The Hills Development Control Plan (DCP) 2012

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Part D Section 5 Kellyville / Rouse Hill Release Area



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1. INTRODUCTION

This Section of the DCP must be read in conjunction with Part A – Introduction of this DCP.

This Section of the DCP consists of this written document and four accompanying maps (Sheets 1, 2, 3 & 4) which can be viewed at Council's Customer Service Centre or www.thehills.nsw.gov.au.

1.1. LAND TO WHICH THIS SECTION OF THE PLAN APPLIES

This Section of the DCP applies to land within the Kellyville/Rouse Hill Release Area as outlined by a bold black line shown in Figure 1. Reference should be made to the accompanying maps (Sheets 1 to 4) for detailed boundary location.

1.2. OBJECTIVES AND DEVELOPMENT CONTROLS

This Section of the DCP provides detailed guidance for persons wishing to develop within the Kellyville/Rouse Hill Release Area and seeks to ensure the orderly development of the area through the application of planning objectives and controls specific to the release area. The controls relate to subdivision planning, road design, dwelling design and small lot housing.

The specific objectives of this Section of the DCP are as follows:

- (i) To establish a single comprehensive and integrated set of development objectives and controls for most aspects of residential development occurring within the release area;
- (ii) To implement the aims and objectives of LEP 2012 with respect to residential development;
- (iii) To ensure that residential development is compatible with and has minimal impact upon surrounding development and offer high levels of amenity, solar access and energy efficiency for future residents;
- (iv)To control the character and quality of residential development consistent with the expectations of existing release area residents;

- (v) To ensure that the housing market recognises the community's changing demographic profile and provides a mix of household types catering for the different stages in the household life-cycle; and
- (vi)To ensure cost effective residential development reflecting appropriate community standards for health, safety, environmental protection and amenity.

A number of planning investigations and studies resulted in the zoning framework for the release area and assisted in the preparation of this Section of the Development Control Plan. These documents are listed below and in Part A of the DCP and can be read in conjunction with this Section of the DCP to enable a greater understanding of Council's planning objectives for the area:

- Kellyville/Rouse Hill Landscape and Urban Design Strategy, 1993
- ii. Kellyville/Rouse Hill Open Space and Recreation Plan, 1998
- iii Kellyville/Rouse Hill Release Area Contributions Plans No's 8A – 8E.

The controls in this Section are not an exhaustive list of controls applicable to development within the Kellyville/Rouse Hill Release Area. In addition to the following Section references, this Section must be read in conjunction with Part A – Introduction of the DCP.

- Part B Section 2 Residential
- Part B Section 3 Dual Occupancy
- Part B Section 4 Multi Dwelling Housing
- Part B Section 5 Residential Flat Buildings
- Part C Section 6 Flood Controlled Land

For example where residential flat buildings are proposed within the release area, the relevant provisions of this plan will apply in addition to Part B Section 5 – Residential Flat Buildings.

In the event of any inconsistency between this Section of the DCP and any other Sections of the DCPs, the provisions of this Section shall prevail only to the extent of the inconsistency.

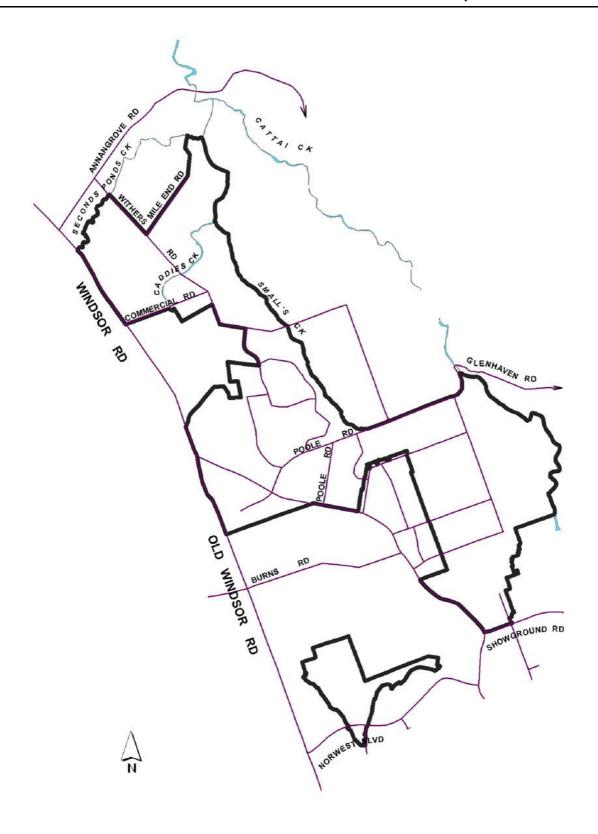


Figure 1 Land to which plan applies (not to scale)

1.3. DEVELOPMENT CONTROL MAPS

OBJECTIVE

 To ensure the release area develops in an orderly manner consistent with the identified land use structure and current zoning framework.

DEVELOPMENT CONTROL

(a) All applications for residential development particularly subdivision should conform to the land use structure and pre-planned road layout as shown on the maps accompanying this Section of the DCP.

1.4. SITE ANALYSIS

OBJECTIVES

- To encourage a comprehensive approach to site planning, design and assessment of residential development.
- (ii) To facilitate assessment of how future dwellings relate to their immediate surroundings and each other.
- (iii) To facilitate development of a design that minimises the negative impacts on the amenity of adjoining residential development in accordance with Council's ESD objective 7.
- (iv) To ensure development is compatible with land capability.
- (v) To minimise adverse impacts on the environment in accordance with Council's ESD objectives 3 and 4.

DEVELOPMENT CONTROLS

- (a) Development should be designed to respect site constraints such as topography, drainage, soil, landscapes, flora, fauna and bushfire hazard.
- (b) Disturbance to existing natural vegetation and landforms, watercourses, wetlands and overland flow paths should be minimised.
- (c) Development on land adjoining bushland reserves should incorporate measures (such as setbacks and buffers) to prevent any impact on the reserves.

- (d) Development should be sited on the area of land presenting the least topographic constraints.
- (e) Development should be sited away from steep slopes (particularly those containing natural vegetation) so that, where possible, these features can be kept in a natural state.

SUBMISSION REQUIREMENTS

For subdivision applications the site analysis must include:

- the site and its surrounds (Refer to Appendix 2 of this Section).
- a plan describing the site (Refer to Figure 2 of this Section).
- a statement explaining how design and development has regard to the site analysis carried out in one above.
- demonstration of how allotment /dwelling locations and dimensions respond to topography, site constraints and achieve solar orientation.
- the results of the tree survey/assessment and identification of trees/and or bushland to be protected (refer section 2 of this Section).

For all applications proposing one or more dwellings the site analysis must include:-

- the site and its surrounds (Refer Appendix 2 of this Section).
- a plan describing the site (Refer Figure 2 of this Section).
- calculation of built upon area site coverage.
- a statement explaining how design and development has regard to the site analysis carried out in one above.
- demonstration of how allotment / dwelling locations and dimensions respond to topography, site constraints and achieve solar orientation.

Applications for all other residential development types are to submit a Site Analysis Plan in accordance with the provisions of the relevant Sections of this Development Control Plan.

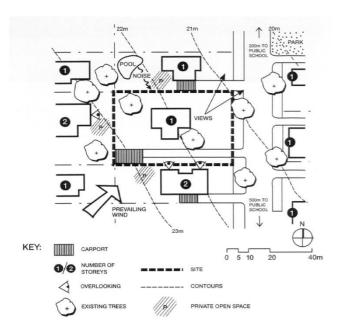


Figure 2 Site analysis plan

1.5. DEVELOPER CONTRIBUTIONS

Refer to Section 94 Kellyville/Rouse Hill Contributions Plan No's 8A – 8E.

1.6. BUSH FIRE HAZARD MANAGEMENT

OBJECTIVE

 To reduce the risk to life and property in areas of bushfire risk.

DEVELOPMENT CONTROL

(a) Council has adopted the NSW Rural Fire Service Guidelines entitled 'Planning for Bushfire Protection 2006'. Development subject to bushfire risk will be required to satisfy the requirements of these guidelines.

