B. Controls

1) In general, fences are to be unpretentious and simple. Timber post and rail style is appropriate.
2) Masonry, brick block work, stone, and light colours, are inappropriate for fences.
3) Natural colours are to be used. Natural timber, colours in the green range (excepting bright greens), and grey to light browns are appropriate for fencing.
4) Fences are to avoid the “No Development” areas, as identified in Figure E4.4 (Map 3).
5) Fences along the boundary of the E2 Environmental Conservation and E3 Environmental Management zones should be of the type which does not allow the passage of domestic animals.

4.5 Building Materials

A. Background

Natural textures and materials are less obtrusive in a bushland setting and are therefore more appropriate. Generally, those which most closely resemble the natural materials in colour and texture are the most appropriate.

Large, flat expanses of reflective materials are best avoided, as are highly textured, variegated or brightly coloured bricks. Consideration must also be given however to the types of materials most suitable in bushfire prone areas.

B. Controls

1) Suitable wall materials, subject to bushfire hazard rating, are:
    a) timber (treated or stained);
    b) weatherboard;
    c) treated concrete blocks;
    d) brick / brick veneer;
    e) stone;
    f) steel.
2) For rooves,:
    a) Tile;
    b) corrugated steel, and
    c) painted steel decking

    are appropriate.
3) Large flat areas of glass and sheet metal are not permitted, particularly on eastern elevations.
4) Stained and other treated timber materials are to be regularly maintained to reduce the bushfire hazard potential.

4.6 Building Colours

A. Background

The situation and setting of buildings should be considered when selecting materials and colours. Hence, recessive colours which are derived from, and blend with, the landscape and which are natural earthy tones of low reflective quality should be used. Particular care must be taken when the development can be viewed from public places.

B. Controls

1) Roof colours – Colours in the green range, except bright greens are acceptable; as are any of the ochre range, and the grey to brown colours.
2) Walls and other external surfaces - Natural timber and stone and bricks of the light brown colour range are appropriate. Large facades of dark bricks, even brown, accentuate the size of the structure and are inappropriate. Dark surfaces are permitted only as a plane or element which does not exceed 5m in any direction.
3) Minor features - Colour detail is appropriate on minor features such as window frames and doors.
4) Fences – Natural timber, colours in the green range (excepting bright greens), grey to light browns are appropriate for fencing.

4.7 Services

A. Controls

1) Locate electricity and telephone wires underground.
2) Services to be screened by walls and vegetation.
3) An easement for access to the transmission lines will need to be created on some allotments.
4) All necessary easements shall be created in favour of the relevant servicing authority at no cost to Council or the servicing authority.
5) Provisions for subdivisional drainage are to be devised in consultation with, and to the satisfaction of, Council's Engineering Services Manager. Proposals which would result in the pollution of the Nepean River will not be approved. On-site detention of stormwater may be required.
6) All cabling and excavations for services are to be undertaken in a manner which will allow bushland rehabilitation.
7) All dwellings and other buildings containing toilets are to be connected to the Water Board sewerage system when capacity exists within the system. In the interim, applications are required to stipulate the means of treating and disposing of effluent. This must occur in a manner that does not lead to pollution of the river.

4.8 Access

A. Background

Driveways should follow natural contours or run gently across steep slopes. Drainage lines and areas requiring extensive cut and fill should be avoided for access construction. Informal access can be more appropriate in sensitive areas.

B. Controls

1) Roads and rights-of-way are to be constructed in accordance with the plans accompanying this section and to Council's standards in consultation with, and to the satisfaction of, Council's Engineering Services Manager.
2) New roads and rights-of-way shall be created at no cost to Council.
3) Driveways are to follow natural contours and to avoid damming gullies and streams. Driveways are to be located to retain as much natural vegetation as practicable.
4) Slopes and banks of roads and driveways must be stabilised during construction.
5) To maintain a 'low key' feeling, narrow roads and driveways are to be constructed.
6) Gravel or crushed sandstone surfaces are preferable on low slope driveways. On steeply sloping land, paving or sealing is to be in a dark colour to give a more natural effect.
7) Access tracks may be constructed in 'No Development' areas, but only in accordance with the plans accompanying these guidelines.
8) It will be necessary for the method of treating and minimising runoff from roads, driveways and sediment control and restoration of all earthworks to be addressed as part of any development application.
9) The location of the road pavement within the reservation is subject to detailed survey.
10) All accessways, roads, tracks and driveways are to be constructed in such a manner that the disturbance of adjacent areas is to be minimised. This is particularly critical where access is through areas of bushland and across and adjacent to creeks and drainage lines.

4.9 Landscaping

A. Background

It is vitally important that the tree canopy and bushland vistas remain. Species chosen for landscaping purposes should be chosen with the following criteria in mind:

a) Appropriateness for location
b) Suitability for purpose e.g. for screening
c) Fire and drought resistance
d) Ease of maintenance
e) Attractiveness

Weeds should be eradicated from natural vegetation, using proven bush regeneration techniques.

A comprehensive list of suitable species is available on Council's website or by contacting Council.

B. Controls

1) Permission will not be given to remove natural vegetation from the areas marked as 'No Development' zones. Through the application of these controls, existing indigenous vegetation will be retained wherever possible.
2) Local native plant species are preferred.
3) The use of fire resistant local native species is appropriate for all allotments, but must be used on certain specified allotments.
4) Existing low plants and leaf litter are to be retained as groundcover, except where subject to specific controls in areas of moderate and moderate to high bushfire hazard areas.
5) Native grasses are more appropriate than bright green lawns.
6) Natural rock features are to be retained.
7) Random planting and groups of trees are more in keeping with the natural landscape than formal plantings.
8) Landscaping plans, to be prepared in accordance with plans included within this section, are required for all developments.
9) Bushland regeneration, using approved bushland regeneration techniques, is to be incorporated where necessary as part of a landscaping plan, and is to be carried out to the satisfaction of Council's Engineering Services Manager.
10) All mulching material is to originate from clean native vegetation from the site, to avoid the introduction of exotic species.
11) Retain/add habitat for fauna, e.g. logs for reptiles.

4.10 Bushfire Hazard

A. Background

Bushfire risks in bushland settings can be lessened by both safety measures and management measures. The aim is to reduce the use of environmentally unacceptable hazard reduction methods such as controlled burning, by paying attention to building design and siting.

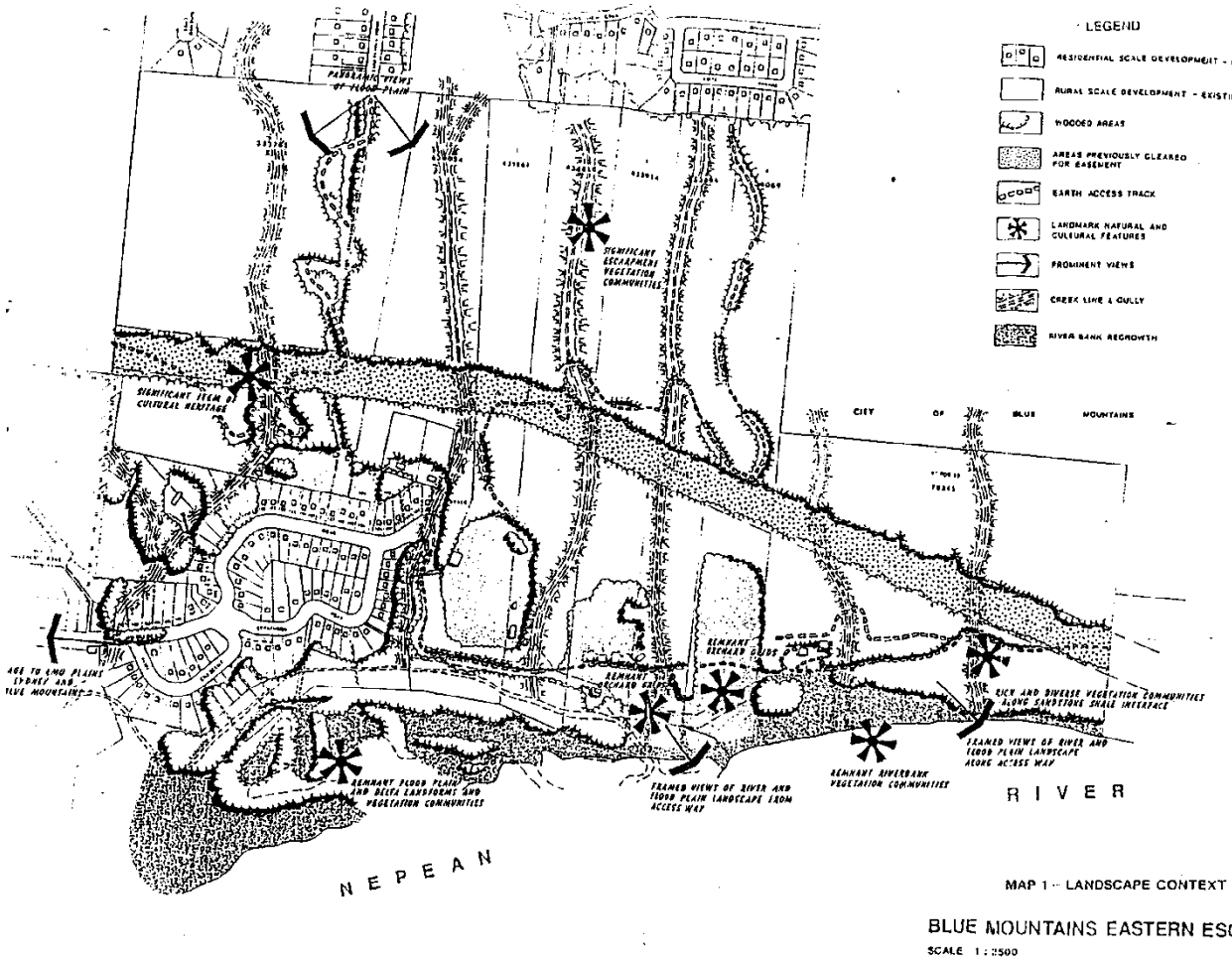
B. Controls

1) All allotments must comply with the requirements of *Planning for Bush Fire Protection 2006* and the Australian Standard for the Construction of bush-fire prone areas AS3959-2009 and the guidelines as identified on Figure E4.4 – Map 3. Advice from Council's Development Services Department should be sought prior to lodging an application with Council.
2) In order to maintain the firebreak and fuel reduced zones, a 5m wide access-way for fire fighters is to be provided within allotments and registered as fire prevention easements. The final location is to be subject to survey. This access-way is to provide for vehicular movement and may require removal of trees and undergrowth. In all cases, the access-way is to be grassed and appropriately drained to prevent erosion.

3) Preferably, houses are to be located on, or at the base of, gentle south or south east facing slopes. These slopes are more damp and usually on the downslope side of a fire.
4) When building on slopes, it is safer to build the house on a ‘cut in’ bench rather than have it perched on the slope on stilts.
5) Ensure that there are at least 2 ways out from the site, with one preferably to the south east, so that in the event of fire, escape is away from the primary fire danger zone.
6) When siting buildings, consideration should be given to possible uses of existing trees for wind break protection. Eucalypts are preferable for windbreaks as they are capable of regeneration. Firebreak trees should be cleared of branches to a height of 2m above ground level to prevent ground fires climbing the trees.
7) Most fire resistant vegetation is that with high leaf moisture content, low resin content and minimal dead matter during the fire danger period. When choosing appropriate species consider:
    a) The amount of water the trees will receive;
    b) How trees burn once set alight; and
    c) Likely regeneration or recovery rate after fire.
8) Trees should not touch walls and roofs. Plantings nearer buildings should be of the low hazard type. Fruit trees and vegetable gardens can serve as fire breaks on the fire approach side. Low ground covers should be planted and kept well watered in summer.
9) A well protected property still requires annual maintenance to maximise safety in the event of fire.