2. SUBDIVISION

2.1. TREE AND BUSHLAND PROTECTION

The retention of trees and bushland in new development areas provides a range of benefits to the new home buyer including a contribution to the character of the neighbourhood, spatial definition and interest. Environmental values gained include:

the possible retention of wildlife links.

- an ecological framework which sustains overall environmental health and ecological processes.
- improved aesthetic values following subdivision and building development.

OBJECTIVES

- To ensure significant bushland is substantially retained and protected and that development enhances and complements this bushland.
- (ii) To conserve and protect the biodiversity of the release area including habitats of threatened flora and fauna species and communities.
- (iii) To ensure development and subdivision adjacent to bushland does not detrimentally affect the continued survival of that bushland through appropriate protection mechanisms.
- (iv) To provide a basis for adapting lot dimensions and areas, particularly within the Fringe Density areas to enable the retention of trees and bushland.

DEVELOPMENT CONTROLS

- (a) Prior to development for the purposes of subdivision or small lot housing the applicant is to prepare a tree survey utilising the services of a qualified arborist. This plan will ensure an understanding of the condition of existing trees which will assist in analysing the site opportunities and is to be submitted at subdivision application stage. The tree survey must incorporate a survey of all trees as defined under Council's Tree Preservation Order and all bushland, as defined by SEPP 19 - Bushland in Urban Areas.
- (b) The tree survey/assessment must include:
 - species identification of all trees;
 - a rating of the condition of all existing trees, their health, aesthetic value and life expectancy as a basis for ascertaining their value for retention;
 - an overall rating for groups of trees where they contribute to the area as a mass;
 - definition of tree protection zones and measures consistent with the requirements outlined below;
 - details indicating the position of trees/bushland in relation to proposed roads and building platforms; and

identification of trees and bushland to be retained following subdivision.

The tree survey may also include any other vegetation that the arborist considers may contribute to the landscape if retained, particularly where the survey includes bushland or regenerating bushland.

- (c) Trees and bushland nominated for retention and proposed protection measures are to be submitted with the subdivision application and shown on the site analysis plan. Protection mechanisms must include:
 - protective fencing around trees and bushland to be retained to prevent damage; and
 - fences are to be constructed to the drip-line of existing vegetation as a minimum and to prevent damage within the dripline/protection zone by limiting access into it (Refer to Figure 3),
- (d) Where threatened species or communities are identified and are to be conserved the following actions should be undertaken:
 - protection measures in accordance with the requirements of the relevant recovery plan; identification on site of the extent of the community to be retained;
 - plan of management for the land outlining how the land is proposed to be managed in the future; and
 - the provision of chain-wire/protective fencing (min 1.2 metres in height) around areas where rare flora and fauna are to be retained and to remain in place during the duration of the subdivision and building construction.
- (e) Any new tree plantings are to be consistent with the tree species selection and planting guidelines provided in Appendix 1 of this Section of the DCP.

2.2. DENSITY AND ALLOTMENT SIZE

This Section of the DCP incorporates density targets which were derived from an analysis of their location to surrounding uses, and topographic and vegetation constraints. All residential development is required to meet these targets. The location of the different density types are shown on the maps accompanying this Section of the DCP.

They are described as follows:

- ➤ Fringe Density areas typically occur in environmentally sensitive areas and are to be dominated by large lot detached housing with environmentally significant features of the site are protected. The density range for these areas is 5 to 8 dwellings per net hectare, however the minimum density will depend on individual site constraints;
- Cluster Density areas are similar in character to the conventional lot subdivisions and are required to be developed within the density range of 10 to 13 dwellings per net hectare. The area requires a mix of residential allotment sizes:
- ➤ Local Centre Density areas typically occur within close proximity to community and/or commercial facilities and are similar to cluster density areas, however, the density range is between 15 to 20 dwellings per net hectare; and
- Town Centre Density areas are in close proximity to either the Regional Centre or the Kellyville District Centre. The density range for these areas is 30 to 35 dwellings per net hectare. Due to the high density requirement, it is envisaged that a major form of the housing will take the form of multi-unit housing.

OBJECTIVES

- (i) To facilitate a range of lot sizes and housing types within the release area to meet changing demographic profiles and housing requirements.
- (ii) To locate smaller lots and multi unit housing types within close proximity to community facilities, open space, public transport, and commercial centres.

DEVELOPMENT CONTROLS

- (a) Residential development shall achieve the densities within the range of the applicable density type as shown in Table No.1.
- (b) All residue allotments created for future small lot housing developments are to have the minimum dimensions of 40 metres x 50 metres.
- (c) Subdivision applications seeking to create residue parcels for future small lot housing developments shall be accompanied by a concept plan, consistent with the provisions of this Section of the DCP, demonstrating the attainment of the density provisions of this plan.

(d) All residential subdivisions are required to provide a mix of allotment sizes.

Table 1 Density requirement

Residential Type	Minimum Density	Maximum Density
Fringe	5 dwg/net ha	8 dwg/net ha
Cluster	10 dwg/net ha	13 dwg/net ha
Local Centre	15 dwg/net ha	20 dwg/net ha
Town Centre	30 dwg/net ha	35 dwg/net ha

- (e) A number of development constraints apply to those areas indicated with a Development Restriction on the maps accompanying this Section of the DCP. They are:
 - All areas affected by the Development Restriction are required to submit a Development Application for the filling of the land in line with Part C Section 6 of this DCP – Flood Controlled Land; and
 - The area of land to the north of Georgia Terrace affected by the Development Restriction shall not be developed for residential purposes until such time as the adjacent detention basin has been constructed. Filling of the land will be required to a height of one metre above the crest of the adjacent detention basin embankment tapering down to the natural surface level downstream of the basin.

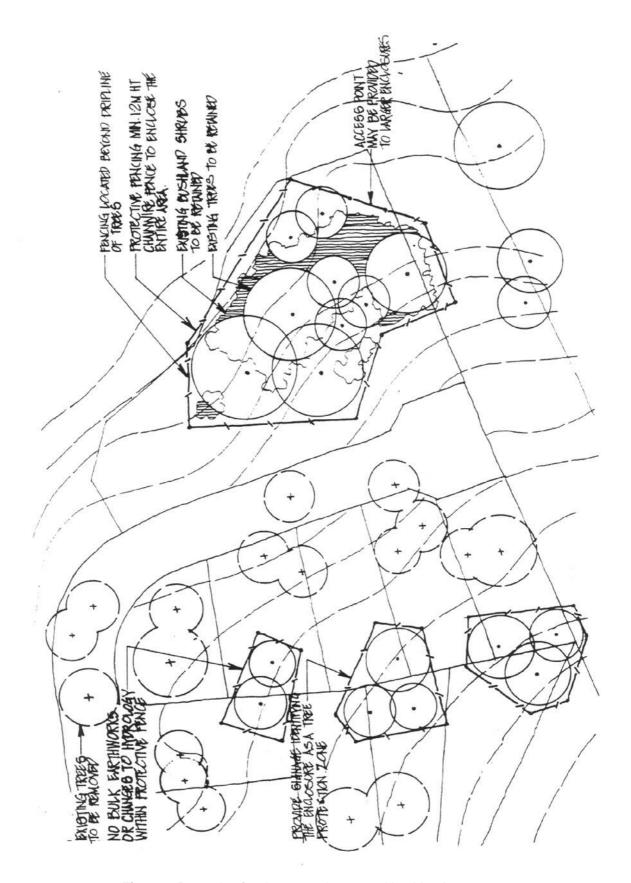


Figure 3 Protective fencing around trees and bushland

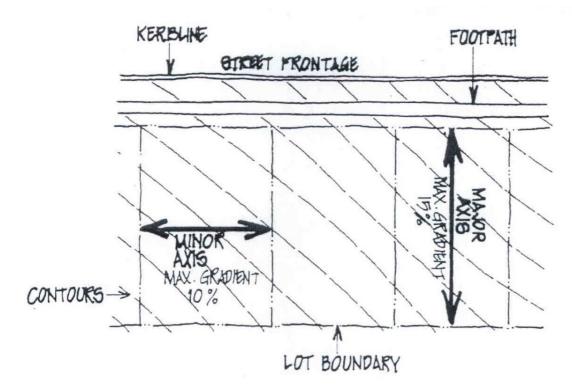


Figure 4 Small lot development

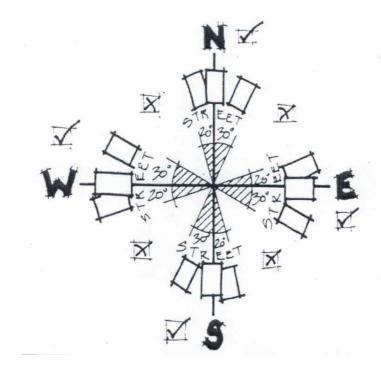


Figure 5 Permissible orientation

2.3. ORIENTATION AND SHAPE OF ALLOTMENTS

The shape and orientation of allotments and dwellings have a fundamental bearing on the level of comfort in a dwelling and the ability to take advantage of solar access, energy conservation and generation.