Appendix 1: Maps of Blue Mountains Escarpment Area

Figure E4.2: Map 1 – Landscape Context



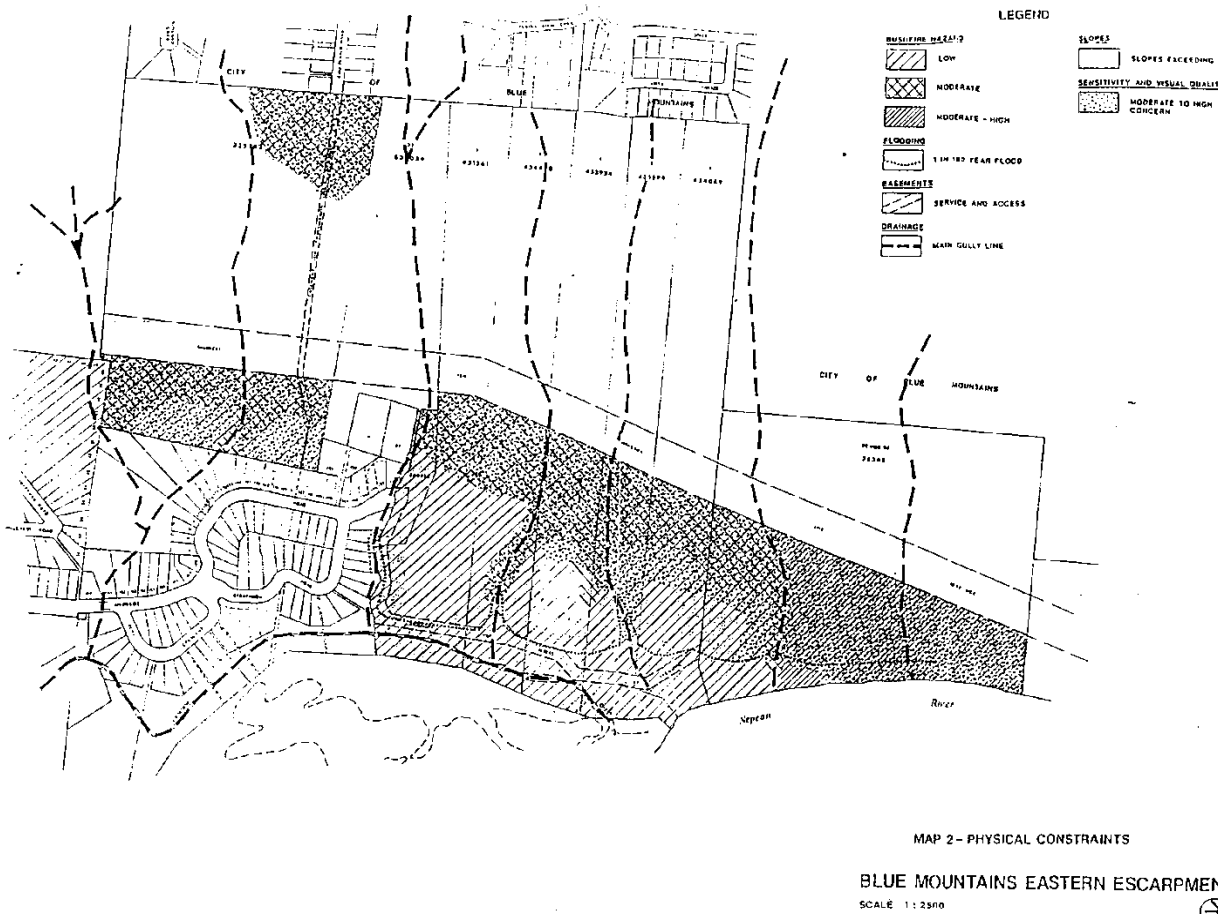
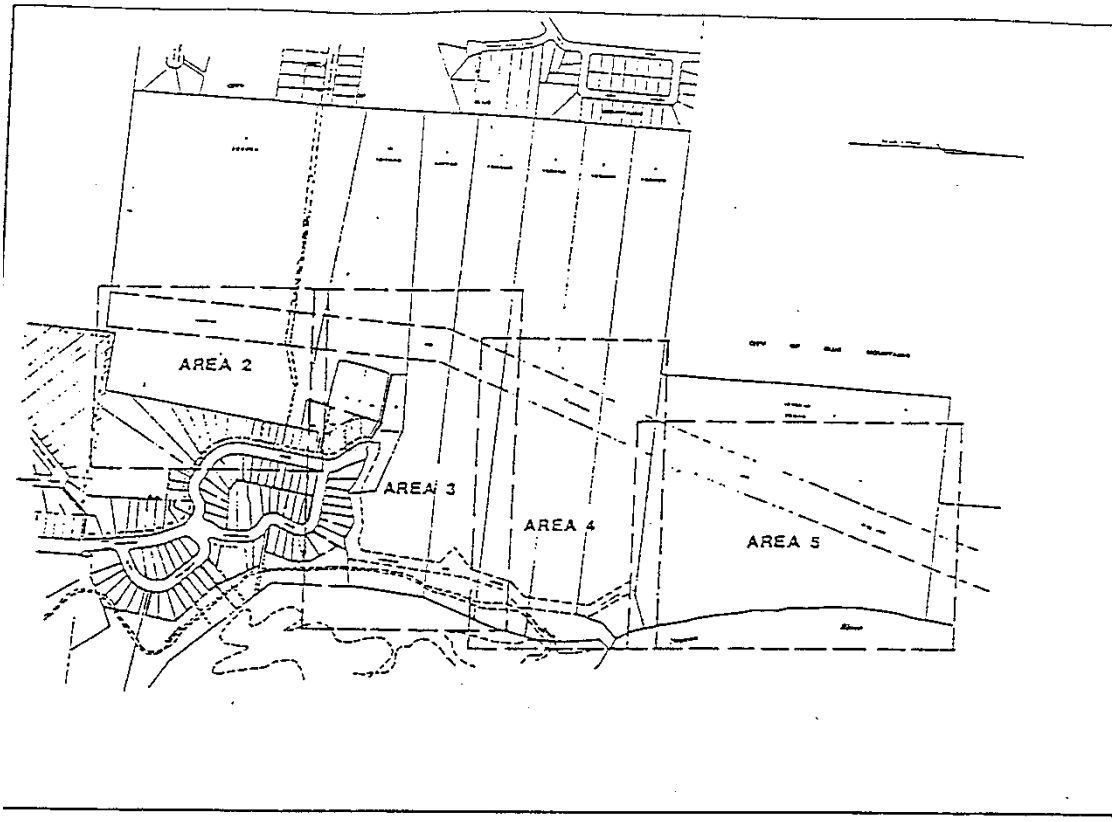


Figure E4.4: Map 3 – Subdivision Pattern and Development Controls



LEGEND

FIRE FIGHTING EASEMENT 5m WIDE TO BE CREATED

RESTRICTION TO USE (NO DEVELOPMENT)

DEVELOPMENT PERMITTED (SUBJECT TO PROVISIONS OF SITING DESIGN & MANAGEMENT GUIDELINES D.C.P.)

LOTS MARKED AS SUCH TO BE PLANTED WITH FIRE RESISTANT SPECIES

TRACK

RIGHT OF CARRIAGEWAY AND EASEMENT FOR SERVICES

BRIDGE

EXISTING BUILDINGS

MAP 3 – SUBDIVISION PATTERN AND DEVELOPMENT CONTROLS

BLUE MOUNTAINS EASTERN ESCARPMENT

Figure E4.5: Area 2

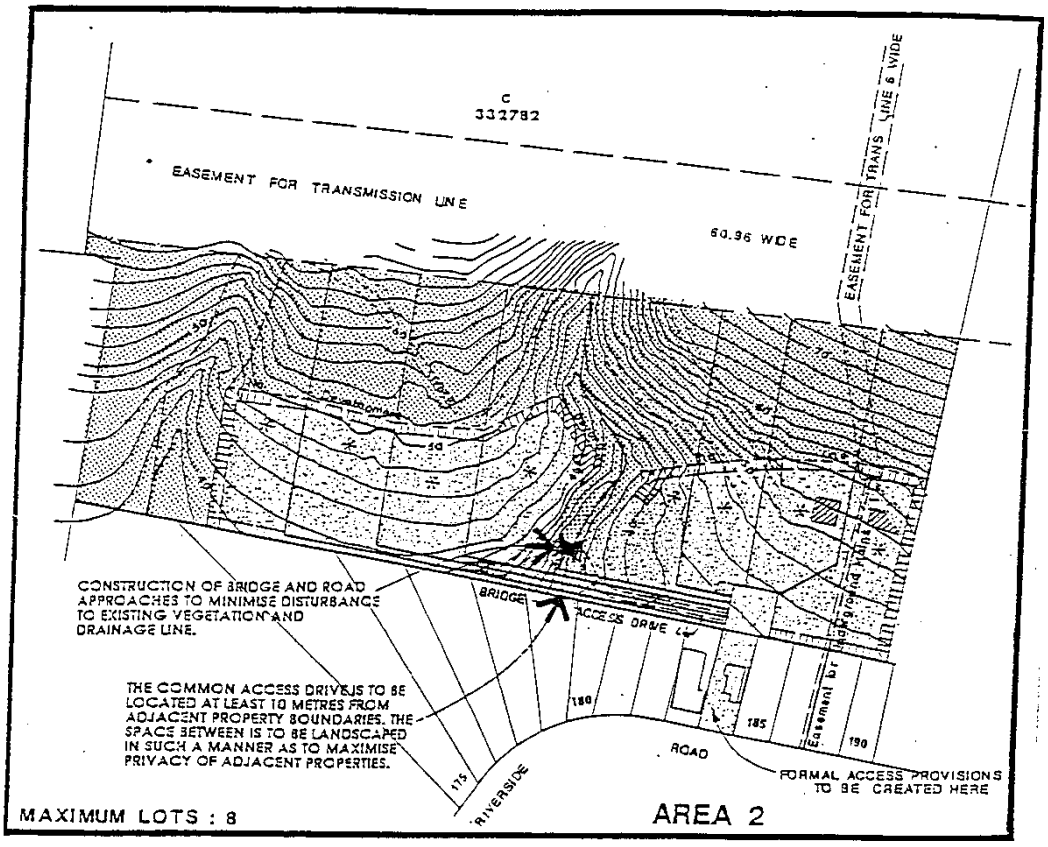


Figure E4.6: Area 3

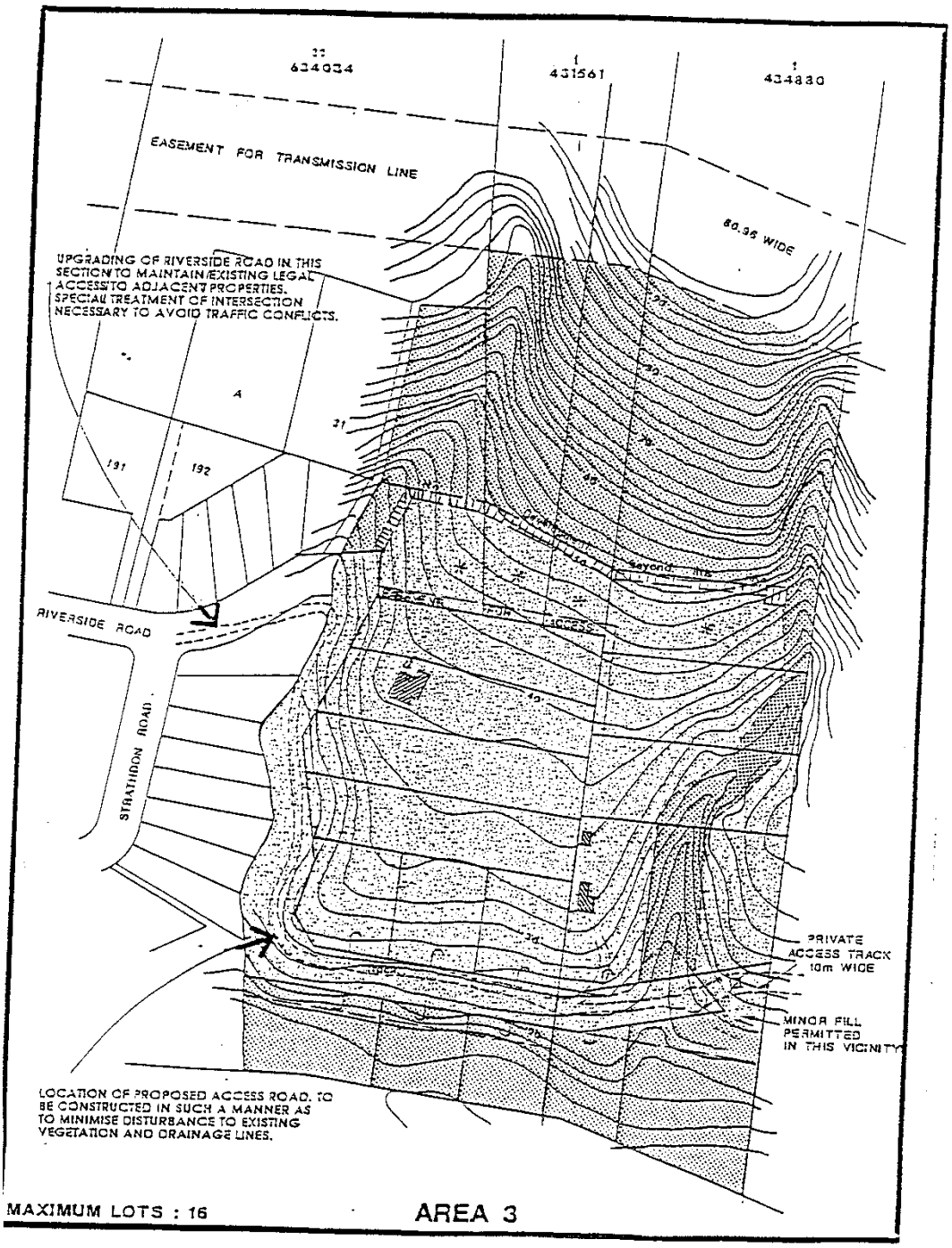
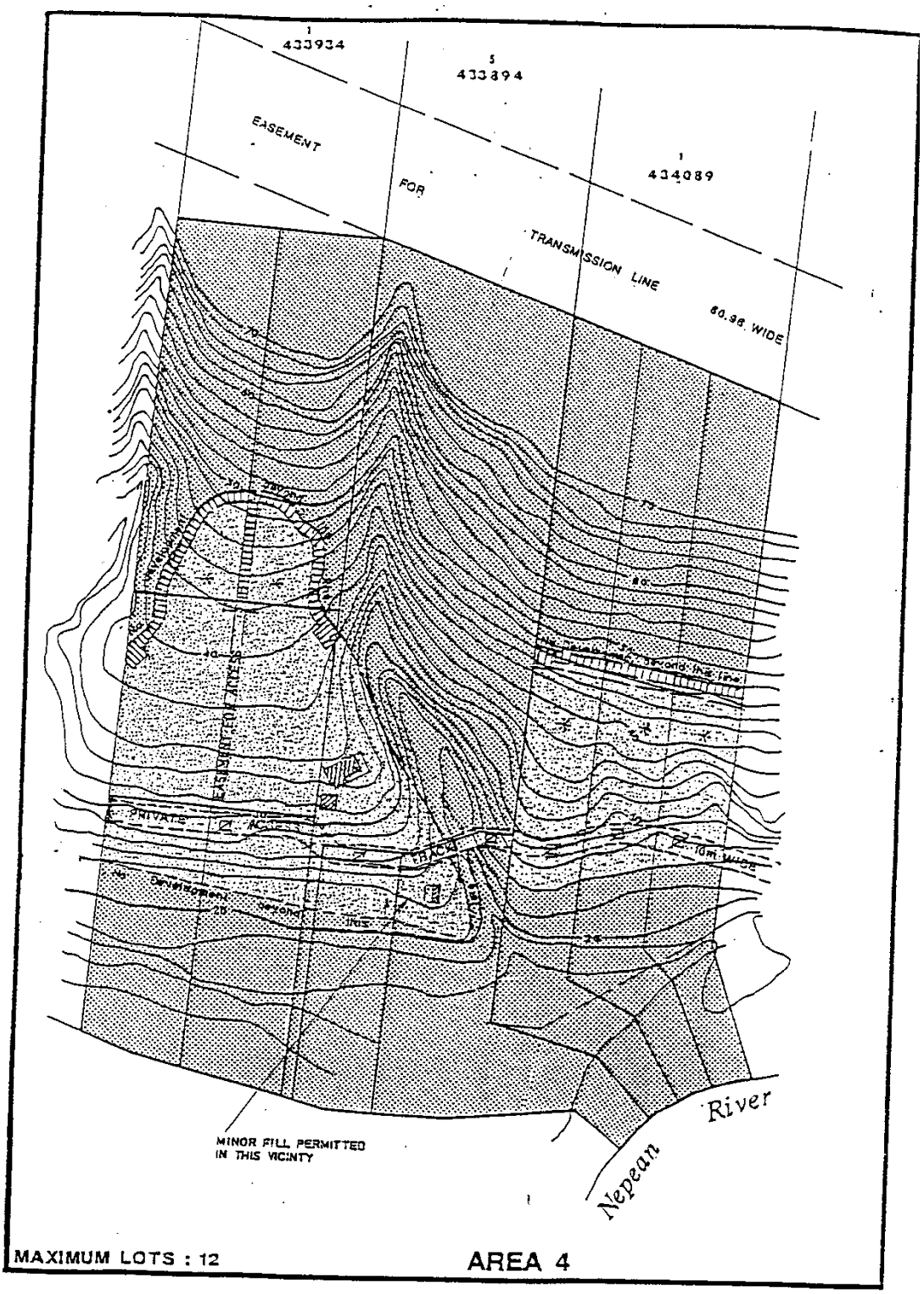


Figure E4.7: Area 4



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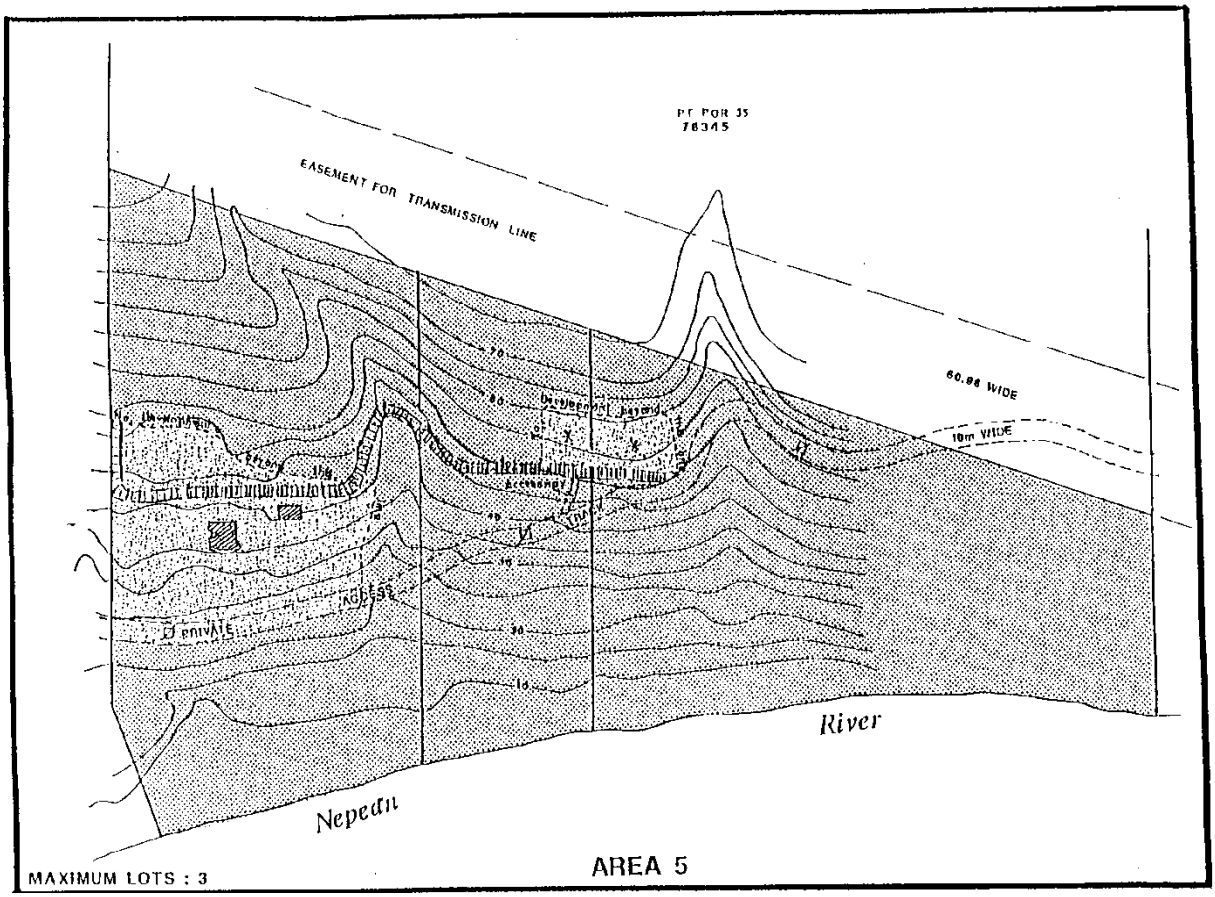
PT POR 35
78345
EASEMENT FOR TRANSMISSION LINE
60.96 WIDE
10m WIDE
PRIVATE
ACCESS
Nepean
River
MAXIMUM LOTS : 3
AREA 5

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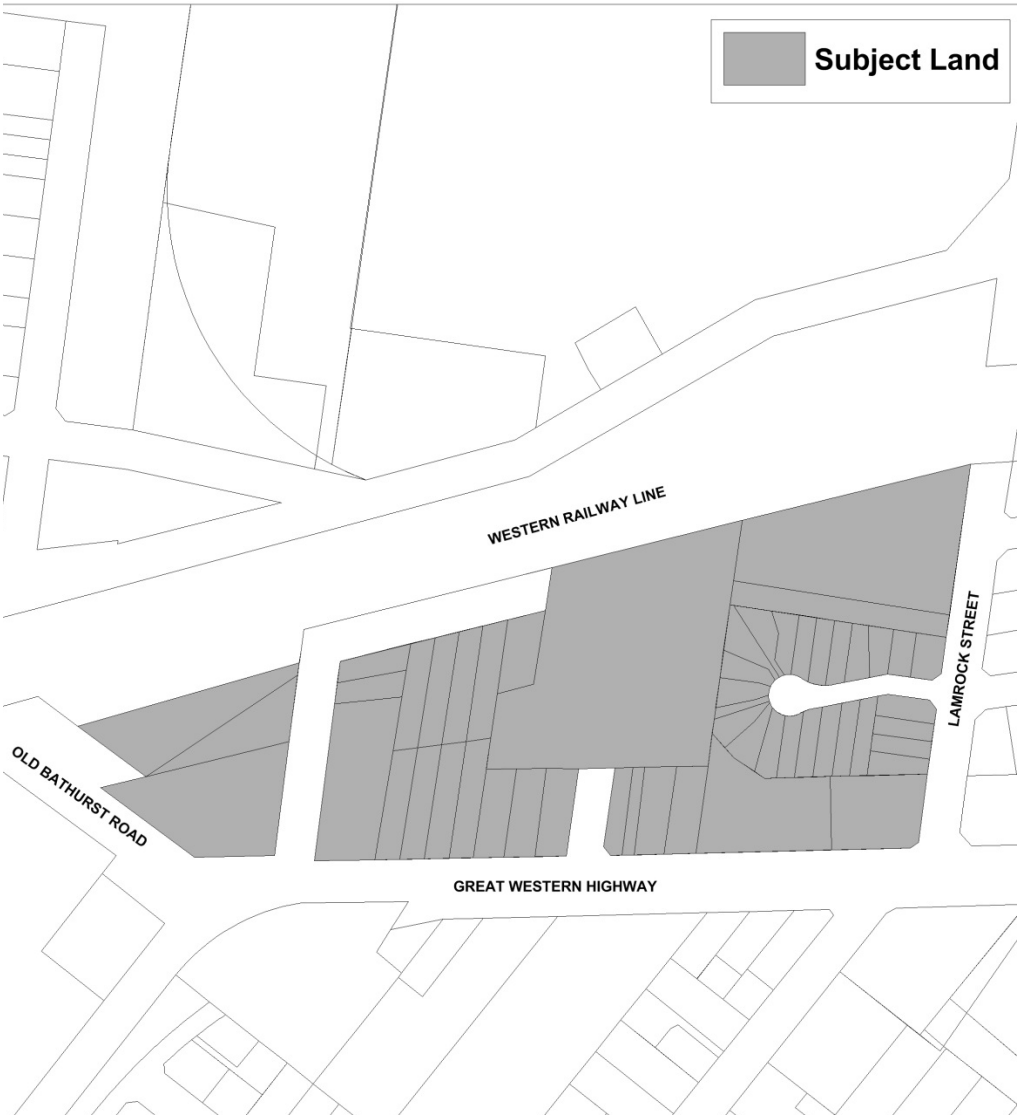
Part A – Emu Plains Commercial Area

5.1 Introduction

5.1.1 Land to which this Part applies

This section applies to land at Emu Plains, bounded by Old Bathurst Road, the Great Western Highway, Lamrock Street and the Western Railway line as shown in Figure E5.1.

Figure E5.1: Land to which this Part applies



5.1.2 Aims of this Part

a) To provide urban design guidelines for commercial and residential development within the area;

b) To reflect current traffic management conditions and to guide future traffic management and parking within the area;

c) To ensure the enhancement of pedestrian access within the area and between surrounding areas; and

d) To ensure the physical enhancement of the area through the provision of landscaping, street tree planting and good quality urban design.

5.2 Controls

5.2.1 Commercial Development

1) To enhance the landscape character of the area, street tree planting of advanced trees shall be provided:

   a) along the street frontages of land in conjunction with any new development on that land. The street trees are to be consistent with Council's street planting requirements for the area; and

   b) along the frontage of land to Council's car parking area in conjunction with any new development on that land.

2) Land fronting the Great Western Highway, and located between the existing shops and Lamrock Street, has potential for commercial development consistent with the land use zone. As such, development proposals on this land shall be designed:

   a) to take account of the amenity of any adjacent residential development by providing:

      i) Attractive external design and site planning to maintain residential privacy and minimise noise generation; and

      ii) Buildings/s of maximum two storeys in height and designed to complement the existing one – and two- storey residential mix in the surrounding area.

   b) to provide a staggered building setback which provides a visual link between the existing buildings adjacent to the land.

5.2.2 Traffic Management

1) Vehicular access to the precinct is provided via:

   a) Station Street (left in, left out); and

   b) Billington Place (signalised intersection); and

   c) Lamrock Street (limited only to development fronting Lamrock Street, with no direct vehicular connection between Lamrock Street and Railway Row South).

2) All new development within the precinct shall be designed to provide satisfactory service vehicle access in accordance with the Plan.

3) All new development within the precinct shall contribute towards the cost of traffic management and pedestrian facilities identified within the Plan.