OBJECTIVES

- To ensure lots are orientated to enable microclimate management and that environmental features are protected.
- (ii) To maximise solar access to dwellings, internal dwelling spaces, and associated private outdoor spaces.

DEVELOPMENT CONTROLS

- (a) Each allotment shall be orientated and of a shape to enable the siting of a dwelling and ancillary outbuildings, outdoor space, and vehicle parking so as to allow the house to receive direct sunlight. The allotment should also be able to satisfy the other design provisions of this Section of the DCP.
- (b) Dimensions of lots are required to be adequate to protect solar access on-site, taking into account likely dwelling size and the relationship of each lot to the street.
- (c) Lot sizes and dimensions are required to enable dwellings to be sited to protect natural or cultural features, and respond to site constraints including slope, vegetation, drainage or bushfire risk
- (d) Lot frontages are required to be orientated to streets and open spaces to assist personal and property security, deterrence of crime and vandalism, and surveillance of footpaths, drainage lands and public open space.
- (e) In standard subdivision applications a minimum of 70% of all lots are required to be orientated to facilitate siting of dwellings to take advantage of solar access by ensuring the long axis of lots are within the range N20W to N30E, or E20N to E30S, refer to Figure 5.

Variations to the above orientation requirement will be considered where it can be demonstrated that the parcel to be subdivided is too constrained to make the orientation within the specified range possible.

- (f) All allotments are to be rectangular in shape and not splayed at the end of cul-de-sacs.
- (g) All allotments (not including small lot housing or multi-unit housing) are to have a minimum width of 15 metres and a minimum depth of 30 metres.
- (h) All allotments are required to be capable of containing a rectangular building platform of 10 metres x 15 metres within the required setbacks.
- (i) The access handle to a single battleaxe lot is required to have a minimum width of 4 metres, and 6 metres where the access handle provides access to 2 lots.

2.4. ROAD PLANNING

OBJECTIVES

- (i) To provide an acceptable level of access, safety and convenience for all street and road users in residential areas, while ensuring acceptable levels of amenity, and minimising the negative impact of traffic.
- (ii) To provide a legible and permeable movement network for pedestrians and cyclists along streets and paths to points of attraction within and adjoining the development.
- (iii) The road network is based on a hierarchy of nine road/street types, as shown in Figures 6, and include:
 - Arterial Roads such as Windsor Road and Old Windsor Road carry major regional traffic flows and are largely the responsibility of the State Government;
 - Sub-Arterial Roads are expected to carry between 5000 to 15000 vehicles per day and will require one to two traffic lanes in each direction. Direct residential access to these roads is not normally permitted unless stated on the maps accompanying this Section of the DCP:
 - ➤ Collector Streets collect traffic from the access places and access streets and carry higher volumes of traffic. A reasonable level of residential amenity and safety is to be maintained by restricting traffic volumes and vehicle speeds through street alignment and intersection design;
 - Access Street is a street providing local residential access with shared traffic, pedestrian and recreation use, but with local traffic priority;

- Access Place is a minor street providing local residential access with shared traffic, pedestrian and recreation use, but with pedestrian priority; and
- Access Way is a minor street providing local residential and cycleway access where house lots front one side of the street only, and the other side of the street is either public open space or a drainage reserve.

The specific objectives of locating Access Ways adjacent to open space and trunk drainage areas are:

- To facilitate the orientation of allotments and dwellings to front the open space/drainage areas.
- (ii) To enhance the outlook, setting and amenity of subdivisions adjoining open space/drainage areas.
- (iii) To increase pedestrian accessibility to these areas.
- (iv) To promote passive surveillance of publicly accessible areas thereby increasing safety.

The planning objectives for the intersection of Old Windsor Road and Windsor Road are as follows:

Short Term - To incorporate traffic management and safety improvements including signalisation and any such works as proposed are to be funded by the Roads and Maritime Services.

Long Term - The intersection or treatment to Windsor and Old Windsor Road to incorporate either local access or service roads to facilitate the orderly development of commercially zoned lands north of Whitehart Bridge.

DEVELOPMENT CONTROLS

- (a) The street and road network should conform to the pre-planned road layout as shown on the maps accompanying this Section of the DCP.
- (b) Internal intersections are to be either Tjunctions, roundabouts or controlled by other appropriate traffic management treatments to slow and control traffic.
- (c) Street leg lengths, radius of bends and speeds at slow points are to comply with the requirements of AustRoad Guidelines 1992. Care should be taken to ensure that the changed street conditions do not become a hazard to an unsuspecting motorist. Sudden and

- unexpected changes in driver conditions are another cause of accidents. This reinforces the need for street design and construction which reflects the required driver behaviour.
- (d) An acoustic report prepared by a suitably qualified consultant is to be submitted with all residential development applications for land adjacent to existing or proposed Arterial and Sub-arterial roads and should comply with the EPA publication 'Environmental Criteria for Road Traffic Noise' (May, 1999).
- (e) In regard to roads that cross natural drainage channels, the construction of bridges with piered approaches is preferred to culverts in order to maintain stream corridor function. Any works within, or alterations to, natural drainage systems will require the necessary approvals of the Office of Water/Office of Environment and Heritage.
- (f) Direct vehicular access to Arterial and Subarterial roads will not be permitted where alternate access is available. Access will not be restricted to any property from Arterial or Sub-Arterial roads until such time as alternate access is available.
- (g) Roads, in particular Access Ways are, wherever possible, to occur along and adjacent to public open space or drainage lands. Where Access Ways front open space or drainage land the costs associated with their construction is the responsibility of the developer.
- (h) Street networks are to conform to the requirements set out in Table 3: Characteristics of Street Types.
- (i) When travelling from any dwelling to the most convenient collector street or higher order road no more than three turns should be required.
- (j) The driving distance from any dwelling to the nearest collector or higher order street is a maximum of 700 metres.
- (k) Street and road junctions are to be spaced as set out in Table 2.
- (I) The street network is to be designed to limit target street speeds to those specified in Table 3. This may be done by limiting street leg length, and providing appropriate slow points at the end of each leg. Slow points may be provided by a variety of mechanisms including street junctions, introduction of bends and surface obstructions. Speed may also be restrained by

- a continuous series of bends, or by a combination of approaches.
- (m) The requirements for acoustic fencing along Arterial and Sub-arterial roads are to consist of the following:
 - the fence and associated footings to be sited entirely within private land.
 - where possible earth mounding along subarterial roads should be considered in association with the fencing to enhance the effectiveness of noise attenuation.
 - timber fences are to be constructed from hardwood or treated pine with low maintenance finishes.
 - coloured and painted finishes are to be avoided.
 - fencing and any associated acoustic measures are to be provided for the full length of the subdivision adjoining an arterial or sub-arterial road.
- (n) The construction standards for fencing are to include:
 - ➤ 1800mm high lapped and capped paling fence with three rails.
 - paling and capping to have a minimum overlap of 35mm.
 - paling to have a minimum thickness of 20mm.
 - metal strapping is to be provided on external side to prevent paling removal.
- (o) If noise consultant reports recommend a fence greater than 1800mm, then a solid panel material is required. Suitable construction materials may include lightweight aerated concrete, dense concrete panels or masonry walls.
- (p) The fencing requirement along sub-arterial roads is indicatively shown in Figure 9.