5.2.3 Parking

1) Development within the precinct shall provide on-site car parking in accordance with the parking section of this plan.

5.2.4 Residential Development

1) To enhance the landscape character of the area street tree planting of advanced trees shall be provided:
   a) Along the street frontages of land in conjunction with any new development on that land. The street trees are to be consistent with Council's street planting requirements for the area; and
   b) Along the frontage of land to Council's car parking area in conjunction with any new development on that land.
2) Development proposals for land adjacent to the western side of Lamrock Street which has potential for residential development shall incorporate:
   a) measures to minimise the impact of noise on residents from the Western Railway line and Great Western Highway through appropriate design features, the use of suitable external materials, landscaping and site design;
   b) dwellings of a scale and character which complement those existing in the surrounding area;
   c) high-quality fencing of a scale, design and materials which does not present long, unbroken expanses to public view (e.g. lapped-and-capped paling fence, or masonry construction, with spacing for tree and shrub planting);
   d) landscaping which complements the character of the area, and enhances both the amenity of the residents and views from public places. Landscaping must be implemented to provide privacy and shade for the residents.

5.2.5 Pedestrian Access

1) To enhance pedestrian access within the area and between surrounding areas foot paving shall be provided along the street frontages of land in conjunction with any new development on that land.
2) Foot paving treatment shall be consistent with Council's foot paving requirements for the area.

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E6 Erskine Business Park

6.1 Preliminary

6.1.1 Aims and Objectives of this Section

a) To enable a diversity of employment generating development to locate within the Erskine Business Park;

b) To ensure that the standard of development does not detract from or unduly impact upon the existing built environment in adjoining rural and residential areas; and

c) To ensure that development occurs in an environmentally responsible manner and future development limits adverse impacts upon significant biodiversity.

d) To provide a framework that will lead to a high standard of development by encouraging local employment and creating an area which is pleasant, safe and efficient to work in;

e) To ensure that development takes account of the physical nature of the local environment, particularly Ropes Creek, ridgelines and the natural landscape;

f) To ensure that development does not result in pollution of waterways and in particular of Ropes Creek and South Creek;

g) To promote the development of a visually attractive physical environment where the form, scale, colour, shape and texture of urban elements are managed in a way which will achieve an aesthetically pleasing balance which does not adversely affect the amenity of the existing residential areas;

h) To identify and provide for public amenities and service infrastructure to accommodate development;

i) To promote the creation of a landscaped area within the electricity transmission easement to act as a buffer between the employment zones and the residential communities;

j) To establish environmental criteria and controls for development within the area to ensure that the environmental quality of adjoining areas is not compromised;

k) To ensure that development is consistent with the objectives of the Threatened Species Conservation Act with particular regard to the endangered ecological communities, flora and fauna present on the site;

l) To facilitate conservation of urban bushland; and

m) To protect, restore and enhance riparian corridors within Erskine Business Park.

6.1.2 Land to which this Section Applies

Erskine Business Park is part of the Western Sydney Employment Area (WSEA) which applies to land identified in the *State Environmental Planning Policy (Western Sydney Employment Area) 2009* (WSEA SEPP). The WSEA is located within the vicinity of the intersection of the M4 and M7 Motorways. The WSEA straddles four local government areas (Penrith, Blacktown, Fairfield and Holroyd) covering an area of approximately 2,450 hectares.

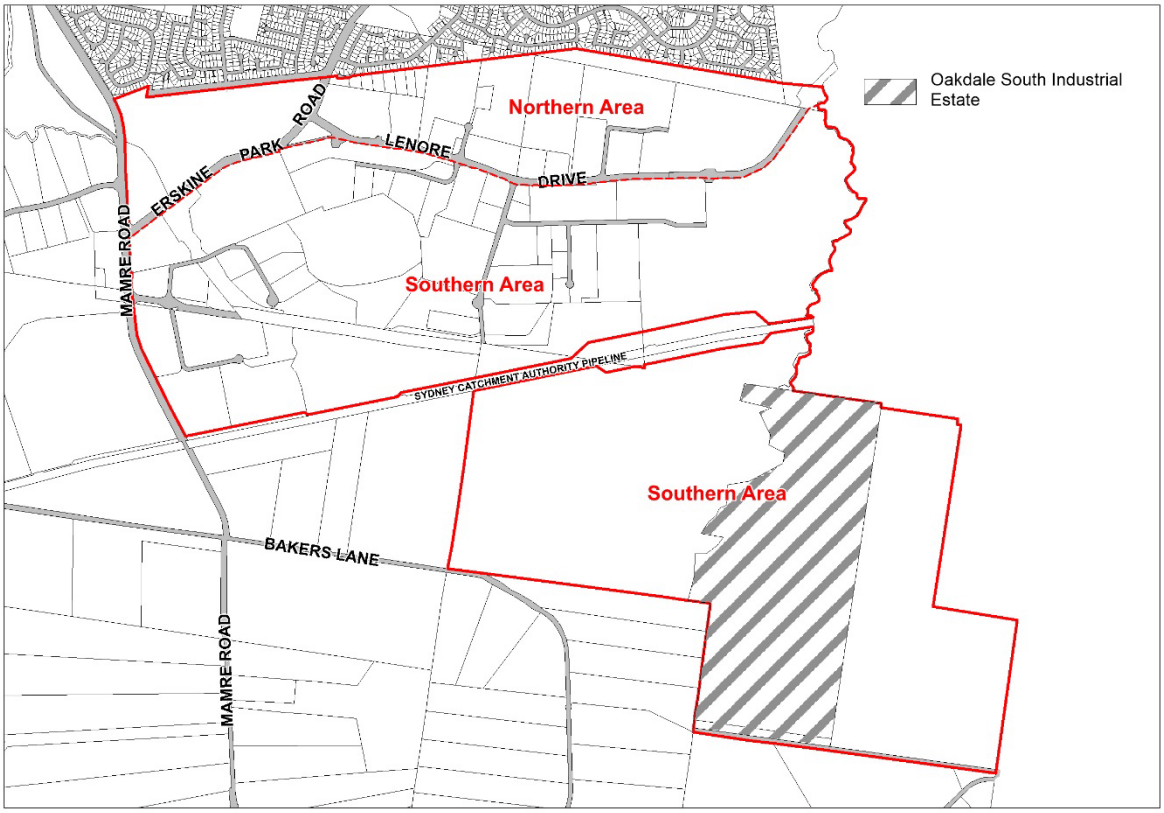
This Section applies to those WSEA lands within the Penrith LGA known as Erskine Business Park (as identified in Figure E6.1) and includes:

a) The existing Erskine Business Park (divided into two precincts being the Northern Area and the Southern Area as shown in Figure E6.1); and

b) An area also shown in Figure E6.1 which includes those lands south of the Sydney Catchment Authority (SCA).

This Section also provides more detailed provisions than are included in the WSEA SEPP in regard to development standards, the provision of public amenities and service infrastructure, and biodiversity conservation.

Figure E6.1: Land to which this Section applies



6.2 Subdivision

A. Objectives

a) To achieve maximum flexibility for siting and location of buildings and to achieve an appropriate density of development;

b) To provide opportunities for parcels of land of varying size and dimensions to satisfy market demand and the needs of the development industry;

c) To ensure that subdivision design takes into account biodiversity considerations and facilitates minimum impact development to protect remnant native vegetation on the site and on adjoining land;

d) To preserve the natural topography and physical characteristics of the land;

e) To provide opportunities for large lot subdivision;

f) To ensure that development occurs in a logical and staged manner;

g) To minimise the number of road entry points to designated roads and the northern access road, thereby allowing more efficient traffic management;

h) To create the opportunity for "individual" design solutions and innovative and efficient subdivision layout;

i) To create opportunities for large land parcels to be developed in a co-ordinated, unified manner, featuring elements such as a common landscape theme/treatment, similar architectural treatments, and where possible, shared parking areas; and

j) To protect, restore and enhance riparian corridors.

B. Controls

1) Lots fronting biodiversity areas or corridors are required to have on-site drainage controls in accordance with this section to prevent nutrient and erosion impacts on the bushland.

2) Lot design should maximise the conservation of the natural features of the site including important fauna habitats, rare or threatened plant habitats, and designated biodiversity areas.

3) Lots adjoining or containing watercourses are required to maintain or establish native vegetation riparian zones.

4) Perimeter roads are desirable from the point of view of bushfire control but may not be feasible if site disturbance is to be minimised.

5) The subdivision controls are:

Table E6.1: Subdivision Controls in Erskine Business Park

	Area	Control
Minimum Allotment Size	Northern Area (Refer to Figure E6.1)	20,000m^2
	Southern Area – excluding Oakdale South Industrial Estate (Refer to Figure E6.1)	10,000m^2
	E2 Environmental Conservation along the Ropes Creek Corridor.	40 hectares
	Land known as the Oakdale South Industrial Estate, Erskine Park (Refer Figure E6.1)	5,000m2
Minimum Frontage	Northern and Southern Area (Refer to Figure E6.1)	60m
	E2 Environmental Conservation along the Ropes Creek Corridor	Not Applicable
	Land known as the Oakdale South Industrial Estate, Erskine Park (Refer Figure E6.1)	40m (excluding cul-de-sacs) 35m minimum lot width at building line

6) Council will consider a variation to the above allotment size and frontage for lots created for either “utility installations” or “utility undertakings” (e.g. electricity substation).

6.3 Site Development and Urban Design

6.3.1 Height

A. Objectives

a) To encourage building forms that respond to the topography of the site and the relative position of the allotment to other allotments and the street;

b) To ensure a scale of buildings which minimises the impact of development on adjoining residential areas; and

c) To minimise the impact of development on views from adjoining residential areas.

B. Controls

1) The maximum height for buildings and structures in the Northern Area shown in Figure E6.1 shall not exceed 12m.

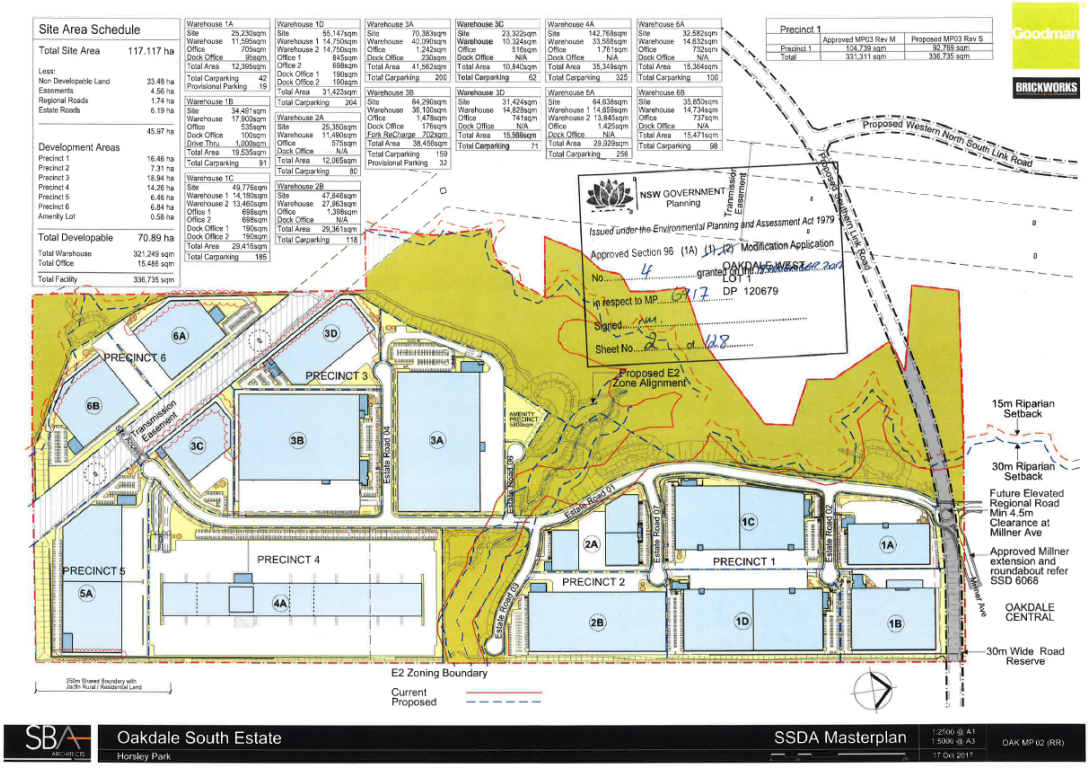
2) The maximum height for buildings and structures in the Southern Area shown in Figure E6.1 shall not exceed 15m, unless otherwise specified below.

3) Generally, buildings should be sited on mid-slope to avoid visual impact on ridges and to be in harmony with the existing landscape.

4) On sloping sites, the building or buildings should be designed, where possible, so as to "step" physically up or down the site to avoid visual impact on ridges.

5) Within the Oakdale South Industrial Estate, no warehouse buildings in Precinct 4, 5 or 6 shall exceed a ridgeline height of 13.7m. Refer to Figure E6.2 Oakdale South Industrial Estate – Precinct Plan.