Table 2 Minimum junction spacing

Road Type	Typical Average Junction Spacing (metres)	Minimum Indicative Staggered Junction	Traffic Volumes (Vehicles per day)
Access Place	NA	NA	<300
Access Street	40	40	300 to 2000
Collector Street	40	40	2000 to 3000 (minor) 3000 to 6000 (major)
Sub-Arterial	150	200	5000 to 15000
Arterial	500	200	10,000 and over

Table 3 Characteristics of street types

Street	Maximum	Maximum	Design	Carriageway	Verge	Road	Footpath
Туре	Traffic	Number of	Speed	Width (m) (3)	Widths	Reserve	Required
	Volume(1)	Dwellings	km/hr(2)				
Access	100 veh/d	10	15	6.0 metres (4)	3.5	10.5 metres	No
Way					metres*(5)		
(Fronting							
open							
space)							
Access	300veh/d	30	30	7.5 metres	3.5	14.5 metres	No
Place					metres*		
Access	2000veh/d	200	40	8.5 metres	3.5	15.5 metres	Yes
Street					metres*		1.2 metres
							wide one
							side only
Collector	3000veh/d	1000	50 (20 at	9.5 metres	3.5	16.5 metres	Yes
	with access		ped/cycle		metres*		1.5 metres
	to lots		crossings)				wide both
							sides

NOTE:

- 1. For single dwelling allotments apply traffic generation rate of 10 veh/day per lot (equivalent to approximately 1 veh/day in the peak hour) unless a lower rate can be demonstrated.
- 2. See Council's Design Guidelines for Subdivisions and Developments for specific operating speeds.
- 3. Widening required at bends to allow for wider vehicle paths (using Austroads Turning Templates). Also refer advisory note at rear of this document.
- 4. Maximum length of carriageway is 80 metres.
- 5. Council will consider a reduction in the verge width along the open space side down to a minimum of 1m.
- * Verges may also require an additional widening requirement for the provision of a pedestrian/cycleway path, refer to section 2.9: Public Open Space of this Section of the DCP.

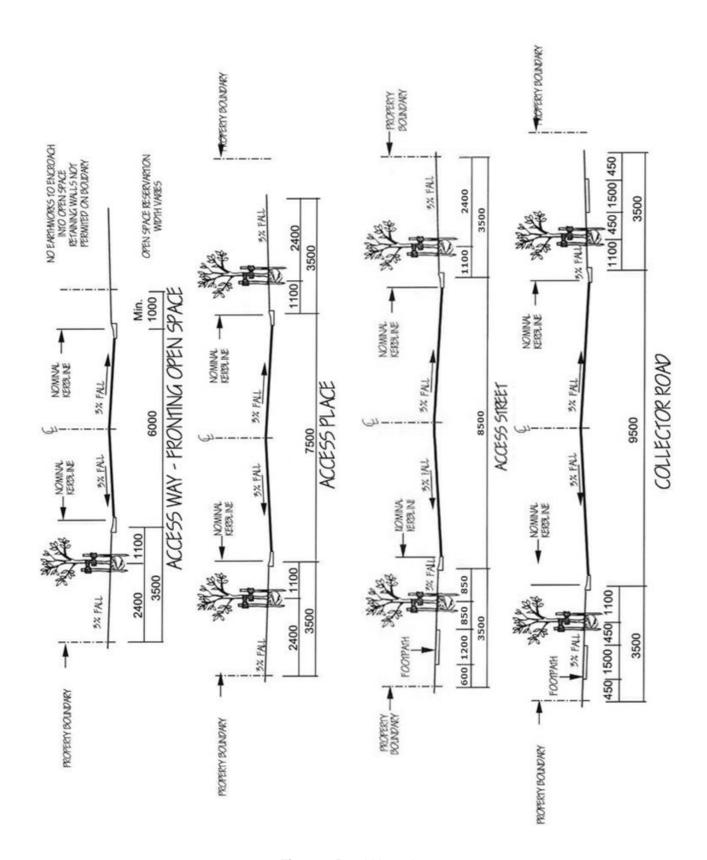


Figure 6 Road hierarchy

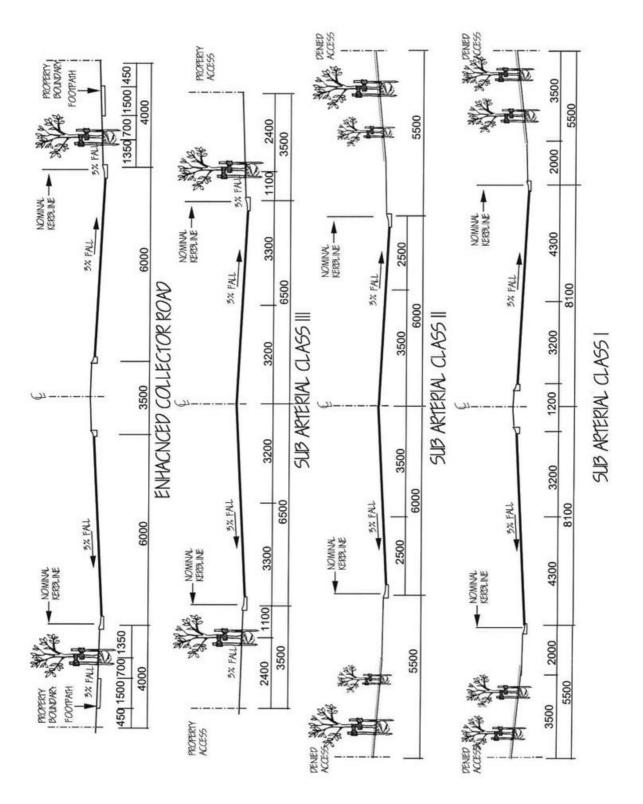


Figure 6 Road hierarchy (cont)

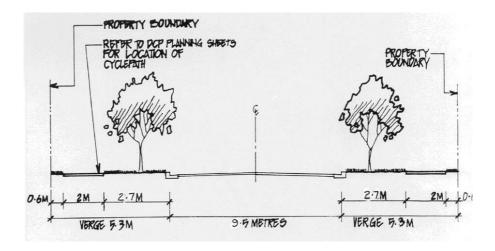


Figure 7 Road widening for major open space links

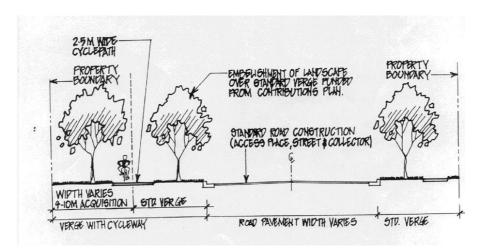


Figure 8 Collector road construction within existing road reserves

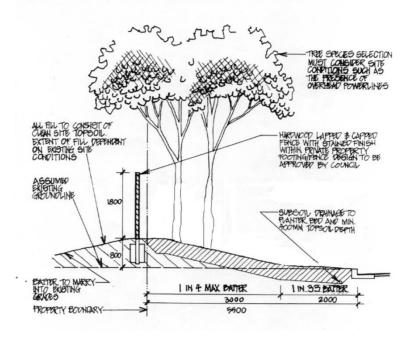


Figure 9 Indicative example of noise attenuation along sub-arterial roads

2.5. ROAD DESIGN AND CONSTRUCTION

OBJECTIVES

- (i) To ensure sufficient carriageway and verge widths are provided to allow streets to perform their designated functions within the street network and to accommodate public utilities and drainage systems.
- (ii) To encourage the use of residential streets by pedestrians and cyclists, and allow cars, buses and other users to proceed safely without unacceptable inconvenience or delay.
- (iii) To provide street geometry consistent with the needs of the street function, physical land characteristics and safety.

DEVELOPMENT CONTROLS

- (a) On collector streets, which function as two-way bus routes, a travelled way allowing unobstructed movements in both directions is required. Safety at bus stops, particularly the overtaking of stationary buses, is also an important design consideration. Speed control through design is a fundamental principle of this Section of the DCP. The alignment and geometry of all collector streets are to be designed for the efficient and unimpeded movement of buses.
- (b) On access streets and access places there will be only light traffic and the travelled way should allow for unobstructed movement in one lane as well as passing opportunities. As speeds are low and there are entrance drives where passing can take place, a narrow pavement is acceptable.
- (c) The design of the carriageway is to discourage motorists from travelling above the intended speed by reflecting the functions of the street in the network. In particular the width and horizontal and vertical alignment is not to be conducive to excessive speeds.
- (d) Roundabouts, street crossfalls, longitudinal gradient, vehicle turning movements and sight distances are to comply with Council's Design Guidelines Subdivisions/Developments.

- (e) Carriageway widths for each type of street are to be as specified in Table 3: Characteristics of Street Types.
- (f) Minimum verge widths for each street type are to be as specified in Table 3. Verge widths may need to be increased to allow space for provision of services, larger scale landscaping, indented parking, future carriageway widening, retaining walls or cycle paths.
- (g) Streets are to be designed to meet the target street speeds in Table 3 for each street type.
- (h) Where the termination of a street is visible from the entry street, T-heads should be used.
- (i) No retaining walls are to be constructed along the edge of roads fronting open space and drainage areas.
- (j) Street trees are to be provided in all residential subdivisions in the alignments shown in Figure 11
- (k) All collector roads which are to be constructed within existing previously rural road reserves are to be aligned as shown in Figure 7.
- (I) Street tree planting is to be provided to all streets with a spacing of between 7 and 10 metres, with a minimum of one tree per lot frontage. Corner lots will have a minimum of two street trees and normally three trees. The location of street trees must complement proposed driveway locations.
- (m) Street tree planting will only be permitted within publicly dedicated roads following approval of a tree planting plan prepared by a Landscape Architect. The early provision of street tree planting as part of subdivision works will only be agreed to where the planting includes tree guards that will protect the trees during building construction. Refer to Figure 4 of Part C Section 3 – Landscaping of The Hills DCP 2012 for details of minimum construction standards.
- (n) All plans documenting proposed street tree planting must indicate the location of Sydney Water sewer pipes including where they enter a public road reservation.
- (o) Street tree species must be drawn from the landscape character zone maps and tree planting matrix in Appendix 1 of this Section of the DCP. Refer to Part C Section 3 – Landscaping of this DCP for guidance on street tree planting on Access Way, Access Place and Access Street.

(p) For all sub-arterial roads landscape works in roundabout islands may include low maintenance groundcover planting and native grasses with a mature height of up to 0.5 metres as well as clear stemmed tree planting. A metered water supply point and subsurface drainage is required in all small island planter beds at the developer's expense. Refer to Figure 10 for details of landscape standards.

2.6. STORMWATER MANAGEMENT

OBJECTIVES

- To prevent stormwater and flood damage to properties arising from the subdivision of land.
- (ii) To ensure the statutory requirements of the Office of Environment and Heritage is considered at the early stages of land development.
- (iii) To contain nuisance flows to a level which is acceptable to the community, and ensure the street system operates adequately during and after major storm events.

DEVELOPMENT CONTROLS

- (a) Prior to any pre-lodgement meeting held with Council consultation with Office of Environment and Heritage should occur where development is proposed adjoining a stream, river or similar.
- (b) A riparian zone may be required by Office of Environment and Heritage is to be retained and enhanced along all streams, as a means of conserving stream health, fauna habitat and biological diversity, bank stability, and water quality.
- (c) The minor drainage systems minimum design standard is to capture and convey flows produced by a 10 year Average Recurrence Interval design storm.
- (d) Trapped sag points are not to be created.
- (e) Drainage reserves or Local Drainage Links are required to discharge gaps flows (the difference between the 100 year ARI storm event and half design pipe flow, allowing for blockage, maximum pipe design 100 year ARI) from all ARI runoffs to the generally accepted maximum of the 100 year ARI storm event.

- (f) Local Drainage Links adjacent to residential properties are to be designed in accordance with Kellyville/Rouse Hill Open Space and Recreation Plan. They are to be designed to utilise both their drainage capabilities, landscaping and pedestrian opportunities.
- (g) Local Drainage Links are to be a minimum of 5 metres in width. The Developer is required to supply the land, all associated drainage works including energy dissipation, erosion control planting, pathways and tree planting.
- (h) Drainage facilities are to be of a standard acceptable to Council.
- (i) All drainage pits shall have access from the ground surface. Buried junction pits shall not be permitted.
- (j) All pipes to be dedicated to Council are to be located within public land.
- (k) The drainage system is to be designed by a qualified person in accordance with the requirements of the responsible drainage authority.
- (I) All owners of properties adjoining SP2 Trunk Drainage land are required to contact Council and Sydney Water to confirm the inundation line prior to the lodgement of subdivision applications.
- (m) All drainage designs, excluding minor drainage systems, are to comply with Council's Design Guidelines Subdivisions/Developments. Design criteria are to be confirmed by Council.
- (n) Any discharge to, or construction within Sydney Water trunk drainage land will require the approval of Sydney Water.

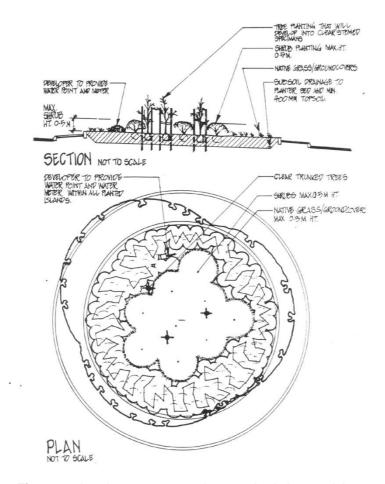


Figure 10 Landscape construction standards in roundabout

2.7. WATER QUALITY

OBJECTIVES

- (i) To protect downstream waters during construction activities within the release area.
- (ii) To assist in the protection and enhancement of stream health.

DEVELOPMENT CONTROLS

- (a) Applications for residential development including subdivision are to be accompanied by an Erosion and Sediment Control Plan which will describe the measures to be taken at development sites to minimise land disturbance, erosion, and control sediment pollution of waterways.
- (b) Erosion and Sediment Control Plan's shall be prepared in accordance with 'Managing Urban Stormwater – Soils and Construction' produced by the NSW Department of Housing.
- (c) Any discharge to, or construction within Sydney Water drainage land will require the approval of Sydney Water.
- (d) Natural vegetation shall be maintained wherever possible.
- (e) Natural drainage channels are to be retained wherever possible.
- (f) Soil and Water Management Plans are to be submitted with all residential subdivisions and are to be designed in accordance with The Hills Shire Council's 'Works Specification, Subdivisions/Development' and the Department of Housing manual, 'Managing Urban Stormwater: Soils and Construction'.

2.8. UTILITIES PROVISION AND LOCATION

This Section of the DCP seeks to promote shared trench practices.

Advantages of shared trenches include:

- elimination of a number of single trenches each with its own construction, settlement and reinstatement problems.
- accurate location of services for possible repair or maintenance.

- less conflict between services as depth relativities are known.
- > more efficient use of construction equipment.
- reduced verge and footpath disturbance enables earlier site development.

OBJECTIVES

- (i) To maximise the opportunities for shared (common) trenching and reduce constraints on landscaping within road reserves.
- (ii) To ensure the provision of public utilities is undertaken in accordance with the requirements of both Council and the relevant servicing authority.

DEVELOPMENT CONTROLS

- (a) Gas and water services may be located in a shared trench on one side of the street and electricity power and telephone located in a shared trench on the other side of the street. The Kellyville/Rouse Hill release area is also to be serviced with a recycled water supply which will require an increase in Sydney Water Corporation's service allocation.
- (b) The Council requires underground electricity reticulation for all urban residential development.
- (c) Where agreement to develop shared trench practices cannot be met the alignment of services shall be to a standard acceptable to Council.
- (d) Council requires the provision of street tree planting within all verge areas and service authorities are expected to cooperate to ensure this is achieved.
- (e) Provision of all utilities and services is to be supplied and constructed in accordance with the requirements of the relevant authority.
- (f) Details of the location of all sewer reticulation mains are to be supplied to Council for assessment of environmental and property considerations.
- (g) Development is to have water supply for fire fighting purposes in accordance with Specification E1.2 of the Building Code of Australia.
- (h) Concurrence from the relevant Electricity Authority is required for all subdivision

- applications where the property is affected by electricity easements.
- (i) Road verge widths are to be in accordance with Table 3.
- (j) Service allocations for local to sub-arterial roads are to be in accordance with Figure 11, subject to consultation with, and the requirements of, individual service providers.