Figure E6.2 Oakdale South Industrial Estate – Precinct Plan



6.3.2 Site Coverage

A. Objectives

a) To limit the density of development; and

b) To encourage the provision of open space and landscaping on development sites, consistent with the landscape objectives in the Landscape Design of this Plan.

B. Controls

1) Site coverage shall not exceed 50%, unless otherwise specified below

2) Site coverage within the Oakdale South Estate shall not exceed 65% (excluding building awnings).

3) Where land is included in Biodiversity Conservation Areas or Electricity Transmission Line Easements, that land can be included in site coverage calculations.

6.3.3 Setbacks

A. Objectives

a) To provide an open streetscape with substantial areas for landscaping; and

b) To enhance the visual quality of development and the urban landscape.

B. Controls

1) The setback standards are outlined in the table below. Where the property has frontage to more than one road, Council will consider a variation to setbacks on the secondary road frontage, as shown in Table E6.2 below.

Table E6.2 Setback Requirements

Setback Type	Setback
Designated Road (Mamre Road and Erskine Park Road)	20m
Northern Access Road (Lenore Drive and Erskine Park Link Road to Westlink M7)	20m
Southern Link Road	20m
Western Access Road (Trunk Collector)	20m
Other Road Frontages	15m
Estate roads within the Oakdale South Industrial Estate	7.5m
Rear and Side Boundaries (unless otherwise specified elsewhere in this table)	5m
Side Boundaries within the Oakdale South Industrial Estate	0m subject to compliance with fire rating requirements

Setback Type	Setback
Rear and side boundary setbacks to development adjacent to the Oakdale South Industrial Estate, excluding the southern property boundary and the eastern property boundary.	5m
Boundary setbacks along the southern property boundary of the Oakdale South Industrial Estate	30m
Boundary setbacks along the eastern property boundary of the Oakdale South Industrial Estate	10m
Transmission Line Easement	8m
Water Supply Pipeline	5m
Boundaries Adjacent E2 Environmental Conservation zone along the Ropes Creek Corridor.	10m

2) Notwithstanding Control (1) above, no development other than the following development is permitted within the defined setback for any road, other than Lenore Drive, Mamre Road and Erskine Park Road:
   a) Car parking
   b) landscaping in accordance with the provisions of the Landscape Design Section of this Plan;
   c) maintenance/rehabilitation of biodiversity corridors or areas in accordance with the provisions of the Vegetation Management Section of this Plan;
   d) utility services installation;
   e) accessways and driveways (not permitted in setbacks to designated roads);
   f) approved signage;
   g) street furniture; and
   h) drainage works.

Figure E6.3: Building setbacks (1)

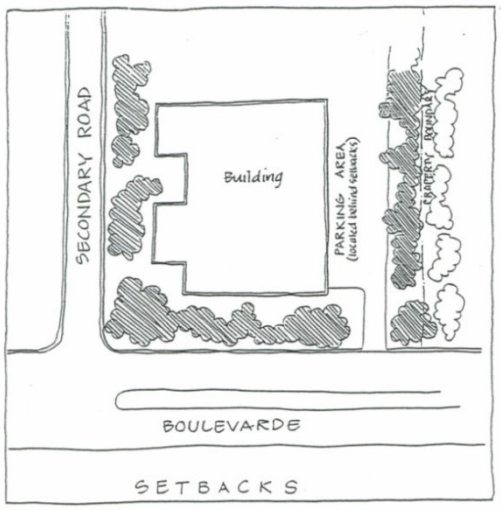
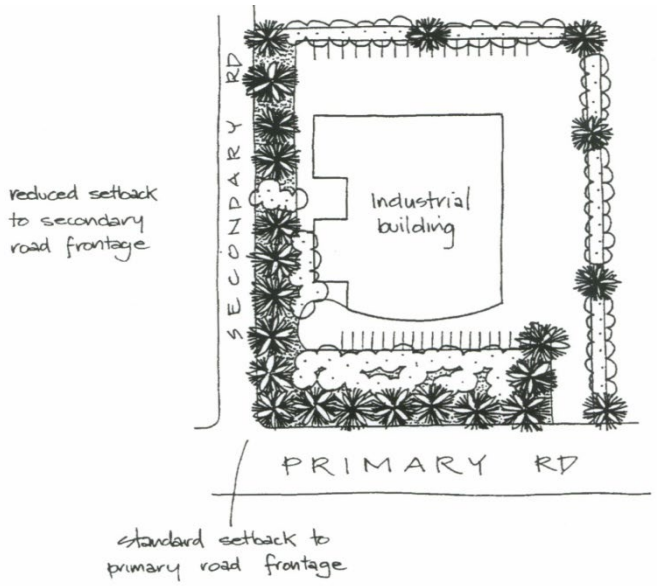


Figure E6.4: Building setbacks (2)



3) Notwithstanding Control (2) above, Council may consider a variation to permit car parking within part of the setbacks to Erskine Park Road and Lenore Drive for 1 – 23 Lenore Drive, Erskine Park (Lot 1, DP 1071114), which is the site on the corner of Erskine Park Road and Lenore Drive. Council shall consider the type and scale of the development when assessing any such request for variation to either building or car parking setbacks.
4) Existing remnant vegetation within front, rear and side setback areas shall be retained and enhanced as an integral part of the landscaping proposals for each development.
5) Where sites back onto designated roads or the main access roads, those setback areas shall be provided with mounded landscape screens. Existing remnant vegetation shall be retained and enhanced as part of those landscaping proposals.

6.3.4 Urban Design

A. Objectives

a) To encourage a high standard of architectural design, utilising quality materials and finishes;

b) To establish varied and articulated frontages facing or visible from public roads;

c) To minimise perceived scale and mass and to prevent monotonous building forms resulting from poor design of walls or rooflines; and

d) To ensure that new development contributes to the creation of a visually cohesive urban environment.

B. Controls

Architectural/Design

1) In assessing development proposals, Council will have regard to the quality of building design and materials (type and colour).

2) Prominent elevations, such as those with a frontage to the street or public reserves or those that are visible from public areas, must present a building form of significant architectural and design merit. The construction of large, blank wall surfaces is not permitted.

3) Large unrelieved expanses of wall or building mass will not be supported by Council, and as such should be broken up by the use of suitable building articulation, fenestration or alternative architectural enhancements.

4) The use of large, uninterrupted areas of metal cladding or untreated concrete surfaces for wall construction is not supported. Applicants shall vary materials or finishes for external walls to provide attractive streetscapes and quality building designs. Council may limit the use of a single construction material to 50% of a wall surface area.

5) All loading areas should be located towards the rear of allotments. Where possible, loading areas should be screened from the view of main road frontages through physical and/or vegetation screening.

6) Details of samples of external materials and finishes shall be submitted with the Development Application.

7) External materials should not have an index of reflectivity above 20%.

8) Energy efficient design principles should be employed in all building designs.

9) Walls shall be articulated to provide more varied streetscapes, where visible from public roads or adjacent residential areas.

10) Part of the cross-section of buildings shall be projected to reduce apparent height and scale of external walls, including:

    a) awnings and/or upper storeys that project above footpaths;

    b) roofs with eaves that project beyond external walls;

    c) colonnades.

11) Entrances to buildings must be highlighted by architectural features consistent with the overall design of the building.

12) Particular care should also be taken in:

    a) designing roof elements; and

b) locating plant and mechanical equipment including exhausts, so as to reduce their visual impact from elevated locations.

13) External material colours to be consistent with the following palette of colours developed for Erskine Business Park:

a) Earth Tones - stone colours, browns, muted greens, sand, dark red/ plums; and

b) Cool Tones - soft greys, grey/blues.

Siting/Building Orientation

1) Building elevations oriented towards residential areas shall be minimised. Where site constraints create difficulties in complying in this regard, elevations shall be appropriately detailed using windows, broken building planes and other architectural devices.

2) Design and layout of buildings shall give consideration to local climatic conditions. For example:

a) where possible, buildings should take advantage of a north or north easterly aspect;

b) western orientations should be avoided;

c) trees should be planted around the building to create shade, screening and wind breaks.

3) Development should not seriously impede the access of solar radiation to surrounding land and development.

Figure E6.5: Pedestrian friendly urban design

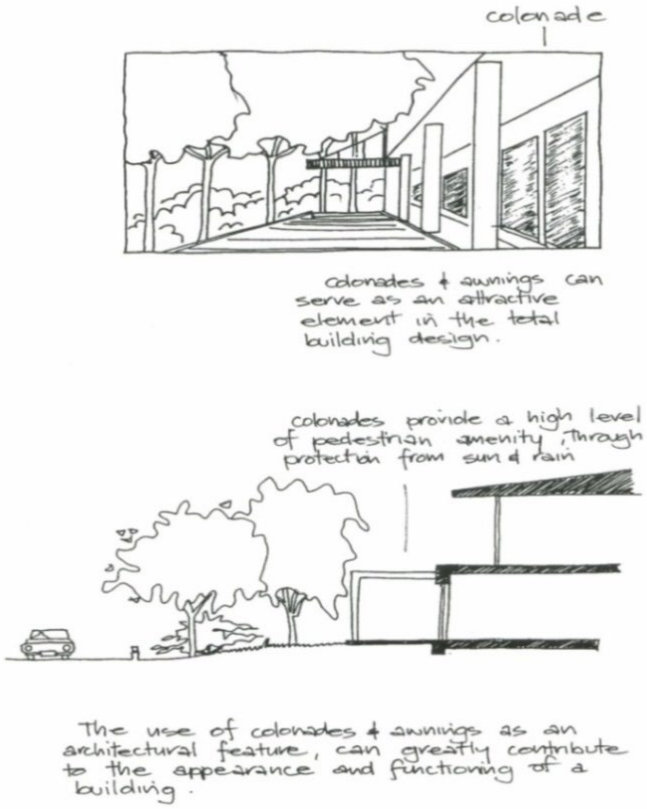
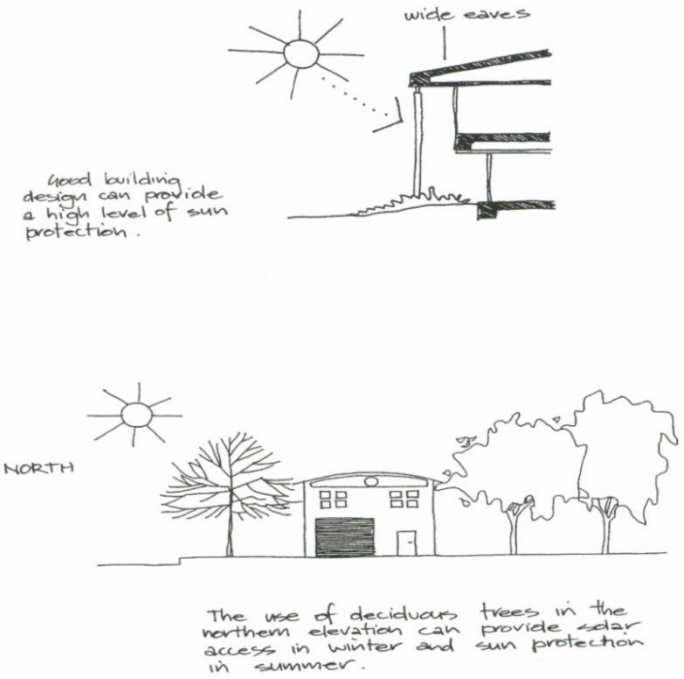


Figure E6.6: Energy efficient design



6.3.5 Signage and Estate Entrance Walls

A. Objectives

a) To promote an integrated design approach to all signage in character with the locality and its architectural and landscape features;

b) To provide a quality entrance statement and signage at each of the entrance points to the Estate;

c) To prevent the proliferation of signs;

d) To minimise the visual impact of signage;

e) To prevent distraction to motorists and minimise the potential for traffic conflicts;

f) To permit the adequate display of information concerning the identification of premises, the name of the occupier and the activity conducted on the land; and

g) To encourage a coordinated approach to advertising where multiple occupancy of sites occur.

B. Controls

1) Signage on individual allotments will be required to comply with the provisions of the Advertising and Signage Section of this Plan.

2) In addition, all advertising is required to be:

   a) constructed of high quality, durable materials;

   b) considered in conjunction with the design and construction of buildings;

   c) restricted generally to one sign identifying the name of the occupants and/or products manufactured or produced on the site; and

d) contained wholly within the site.

3) Decorative masonry entrance walls and high quality Estate signage (indicating the name of the Estate) shall be provided, as shown on Figure E6.11 – Erskine Business Park Traffic Works, at the following entrance points to Erskine Business Park:

   a) the intersections of Mamre Road and Erskine Park Road;

   b) on Erskine Park Road for south-bound traffic leaving the Erskine Park residential area;

   c) the intersection of Mamre Road and the proposed Western Access Road; and

   d) on Lenore Drive at the future eastern entrance to the estate at Ropes creek when the link to the Western Sydney Orbital is constructed.

4) The entrance walls and signage referred to in Control (3) above are to be funded by contributions levied under the Contributions Plan for Erskine Business Park.