2.9. PUBLIC RECREATION SPACE

Land set aside for open space use has been selected on the basis of its suitability for play facilities and the proposed recreation facilities set out in Council's Kellyville/Rouse Hill Open Space and Recreation Plan.

- District Parks and Sports Complexes perform a broad environmental and recreational function. Their distribution is site related and includes areas of conservation and environmental significance, while catering to needs of the district and local residents.
- Local Open Space Parks primarily provide for playspace with opportunities for supervised play within a maximum radius of 400 metres from any given residence.
- The Greenway is the primary off road open space connection that traverses the release area between Rouse Hill House and Bella Vista Homestead. The route of the Greenway has been determined to maximise the historic and scenic qualities of the release area, and to link major activity nodes such as active open space areas, schools, commercial centres, and community facilities.
- Major Open Space Links provide important off road connections through neighbourhoods and a range of landscape settings. They also connect open space areas, schools, commercial and community facilities.
- Local Open Space Links are planned within subdivisions to ensure direct access to local parks, schools, commercial centres and complement the pedestrian network provided along collector roads and access streets.
- Drainage Links are similar to Major Open Space Links except they occur along major drainage corridors.

OBJECTIVES

- (i) To ensure the adequate protection of land identified for public open space purposes on the maps accompanying this Section of the DCP occurs during the subdivision and dwelling construction stage.
- (ii) To ensure the provision of open space occurs in accordance with the objectives and requirements set out in the Kellyville/Rouse Hill Landscape And Urban Design Strategy and Open Space and Recreation Plan (1998).

DEVELOPMENT CONTROLS

- (a) Proposed plans of subdivision are required to set aside the area of land for public open space identified in the relevant map accompanying this Section of the DCP.
- (b) Footpath links are to be provided in accordance with the maps accompanying this Section of the DCP.
- (c) Where the maps accompanying this Section of the DCP identify road widening for provision of Greenway Link/Major Open Space Link, the road verge is to be widened in accordance with details provided in Figure 8. The additional area of verge is to be funded through the Kellyville/Rouse Hill Section 94 Contributions Plan No. 8A.
- (d) The maximum gradient of cyclepaths is not to be greater than the adjacent road pavement and is required to provide adequate sight distances at crossings.
- (e) A designated Cyclepath/Footpath route is to have the following pavement widths:

Greenway link: 3.0 metres

Major Open Space Link: 2.5 metresDrainage Link: 2.5 metres

> Roads with 3.5 metre verge: 2.0 metres

- Existing previously rural road reserves: 2.0 metre wide path on both sides of road (Where identified as collector roads, refer to Figure 7).
- (f) Refer to the Kellyville/Rouse Hill Open Space and Recreation Plan for details of the location of the Greenway, Major Open Space and Drainage Links.
- (g) A shared pedestrian/cyclepath with a minimum width of 2 metres is to be provided adjacent to

- all collector streets giving major access to a primary or high school, as indicated on maps 1, 2, 3 and 4 accompanying this Section of the DCP.
- (h) Pipes through bushland areas and areas with significant vegetation coverage are to be laid by hand with the aid of small machinery causing minimal disturbance to vegetation and exposed rock outcrops.
- (i) Local Drainage Links within subdivisions are to be a minimum of 5 metres width. The Developer is required to supply the land, 2 metre wide concrete path and planting in accordance with details indicated in Figure 11. Details are to be submitted with the engineering designs.
- (j) Where Local Links are required for open space purposes they are to be a minimum 5 metres width. Council will acquire and provide landscape works where identified in the Section 94 Contributions Plan.
- (k) No retaining walls are to be constructed adjacent to existing or proposed Open Space Parks, Open Space Links or SP2 infrastructure (Trunk Drainage) Land.
- (I) No filling is permitted within proposed Open Space Parks, Open Space Links or Trunk Drainage Land.
- (m) The provision of a 1.5 metre high chain wire fence around proposed open space parks with access provided by a lockable gate, at the developers expense is required.
- (n) Details of fence construction are to be provided by the proponent with the engineering designs.
- (o) The fence must be sited in such a way as to limit access into the open space area, ensuring protection of the area for the duration of subdivision and building construction.

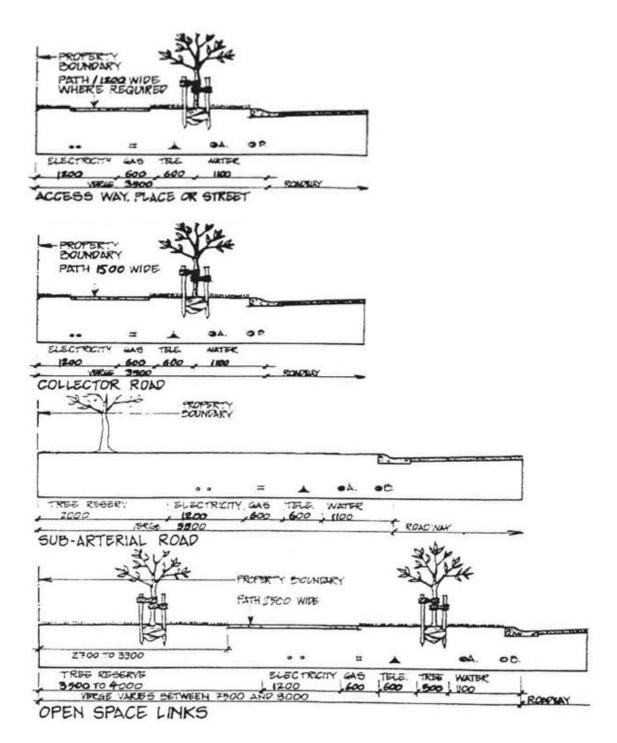
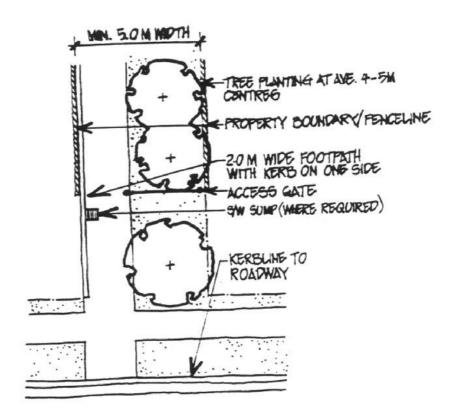


Figure 11 Service allocation



PLAN VIEW

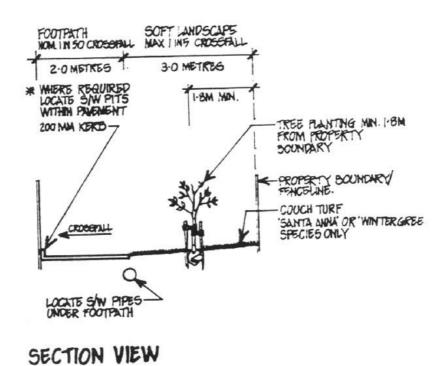


Figure 12 Local drainage links

3. DWELLING DESIGN

The following development control provisions primarily relate to the development of land for detached dwellings.

3.1. SITING OF BUILDINGS

OBJECTIVES

- To ensure that dwellings are designed with regard to site conditions and minimise the impact on landform.
- (ii) To ensure that dwelling design and siting have regard to the amenity of adjoining development and surrounding properties.

DEVELOPMENT CONTROLS

- (a) Practical and stable access shall be provided from a public road to the building platform.
- (b) The building platform shall be sited in an accessible and practical location and on relatively flat terrain with stable soil and geology.
- (c) Dwellings should be sited so that their height does not detract from the use, appearance, and enjoyment of adjoining spaces and dwellings, including the protection of solar access, or privacy of adjoining neighbours.
- (d) The design and siting of dwellings should ensure that all habitable rooms and recreational open space receive adequate natural light.

3.2. TURKEY NEST PARK – HEIGHT RESTRICTIONS

OBJECTIVES

- (i) To maintain views to and from Turkey Nest Park and adjoining Greenway Link.
- (ii) To maintain the visual prominence of Turkey Nest Park, the adjoining ridgeline to the north, and associated plantings within the urban landscape.

DEVELOPMENT CONTROLS

(a) All dwellings, within the area identified on the map (Sheet No.2 and Appendix 2)

- accompanying this Section of the DCP as **Building Height Restriction A** shall be single storey in height and are not to exceed 1.5 metres above the level of the pedestrian path along the Greenway Link (including the roof and any other structure associated with the dwelling). This height restriction is to be measured perpendicular to the pathway direction. Cross sections are to be provided with all development applications.
- (b) All dwellings, within the area identified on the map (Sheet No.2 and Appendix 2) accompanying this Section of the DCP as Building Height Restriction B shall be single storey in height. Cross sections are to be provided with all development applications.
- (c) All dwellings, within the area identified on the map (Sheet No.2 and Appendix 2) accompanying this Section of the DCP as **Building Height Restriction C** are not to exceed 1.5 metres above the level of the pedestrian path along the Greenway Link. (including the roof and any other structure associated with the dwelling). This height restriction is to be measured perpendicular to pathway. Cross sections are to be provided with all development applications.
- (d) All dwellings, within the area identified on the map (Sheet No.2 and Appendix 2) accompanying this Section of the DCP as Building Height Restriction D are not to exceed two storeys in height. Cross sections are to be provided with all development applications.
- (e) Any variation to the above standards will only be considered by Council where :-
 - Compliance with the building height restriction is not possible; and
 - ➤ The design and siting of the dwelling incorporates the following:-
 - site excavation to reduce building height,
 - roof design to reduce the overall building height,
 - · split level dwelling design, and
 - the maintenance of view lines to and from the ridgeline.
- (f) For Building Height Restriction areas A and B where single storey dwellings are required, consideration will be given to two storey

development where the overall height does not exceed the specified height restriction.

Note. The building height restriction areas and levels along the pathway within the Greenway Link are shown in Appendix 2 of this Section.

3.3. SETBACKS

OBJECTIVES

- (i) To provide visual separation of built forms, privacy and opportunities for landscaping.
- (ii) To protect sunlight and daylight to habitable rooms, protect and optimise useable open space around dwellings, and protect adjoining dwellings from excessive overlooking, overshadowing, and general loss of amenity.
- (iii) To provide sufficient space for vehicle parking, manoeuvrability and clear sight lines.
- (iv) To provide a useable area of private open space to the rear of a dwelling.

DEVELOPMENT CONTROLS

(a) The minimum building setbacks are shown in the following table.

Table 4 Building setbacks

Location/Frontage	Setback
Primary Street	4.5 metres
Secondary Street	2.0 metres
(corner allotments)	
Garages	5.5 metres
Side Boundaries	0.9 metres
Rear boundary setback	
1 storey	4.0 metres (1)
2 storey	6.0 metres (2)
Arterial/Sub-Arterial Roads	
1 storey	6 metres
2 storey	8 metres

In the case of rear boundary setbacks to single storey dwellings, that part of any single storey dwelling encroaching into the 4 metre rear building setback shall not be any wider than 50% of the rear boundary dimension (when measured in metres) to a maximum width of 7.5 metres. The minimum setback from the rear boundary to the external face of any wall comprising part of the dwelling shall not be less than 2 metres.

- Consideration to a larger proportion of the building width being permitted to occur at a minimum setback of 2 metres may be given, provided:-
 - a courtyard is provided to the side boundary with a minimum area of 24m²;
 - the courtyard has a minimum dimension of 4 metres;
 - it can be demonstrated that at least half (50%) of the courtyard will receive a minimum of 2 hours of direct sunlight between 9am and 3pm during mid winter; and
 - the site coverage control (Refer Section 3.5 of this Section of the DCP) is not exceeded.
- In the case of rear boundary setbacks to two storey dwellings, that part of the dwelling encroaching into the 6 metre rear building setback shall not be any wider than 50% of the rear boundary dimension (when measured in metres) to a maximum width of 7.5 metres, provided that part of the dwelling to be setback less than 6 metres from the rear boundary is single storey only. The minimum setback from the rear boundary to the external face of any wall comprising part of the dwelling shall not be less than 4 metres.
- (b) For all dwelling houses the primary street façade must be suitably articulated and incorporate two of the following design elements:-
 - Non-enclosed verandah for at least 40% of the dwelling width;
 - > Entry feature or portico;
 - Awnings or similar treatment used over windows;
 - Balcony or window box treatment to first floor element;
 - Recesses or projection of prominent architectural elements to visually break up the façade and avoid blank wall appearance;
 - Use of bay window or similar along façade; and
 - Verandah, pergola or similar provided over garage doors.
- (c) For corner allotments garages shall not form part of the secondary street setback.
- (d) In addition to the setback requirement all dwellings fronting or backing onto arterial roads are to be constructed with appropriate materials

to attenuate noise and designed to acceptable internal noise levels, based on EPA – Environmental Criteria for Road Traffic Noise and Australian Standard 3671 – Road Traffic Noise Intrusion – Building Siting and Construction.

3.4. SITE COVERAGE AND PRIVATE OPEN SPACE

OBJECTIVES

- (i) To maximise the provision of open space.
- (ii) To avoid the creation of drainage and runoff problems, through minimising the amount of impervious area.
- (iii) To minimise bulk and scale of residential development.
- (iv) To facilitate spatial separation between buildings.
- (v) To provide adequate space within residential lots for the establishment of landscaping/tree planting to enhance the quality of the residential environment.
- (vi) To provide outdoor living space which is an extension of the dwelling for the enjoyment of its inhabitants.

DEVELOPMENT CONTROLS

(a) The maximum site coverage (including garage/carport, driveways, outbuildings, decks, patios, paved areas, tennis courts and pools) for residential development on residential zoned land, as a percentage of the total site area shall not exceed 60% where two storey dwellings are proposed, and 65% where single storey dwellings are proposed. Except for land zoned E4 Environmental Living where the maximum site coverage shall not exceed 30%.

Private Open Space

(b) The principal private open space area (behind the front building line) must be able to contain a rectangle measuring 4 metres x 6 metres.

3.5. CORNER LOTS

OBJECTIVES

- (i) To ensure that dwellings sited on corner allotments take advantage of their visually prominent location whereby the design addresses both street frontages.
- (ii) To ensure that the dwelling façade along the secondary street frontage provides architectural relief to the streetscape.

DEVELOPMENT CONTROLS

- (a) On corner allotments a minimum of two of the following design elements are to be included along the secondary frontage:-
 - Verandahs:
 - Gables:
 - Vertical elements to reduce the horizontal emphasis of the façade;
 - Entry feature or portico;
 - Balcony/window boxes or similar elements; and
 - Landscaping/fencing compatible with the frontage status of elevation.
- (b) The following features are not to occur along either façade:-
 - Blank walls without relief;
 - Windows/doors of utility rooms exposed to view; and
 - Hot water services or similar utility installations.
- (c) Any high fencing along the secondary street frontage exceeding 1.2 metres in height should be limited to 60% of the frontage and occur toward the rear of the allotment. Any low fencing equal to or less than 1.2 metres in height may occur toward the front of the allotment.

Reference is made to Appendix 4 of this Section, which provides an example of the dwelling design controls for corner allotments.

3.6. GARAGE DESIGN

OBJECTIVES

(i) To reduce the visual dominance of garages.

(ii) To improve the visual quality of the overall built form and streetscape.

DEVELOPMENT CONTROLS

- (a) Carports and garages shall be designed to be:
 - visually subservient;
 - integrated into the overall dwelling design; and
 - constructed of similar materials and finishes to the dwelling.
- (b) Where a double garage is proposed a minimum of two of the following design measures are to be employed:-
 - Garage doors are divided by a vertical masonry pillar or similar;
 - Upper floor element projected forward of the garage to cast shadow and take prominence;
 - Colours and textures to ensure garage doors do not dominate the street elevation;
 - Verandah or pergola provided across the face of the garage;
 - Utilisation of vertical elements to mitigate the horizontal emphasis of the garage;
 - Garage entrance to be orientated away from primary street frontage to face the side boundary; and
 - Staggered garages whereby one garage is setback from the adjoining garage.

Reference is made to Appendix 5 of this Section which provides examples of the garage design controls.