The proposed works for the Ropes Creek entrance to the estate will, however, be funded by a separate, second account within the Contributions Plan for this Estate.

5) Any business directory signage installed by developers shall be of a high quality and shall have a consistent design throughout the Estate.

6) The official name of the Estate shall be determined by Council in conjunction with the landowners/developers and shall be utilised in a marketing/promotions campaign for the Estate.

7) For buildings within the Oakdale South Industrial Estate, a maximum of one illuminated sign is permitted on each elevation of each of each warehouse building. All illuminated signage shall be oriented away from residential receivers.

Figure E6.7: Acceptable signage

6.3.6 Lighting

A. Objectives

a) To provide adequate security lighting for business establishments, whilst ensuring there is no adverse impact upon the use and enjoyment of adjoining premises and surrounding areas, particularly residential and rural areas; and

b) To provide suitable lighting along the road network to enhance landscaping.

B. Controls

1) Lighting details shall be provided as part of any relevant Development Application.

2) Lighting design should address the principles of Crime Prevention through Environmental Design (CPTED), where there is significant pedestrian activity, late night work-shifts or safety and security issues. These principles are outlined in the Site Planning and Design Principles Section of this Plan.

3) Adequate lighting should be provided to meet security requirements without excessive energy consumption. Lighting powered by solar batteries or other renewable energy sources is encouraged. The use of sensor lighting, both internally and externally, should be considered.

6.3.7 Fencing

A. Objectives

a) To ensure that the security needs of the development are satisfied in a manner which complements the surrounding landscape design and streetscape quality; and

b) To ensure that fencing is consistently located behind the landscaped front setback and is of a consistent high quality.

B. Controls

1) No fencing other than a low ornamental type may be erected at the front site boundary. Should an applicant elect to use high security fencing, such fencing must be located either behind the landscape setback or alternatively within the landscaped area midway between the site front boundary and the building line.

2) Security fencing shall generally be of an "open" nature and of a dark colour, such as green or black plastic coated mesh fencing, which blend better with screening vegetation than galvanised wire.

Figure E6.8: Appropriate location for security fencing.

6.3.8 Services

A. Objectives

a) To ensure that adequate services are available to facilitate development; and

b) To ensure the co-location of services where possible.

B. Controls

1) Council shall require as conditions of any development consent that arrangements satisfactory to:

   a) Sydney Water will be made for the provision of water and sewerage services;

   b) Integral Energy have been made for the supply of electricity;

   c) arrangements satisfactory to the relevant telecommunications authority will be made for the provision of telecommunications services;

   d) Council have been made for the drainage of the land.

2) Council will require, as a condition of consent, that electricity and telecommunication mains be placed underground. Council also requires the co-location of services where this is technically feasible.

3) Council will require that all new premises within the Erskine Business Park be provided with state of the art telecommunications infrastructure utilising optic fibre or DSL technology to enable companies to access broad band services using high speed, high reliability telecommunications.

6.3.9 Transmission Line Easement

A. Objectives

a) To create a physical buffer between the Erskine Business Park and adjoining residential communities;

b) To provide landscaped treatment which creates:

i) an attractive outlook for adjoining residential properties; and

ii) linkages between the residential areas and Erskine Business Park; and

c) To provide limited opportunities for development of the land affected by the transmission line easement for landscaping, and/or maintenance/ rehabilitation of biodiversity conservation areas.

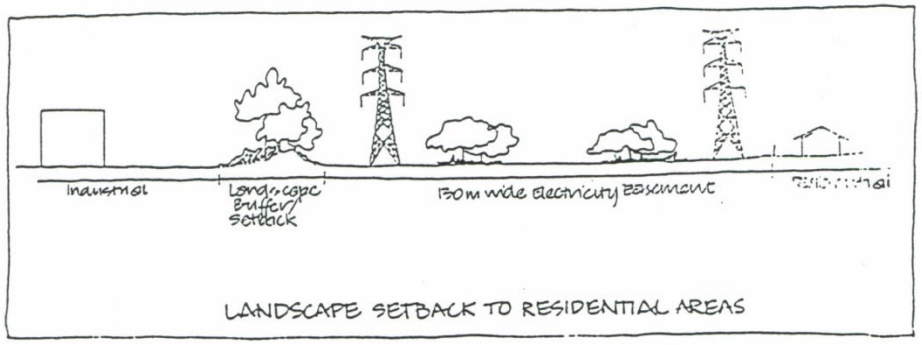
B. Controls

1) Council does not support the carrying out of development on land affected by the Transgrid Electricity Transmission Line Easement.

2) Approved landscape treatment (refer to the Landscape Design of this Plan), and/or maintenance/rehabilitation of biodiversity corridors or areas (refer Part 8 Biodiversity of this Section) shall be carried out on land affected by the transmission line easement.

3) Existing vegetation within this easement shall be retained and enhanced as part of any proposal by applicants to provide a landscape screen between a proposed development and adjacent residential areas.

Figure E6.9: Transmission easement



6.4 Environmental Quality

6.4.1 Noise Pollution

A. Objectives

a) To establish design criteria for noise emissions from industrial or other employment-generating development;

b) To establish acoustic environmental goals for existing and future adjacent residential areas; and

c) To establish noise contributions for individual allotments within the employment zones when related to residential boundaries.

B. Controls

1) Any machinery or activity considered to produce noise emissions from a premise shall be adequately sound-proofed so that noise emissions are in accordance with the provisions of the *Protection of the Environment Operations Act 1997*.

2) The use of mechanical plant and equipment may be restricted in the Northern Area (Figure E6.1). Developers in all areas should ensure through design of their development that no offensive noise is emitted.

3) Where it is considered likely that a development may cause an adverse impact on nearby rural or residential areas, a noise impact statement from a qualified acoustical engineer will be required to be submitted to Council for consideration with the Development Application. A noise impact statement will need to demonstrate that the proposed development will not create any adverse impact.

4) All development shall comply with the requirements of relevant Australian Standards and State Government policies and guidelines relating to Noise.

5) The acoustic criteria adopted by this section will be implemented in the following manner:

Erection of Buildings

1) An acoustic design report shall be required for developments that are likely to generate high noise levels and for development in the area immediately adjoining residential areas. The acoustic design report should refer to the relevant Australian Standards and State Government policies and guidelines relating to Noise.

2) If an acoustic design report is not required at the Development Application stage, conditions will be imposed as part of the development consent which requires compliance with the relevant Australian Standards and State Government policies and guidelines relating to noise. Applicants must have regard to the criteria and demonstrate a standard of acoustic treatment for the building to comply with such criteria.

3) It is essential that potential developers investigate noise amelioration features to be included in building design, which will assist in achieving compliance with Council's acoustic criteria. Having regard to the surrounding topography, it is critical that the roof element of all buildings be acoustically capable of controlling potential breakout noise.

6.4.2 Air Pollution

A. Objectives

a) To maintain existing air quality and improve local air quality where possible; and

b) To ensure future development does not adversely affect existing air quality.

B. Controls

1) The emission of air impurities is to be controlled and limited to the standards allowed by the *Protection of the Environment Operations Act 1997*, to the satisfaction of Council and the Environmental Protection Authority at all times.

2) Applicants may be required to provide information detailing the potential impact of their development on air quality in the region.

3) An assessment of the merits of the proposal will be made at the Development Application stage. However, applicants should be able to demonstrate that the most efficient means of minimising emissions are being utilised.

6.4.3 Storage, Transportation and/or Processing of Chemical Substances

A. Objectives

a) To ensure that the use, storage or transportation of any chemical substance/s do not have any detrimental impact on the environmental quality of the surrounding area; and

b) To ensure any proposed development involving the storage, transportation and processing of chemical substances shall have regard to the requirements of State Environmental Planning Policy No. 33 - Hazardous and Offensive Development.

B. Controls

The following information is to be submitted with any Development Application which involves the storage, transportation and/or processing of chemical substances:

1) External storage of goods must be avoided wherever possible. Where the nature of the activity or the materials means that internal storage is impractical, all external storage areas must be located behind the front building setback. In addition, when assessing development applications involving external storage of goods, Council will take into consideration:
   a) The proposed height and on-site arrangement of stored goods;
   b) Visual impact of the storage area, and how this is proposed to be minimised (orientation, screening with landscaping and/or solid fencing etc.);
   c) Access arrangements; and
   d) Safety issues.
2) Detailed description of the use and all methods/procedures associated with the use, including flow diagrams.
3) A floor plan of the subject premises depicting the dimensions of the building and indicating the internal layout of all equipment, storage and display areas.
4) A comprehensive list of all chemicals/goods and quantities proposed to be utilised in the activity and actually stored on the subject premises.
5) A description of the method of storage of chemicals/goods on the premises, and the type of containment or packaging to be used.
6) A description of the method of transportation of chemicals/goods to/from the premises (include the size and nature of vehicles, proposed routes and frequency of delivery to and from the site).
7) Details regarding the number of vehicles likely to be involved with the use at any one time and the provision and allocation of storage/standing areas for such vehicles.
8) Details of onsite water quality control.
9) Details of waste treatment and transportation.

6.4.4 Energy Conservation

A. Objectives

a) To encourage development designed to minimise energy usage; and

b) To encourage development to consider the application of energy efficient technology and systems.

B. Controls

1) Development must demonstrate that the following have been taken into account in the design process:-
   a) Potential for effluent re-use
   b) Water minimisation techniques, including water recycling
   c) Waste minimisation techniques, including recycling.

6.4.5 Trading/Operating Hours of Premises

A. Objectives

a) To ensure the amenity of adjoining residential and rural areas is preserved; and

b) To ensure development is provided the flexibility in trading/operating hours to ensure it is competitive and productive.

B. Controls

1) Construction works (all development) shall generally be restricted to the following hours:
   a) Monday to Friday, 7.00 a.m. to 6.00 p.m.
   b) Saturday, 7.00 a.m. to 1.00 p.m.
   c) No work on Sundays or Public Holidays
2) The hours of operation for premises involved in any type of employment generating activity shall be dealt with on a merits basis. Council appreciates that because of the nature of certain activities shift work may be essential to the viability of the development.
3) In considering applications Council shall have regard to the likely impact of the trading hours of a particular activity on the amenity of adjoining residential and rural areas.

6.5 Drainage

6.5.1 Introduction

The provision of a drainage system is necessary to ensure that urban development is adequately serviced, occurs in an orderly manner and that best practice is applied to stormwater management solutions.

Council has determined that the most effective method to facilitate development is to encourage at-source pollution controls and promote the maintenance of predevelopment flow regimes from all developed land. In considering all Development Applications, Council will assess the adequacy of the trunk drainage system, downstream of the proposed development and its ability to meet the objectives listed below.

A. Objectives

a) To ensure that an adequate and environmentally acceptable method of removing surface water and stormwater is implemented;

b) To ensure that development does not result in the pollution of waterways and that the transportation of pollutants is minimised;

c) To ensure that development does not create or exacerbate problems relating to saline or highly erodible soils;

d) To protect, restore and maintain the physical and biological integrity of the waterways; and

e) To ensure the overall drainage system is designed to minimise, to acceptable levels, the risk of local flooding.

B. Controls

1) The provision of drainage shall be in accordance with the Water Management Section of this Plan.

2) Council's preferred drainage/flooding/water quality control option for the Erskine Business Park is shown in Figure E6.10 - Erskine Business Park Drainage Works. Whole of life costs and ease of maintenance will be critical considerations in determining the form of the final drainage option.

3) There are two distinct sub-catchments within Erskine Business Park, identified generally as the “Western” catchment discharging into South Creek and the “Eastern“ catchment discharging into Ropes Creek, both of which discharge into the greater South Creek Catchment.

4) The greater South Creek Catchment is subject to the criteria contained within *Sydney Regional Environmental Plan No. 20 – Hawkesbury – Nepean River (No. 2 – 1997)* and the Water Management Section of this Plan.

6.5.2 Western Catchment – South Creek

The western portion of the release area drains under Mamre Road, to the north of the Erskine Park Road intersection, and into South Creek. It is dominated by an old quarry site, which splits the catchment into northern and southern sub-catchments.

A. Controls

1) The Warragamba-Prospect Water Supply Pipeline traverses the southern sub-catchment from west to east and further subdivides it into two distinct catchments north and south of the pipeline.
2) The catchment south of the pipeline is located outside the boundary of Erskine Business Park. There are a number of partly formalised natural drainage lines, which drain this southern external catchment under the Water Supply Pipeline and into the Erskine Business Park. Existing flows entering from this southern external catchment are to be accommodated within the stormwater drainage infrastructure elements provided within the Erskine Business Park lands.
3) The crossings under the Water Supply Pipeline shall not be modified without prior approval from Penrith City Council and the Sydney Catchment Authority.
4) Major trunk drainage elements proposed for this western catchment are shown in Figure E6.10 – Erskine Business Park Drainage Works of this Section. Additional drainage infrastructure will be required to be provided upstream of these identified elements in conjunction with development of individual sites to achieve the desired stormwater management objectives.
5) This additional drainage infrastructure is to be constructed by the developer of the land concerned. Existing creek lines within areas of significant vegetation also form major trunk drainage functional elements and are not expected to be modified by development.

6) A proportion of flows from the land to the north of Erskine Park Road are to be directed into the proposed detention basin facility on the southern side of Erskine Park Road to ensure compliance with the appropriate stormwater management outcomes.
7) Should any development occur within the "south western" sub-catchment then all developments, within the sub-catchment, shall treat and attenuate their discharges on site to Council's requirements.
8) The resultant flows shall be directed towards the north, along the eastern side of Mamre Road, into the detention basin/wetland treatment systems located adjacent to Erskine Park Road.
9) Only environmental flows, of appropriate quality, from any future development of the "south western" catchment, shall be directed across Mamre Road into the rural lands to the west.
10) All land identified by Council as performing a significant drainage function and where not specifically identified in the Contributions Plan, is to be covered by an appropriate "restriction as to user" as deemed applicable by Council, and created free of cost to Council.

6.5.3 Eastern Catchment – Ropes Creek

A. Background

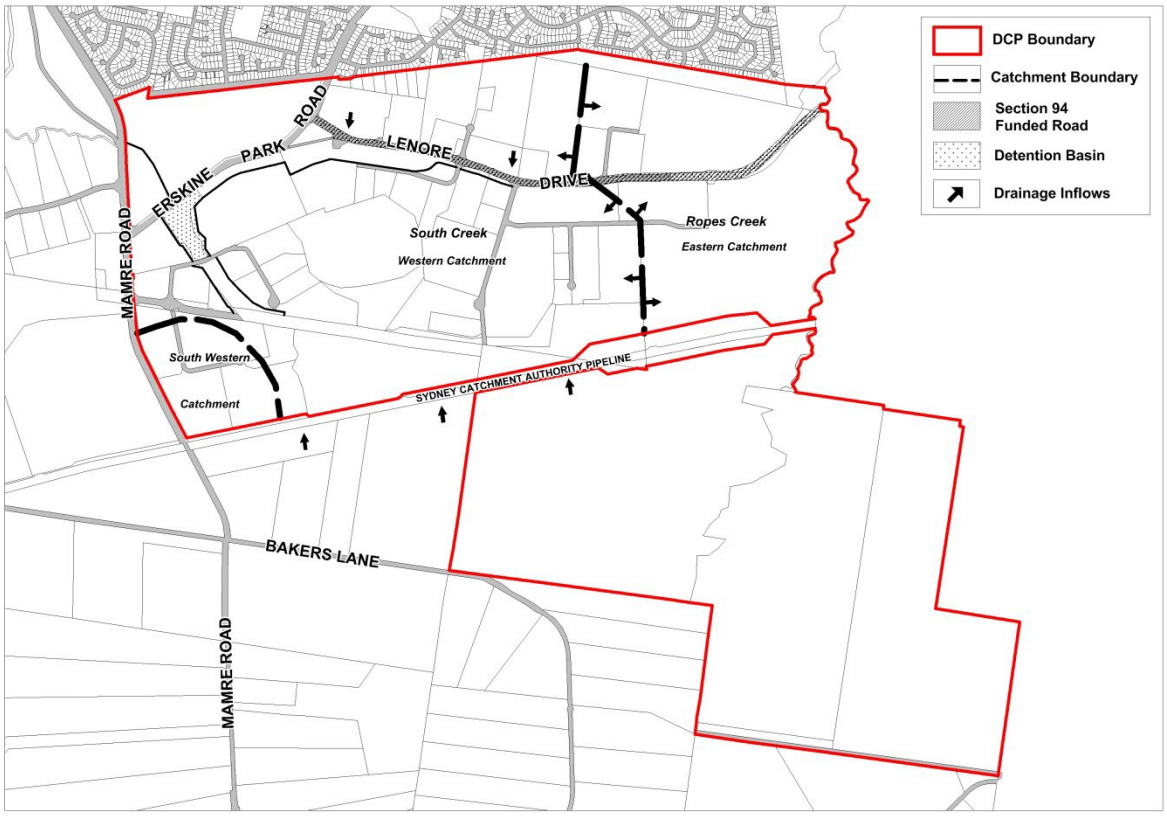
The eastern portion of the release area drains into Ropes Creek. A small section of this portion drains directly into Ropes Creek via a number of local swales, whilst the remainder of the catchment drains to an existing channel system located along the eastern side of the Erskine Park residential estate.

No trunk drainage channel elements have been identified in this catchment.

B. Controls

1) Development within the sub-catchment, which drains directly into Ropes Creek, will be required to direct its stormwater runoff into a detention basin facility. Special attention will need to be given to this aspect of the development during the subdivision design process.
2) Developments in this area will be required to design environmentally sensitive stormwater management solutions consistent with the constraints specific to the site.
3) All drainage infrastructure required in this catchment, shall be provided with the development of the land, at the developer's cost.
4) Management of stormwater quantity and quality close to its source has the potential to limit the impact of major drainage works on the endangered vegetation throughout this area. Consequently, at-source, on-site controls are the preferred treatment strategy in this catchment and their implementation will be encouraged.
5) No regional water quality or water quantity controls have been identified in this Plan, however there will be a requirement for the runoff from the Eastern Catchment to conform to Council's standard. This will be the responsibility of individual developers in that part of the estate. It is envisaged that these facilities will be provided near the Ropes Creek interface. There will be no levies associated with this Eastern Catchment.
6) The drainage solution shall include provision for water quality and quantity for all roads. This water quality/quantity system shall be clear of the 1 in 100 year flood line and biodiversity corridor.
7) Land identified by Council as performing a significant drainage function and where not specifically identified in that plan is to be covered by an appropriate "restriction as to user" as deemed by Council.

Figure E6.10: Erskine Business Park Drainage Works



6.6 Transport Network

A. Objectives

a) To create a road network which enables a safe and efficient access for all users, while minimising through traffic on minor roads;

b) To incorporate sustainable landscape and drainage opportunities in the design of the transport network;

c) To encourage the use of efficient alternate transport, including public transport, bicycles, and pedestrians;

d) To provide traffic facilities to give safe and efficient access to Mamre Road and Erskine Park Road;

e) To provide for a future road link to the Westlink M7 and to provide all properties within this estate a direct connection to this link road;

f) To minimise the number of road entry points to designated roads and the northern access road thereby allowing more efficient traffic management;

g) To maintain the capacity of the State Arterial Roads (Erskine Park and Mamre) by minimising the number of access points; and

h) To provide better connectivity between Erskine Business Park and other parts of WSEA.

B. Controls

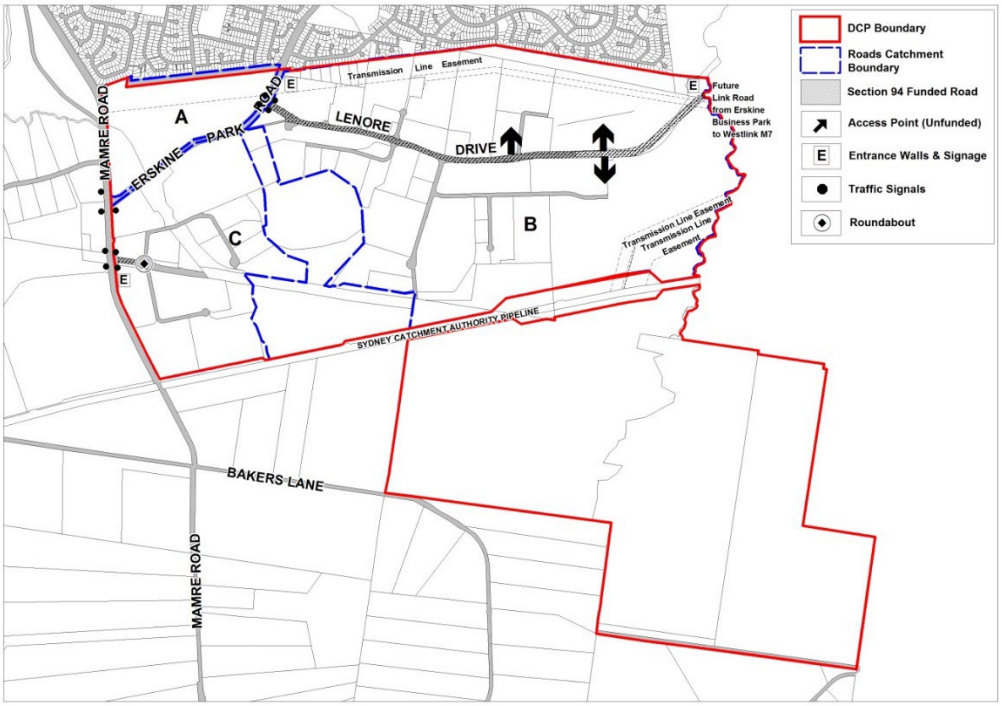
Internal Road System

1) The two main access roads to Erskine Business Park indicated in Figure E6.11 are:
   a) Lenore Drive (Northern Access Road)
   b) James Erskine Drive (Western Access Road)
2) Access Road.
3) The internal road system shall be provided in accordance with the principles and requirements set out below.
4) Access points shall be located so as to optimise safety, traffic flow and landscape opportunity. The Northern Access Road shall be access controlled such that:
   a) **North of Northern Access Road (existing location of Lenore Drive):** Access to Lenore Drive will be limited to one access point per lot. Upon redevelopment, the access point for Lot 5A, DP162129 shall be combined with one of the adjoining lots.
   b) **South of Northern Access Road:** Access to Lenore Drive shall be limited to the three points as shown on Figure E6.11 of this Section.
5) All parking shall be provided either on site or in centralised off-road locations.
6) Upgrading of Erskine Park Road and Mamre Road shall be undertaken to accommodate the increases in traffic generated by this development.
7) Direct vehicular access to Mamre Road shall only be permitted at the signalised intersections with Erskine Park Road and the James Erskine Drive. Direct vehicular access to Erskine Park Road shall only be permitted at the signalised intersection to Lenore Drive and at one combined intersection for the property north of Erskine Park Road and the eastern block for Lot 16 DP259146. No other direct vehicular access to these designated roads will be permitted.
8) All intersections within the internal road network shall incorporate traffic facilities, which promote safe and efficient traffic movement.
9) The proponent shall have regard to "Guide for Traffic Generating Development", Roads and Traffic Authority of NSW, October 2002.
10) Development shall, where appropriate, be designed to:
   a) Allow all vehicles to either leave or enter the site in a forward direction;
   b) Accommodate heavy vehicle parking and manoeuvring areas;
   c) Avoid conflict with staff, customer and visitor vehicular movements; and
   d) Ensure satisfactory and safe operation with the adjacent road system.
11) Full details of the volume, frequency and type of vehicle movements shall be submitted with the development application.
12) In general:
   a) Turning circles will be required to be provided to accommodate the largest type of truck which could reasonably be expected to service the site.
   b) All developments must be designed and operated so that a standard truck may complete a 3-point or semi-circular turn on the site without interfering with parked vehicles, buildings, landscaping or outdoor storage and work areas; and
   c) Large-scale developments shall be designed to accommodate semi-trailers. In the case of the conversion of an existing development, should it appear that a truck turning circle may prove difficult; a practical demonstration may be required.

13) Council will assess the suitability of manoeuvring areas provided for large vehicles by reference to Australian Standard 2890 series.

14) Adequate space is to be provided within the site for the loading, unloading and fuelling (if applicable) of vehicles. These areas shall be screened from the road.

Figure E6.11: Erskine Business Park Traffic Works



6.7 Biodiversity

The Biodiversity Management Plan Erskine Park Employment Area, which identifies the Biodiversity Conservation Area, was devised by Council, Department of Planning and the Landowners to deliver a genuine balance between development and conservation to deliver dual outcomes of environmental protection and employment generation.

6.7.1 Biodiversity Conservation Area and Landscape Buffer

Figure E6.12 nominates the extent of the biodiversity conservation area/corridor to be conserved or managed for biodiversity purposes and the extent of the landscape buffer on Lot 11 DP229784, 576b Mamre Road, Erskine Park which has been replaced by a Landscape Buffer in accordance with a Major Project Approval issued by the Minister for Planning on 28 October 2009.

A. Objectives

a) To promote the conservation of urban bushland;

b) To protect and preserve native vegetation and biological diversity in accordance with the principles of ecologically sustainable development;

c) To retain native vegetation in parcels of a size and configuration which will enable the existing plant and animal communities to survive in the long term;

d) To protect and enhance habitat for threatened species and endangered ecological communities;

e) To provide a biodiversity corridor linking system linking remnant native vegetation across the site with the riparian biodiversity system within South Creek, the remnant native vegetation in Erskine Business Park and the Ropes Creek Riparian Biodiversity system; and

f) To provide funding and management arrangements to enable the establishment of a biodiversity corridor and its ongoing maintenance.

B. Controls

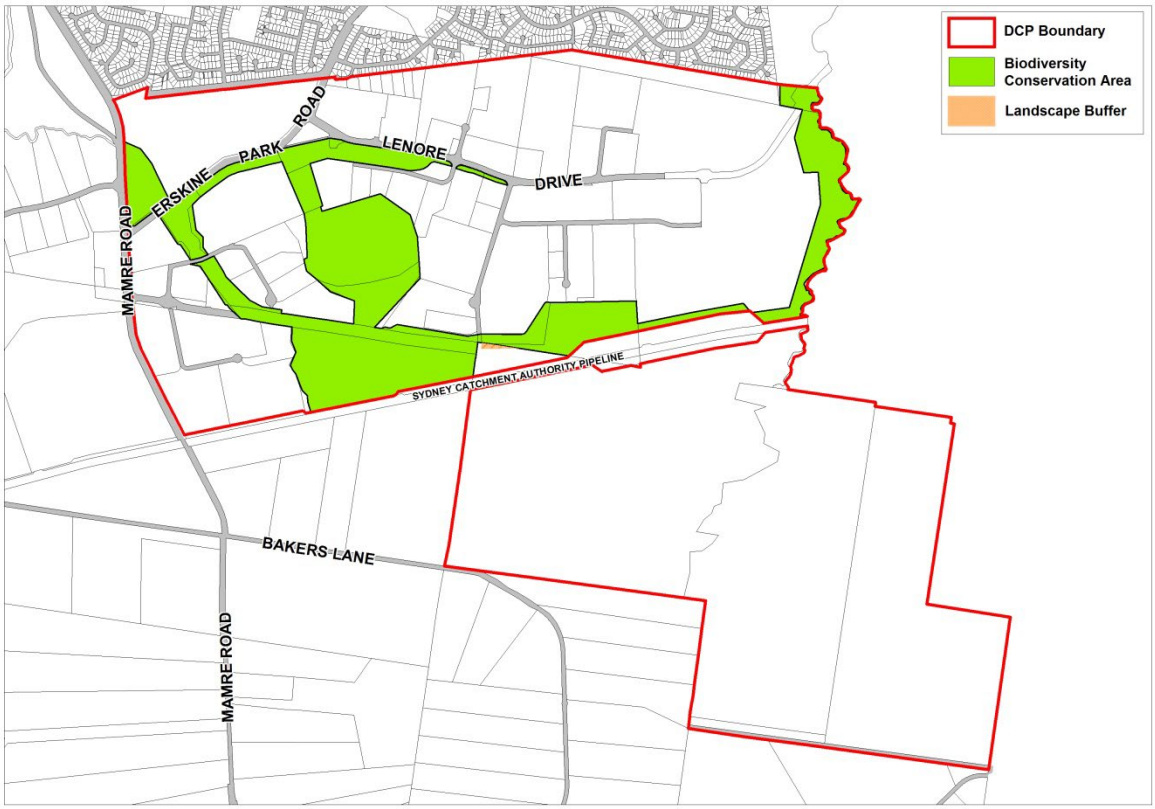
1) No clearing of native vegetation shall occur within the Erskine Business Park Biodiversity Conservation Area and Landscape Buffer as outlined by Figure E6.12 – Biodiversity Conservation Area and Landscape Buffer.

2) No clearing of native vegetation shall occur within Erskine Business Park without the consent of Council.

3) Land located within the Biodiversity Conservation Area shall be managed in accordance with the endorsed Biodiversity Management Plan by Greening Australia or the land manager appointed by the Department of Planning and Environment.

4) A Landscape Management Plan is to be prepared to the satisfaction of Council for land located within the Landscape Buffer Area.

Figure E6.12: Biodiversity Conservation Area and Landscape Buffer



6.8 Landscaping

This section should be read in conjunction with the Landscape Design Section of this Plan.

6.8.1 Objectives

a) To retain and enhance locally and regionally significant cultural and ecological values;
b) To create a landscape character and amenity that is appropriate to the scale and nature of the development; and
c) To develop an overall landscape character that is derived from natural and cultural landscape features contained within the site and immediate environs.

6.8.2 Controls

Removal of existing vegetation can result in a lower take up of water contributing to a rising ground water table and potential problems with salinity. Saline soils can damage roads, parking areas and buildings as well as ultimately causing scouring and effecting vegetation growth. Once soils have become saline it is virtually impossible to reverse the effects. Preservation of existing vegetation, particularly larger trees on ridgelines can help reduce or delay the impact of salinity. Existing trees are to be preserved wherever possible. The siting and layout of a development at the initial concept stage must consider the location of trees with a view to their preservation. Existing trees shall not be removed prior to the written consent of Council being obtained.

The existing vegetation to be retained must be protected from soil compaction, root, trunk and limb damage, soil contamination and changes in surface level that will affect the health of the specimen. Protection measures are to be installed prior to the commencement of any earthworks. A man-proof, sturdy and durable chain-wire fence of sufficient height shall be erected 1m beyond the dripline of each specimen for the full circumference of all vegetation to be protected.

6.9 Landscape Areas

6.9.1 Objectives

a) To provide functional areas of planting that enhance the presentation of a building;
b) To screen undesirable views;
c) To reduce building energy consumption;
d) To provide outdoor staff amenity facilities;
e) To select tree species that are “low maintenance” planting to reduce the impact of green waste;
f) To provide wildlife habitats; and
g) To contribute to the overall character of the locality.

6.9.2 Controls

Selection and Use of Planting Material

1) A framework planting of endemic canopy and shrub species is to be established for all developments. This will enhance the sense of place for each development site. Consideration to be given to features such as bird attracting qualities, aromatic foliage and flowers, and habitat value as well as visual qualities, site suitability, and proximity to biodiversity corridors or areas. Habitat value is to be given high priority.
2) Smaller scale and less visually prominent planting may include species other than those endemic to the area. This will produce variety and interest in the landscape at this scale. This does not apply to development adjoining Biodiversity Areas or within or adjoining Biodiversity Corridors.
3) Property entrances may be highlighted with feature planting, and need not be limited to native or endemic species. No plant species shall be used on site that could become a weed within remnant bushland areas or creek lines.
4) Plant species should be carefully selected to meet service authority requirements in easement locations.
5) Plant material in car parks should be used to provide shade, ameliorate views of large expanses of paved areas and cars, and to identify entrances to car parks.
6) Trees providing shade in car parks should be given sufficient area for root development.
7) Narrow strips of landscaped area between an allotment boundary and building, or between parking areas and a building should be avoided.
8) Island planting beds should be interspersed throughout large parking areas. Planting should consist of ground covers, shrubs to 1m, shade producing and canopy species.
9) Plant material shall be a mix of super-advanced, advanced and normal nursery stock that will provide a quick effect especially in visually prominent areas. Larger plant sizes would be appropriate in some locations.

10) Groundcovers should be considered as a grass alternative in areas not specifically designed for pedestrian use.

11) Presentation of a building facade to the street should be complemented with appropriate enframing or screening vegetation. The visual impact of large expanses of wall should be reduced in scale by architectural treatment as well as by dense grove planting or other landscape design solutions.

12) Consideration should be given to solar access and energy conservation, with the appropriate use of deciduous trees.

6.9.3 Requirements

Hard Landscape Materials

1) Paving, structures and wall materials should complement the architectural style of buildings on the site and be of local origin where possible.

2) Materials should cause minimal detrimental visual impact, and the use of subtle coloured materials and block or brick paving is encouraged.

6.9.4 Requirements

Performance Standards and Maintenance

1) Landscape works are generally constructed at the completion of building works.

2) However, Council may require by way of conditions of development consent, that tree bonds be placed over existing significant trees on a proposed development site. Any such existing trees and all landscape works from the approved development should be maintained throughout the duration of the construction works and in perpetuity for the life of the development. The onus for satisfactory maintenance is on the applicant until the development has been completed and on the owner thereafter.

3) These requirements should be read in conjunction with the Landscape Design Section of this Plan.

6.9.5 Landscape Area Requirements

Landscape Setbacks for the Oakdale South Estate

1) The following minimum landscaped setbacks shall be applied at the Oakdale South Estate:

(a) Southern Link Road: Average of 20m depth along the site frontage. 20m setback / 10m landscape.

(b) Collector Road: 7.5m, or average of 50% of setback along the frontage

(c) Local Estate Road: Average of 50% of setback along the frontage.

(d) Side boundary: No minimum requirement.

(e) Rear boundary: 2.5m

f) Southern property boundary: perimeter landscape treatments along the 30m earth bund wall on the southern boundary of the OSE; and,

g) Eastern property boundary: a 10m wide landscape setback along the entire length of the eastern property boundary.

Figure E6.13: Landscaping for a large industrial site.

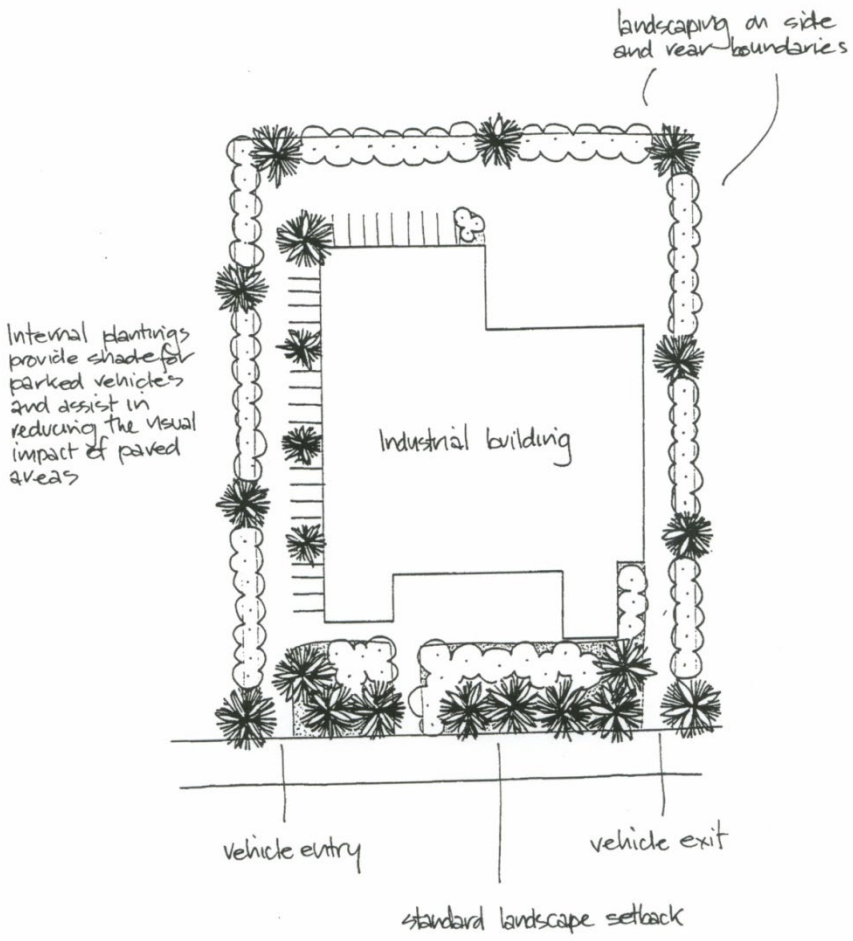
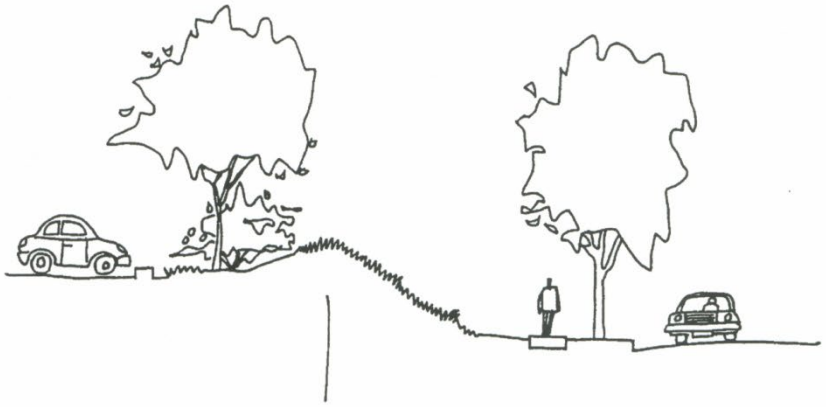
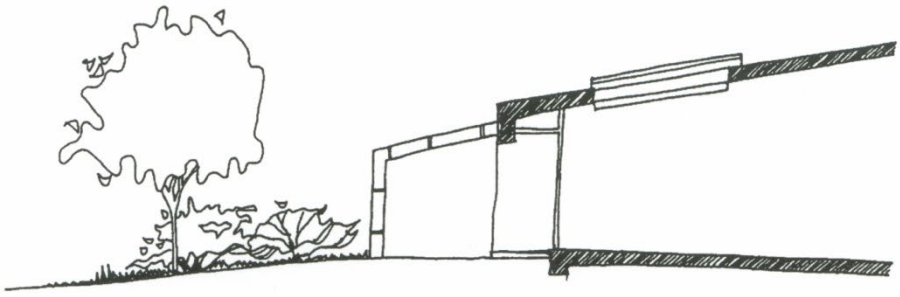


Figure E6.14: Landscaping concepts



The use of a landscaped mound provides a good visual screen for parking and outdoor storage areas.



Integration of built forms and landscaping can be achieved through the use of groundcovers & colonades