4. HOUSING AS PER CLAUSE 4.1 B OF THE HILLS LOCAL ENVIRONMENTAL PLAN 2012

4.1. MASTERPLAN REQUIREMENT AND APPLICATION OF DEVELOPMENT CONTROLS

OBJECTIVES

- (i) To provide greater flexibility in the design of larger housing developments.
- (ii) To demonstrate that all of the relevant design objectives of this Section of the DCP can be satisfied.

DEVELOPMENT CONTROLS

- (a) Where a development application for development in accordance with Clause 4.1 B of The Hills LEP 2012, Council may set aside a number of the provisions of this Section of the DCP where:
 - The proposal has been the subject of prelodgement discussions with Council's planning services staff;
 - A Masterplan is prepared and submitted with the development application; and
 - The Masterplan is able to satisfactorily demonstrate the achievement of the objectives for each development control.
- (b) The above provision does not apply to the following development controls:-
 - Density;
 - ➤ ESD:
 - Site Boundary Setbacks;
 - Site Coverage;
 - Vehicular Access:
 - Open Space; and
 - Energy Efficiency.

SUBMISSION REQUIREMENT

• Where required applicants are required to submit a detailed coloured Masterplan of the proposed development at 1:200 scale showing contours, adjoining development, major site constraints, internal roadways, areas of common open space, dwelling locations, landscaping, private open space areas, and using annotation justification of any variation sought to the development controls of this Section of the DCP.

4.2. SITING OF BUILDINGS

OBJECTIVES

- (i) To ensure that dwellings are designed with regard to site conditions and minimise the impact on landform.
- (ii) To ensure that dwelling design and siting have regard to the amenity of adjoining development and surrounding properties.

DEVELOPMENT CONTROLS

- (a) Practical and stable access shall be provided from an internal roadway to the building platform.
- (b) Dwellings shall be sited in an accessible and practical location and on relatively flat terrain with stable soil and geology.
- (c) Dwellings should be sited so that their height does not detract from the use, appearance, and enjoyment of adjoining spaces and dwellings, including the protection of solar access, or privacy of adjoining neighbours.
- (d) The design and siting of dwellings should ensure that all habitable rooms and the principle private open space area receive adequate natural light.

SUBMISSION REQUIREMENT

 Plans must show contours, building platforms and their relationship to the internal road system and adjoining dwellings.

4.3. SETBACKS

OBJECTIVES

- (i) To create an attractive, interesting and pleasant streetscape through the siting of buildings.
- (ii) To provide visual separation of built forms, privacy and opportunities for landscaping.
- (iii) To protect sunlight and daylight to habitable rooms, protect and optimise useable open space around dwellings, and protect adjoining dwellings from excessive overlooking, overshadowing, and general loss of amenity.
- (iv) To provide sufficient space for vehicle parking, manoeuvrability and clear sight lines.

DEVELOPMENT CONTROLS

(a) Where dwellings abut public land, public roads or private property not part of the development application, the minimum setbacks in Table 5 shall apply.

Table 5 Building setbacks to site boundaries

Frontage	Setback
Primary Street	4.5 metres

Secondary Street	2 metres
Side Boundary to adjoining property	2 metres
Rear boundary setback	
Arterial or Sub-Arterial	
1 storey	6 metres
2 storey	8 metres
All other streets	3 metres

- (b) All garages are to be set back a minimum of 5.5 metres from the primary street frontage or internal roadways.
- (c) For all dwellings the façade must be suitably articulated and incorporate two of the following design elements:-
 - Non-enclosed verandah for at least 40% of the dwelling width;
 - Entry feature or portico;
 - Awnings or similar treatment used over windows;
 - Balcony or window box treatment to first floor element;
 - Recesses or projection of prominent architectural elements to visually break up the façade and avoid blank wall appearance;
 - Use of bay window or similar along façade;
 - Verandah, pergola or similar provided over garage doors.
- (d) All side setbacks are to be proportioned to the slope of the site having regard to the height and relationship of the building on adjoining properties and will be required to demonstrate:
 - building setbacks that progressively increase as wall heights increase to reduce bulk and overshadowing; and
 - setbacks which provide adequate separation between buildings for visual amenity, solar access, movement and landscaping.
- (e) With respect to building setbacks from private internal driveways and/ or access roads the development on the subject land will be required to demonstrate:
 - building setbacks that progressively increase as wall heights increase to reduce bulk and overshadowing; and
 - that an adequate area is provided between the dwelling and the driveway or private access road to enable adequate areas for

- landscaping ensuring an attractive, vibrant and consistent streetscape.
- (f) Buildings facing each other across internal driveways or private access roads shall not be erected less than:-
 - 6 metres apart in the case of single storey development; and
 - 9 metres apart in the case where 1 or more of the buildings is 2 storey.

SUBMISSION REQUIREMENT

 Site plans must clearly indicate setbacks from adjoining public land, public roads or private property not part of the development application, in addition to all front, rear and side setbacks within the development.

4.4. ZERO LOT LINE HOUSING

Note. Council may consider a setback of zero metres along one side boundary (known as zero lot line housing) subject to the compliance with the objectives and development controls outlined below. The purpose of these controls is to ensure an appropriate relationship is established between individual dwellings within the development. They do not apply to the overall site boundaries.

OBJECTIVE

(i) To facilitate the more efficient use of land, concentrate open space in a useable focus, optimise areas of sun and shade, and enhance privacy by avoiding overlooking and noise intrusion.

DEVELOPMENT CONTROLS

- (a) Zero lot line housing shall occur only on the southern side boundary of east-west allotments and either side boundary (but not both sides) of north-south allotments.
- (b) Access to the external face of a zero lot line wall may be protected by easements on the Certificate of Title to adjoining allotments. If such an easement is to be provided, it should be noted at the outset and be included on plans of subdivision submitted to Council.

- (c) No dwelling built on the zero lot line is to abut an adjoining dwelling also built on the zero lot line.
- (d) No windows are to occur along the boundary wall which is to be constructed of maintenance free materials such as face brick or masonry materials, with gutters, eaves and facias constructed of colorbond steel or similar with no visible downpipes.
- (e) The length of zero lot line walls for single storey dwellings shall be a maximum of 10 metres.
- (f) Walls may be constructed on the boundary where:-
 - Eaves, fascias and gutters do not overhang on adjoining property; or
 - Box gutters are utilised and inset within the wall: and
 - A restriction as to user is created for a one metre wide maintenance easement over the adjoining property pursuant to Section 88B of the Conveyancing Act.

4.5. VEHICULAR ACCESS

OBJECTIVES

- To provide an acceptable level of vehicular access, safety and convenience for all users of the development.
- (ii) To ensure that the internal roadway design can satisfactorily accommodate the expected traffic volumes of the development.
- (iii) To provide a safe environment for both pedestrians and vehicles using the site and surrounding road network.
- (iv) To provide a direct and legible means of vehicular access and circulation within the development.

DEVELOPMENT CONTROLS

- (a) Internal roadways are to have a minimum width of 6m at the property boundary for a distance of 6m within the development to ensure the safe movement of vehicles into and out of the site from the public road system.
- (b) All internal roadways are to be of a sufficient width to adequately accommodate the volume of traffic generated by the development.

- (c) Table 3 'Characteristics of Street Types' of this Section of the DCP is to be used as a guide in determining the required width and design of an internal roadway.
- (d) The internal roadway design should make provision for service vehicles where possible.
- (e) Internal roadways should be separated from any adjoining property boundaries by a landscaped verge at least 2 metres in width.

SUBMISSION REQUIREMENT

 Applicants are required to submit plans and details with the development application of proposed vehicular access arrangements, circulation patterns, internal carriageway widths, and demonstrate that the carriageway width and design will satisfactorily accommodate the expected traffic volumes.

4.6. HEIGHT

OBJECTIVES

- To minimise the impact of overshadowing, loss of privacy on adjoining properties and open space areas.
- (ii) To ensure the height of small lot housing forms are compatible with adjoining residential development and the overall streetscape.

DEVELOPMENT CONTROLS

- (a) Refer to Clause 4.3 *Height of buildings* in The Hills LEP 2012.
- (b) For corner allotments consideration will be given to a three storey element at the street corner of the dwelling which addresses its prominent location within the streetscape.

SUBMISSION REQUIREMENT

 The height all dwellings measured from natural ground level to the eaves and to the roof ridgeline is to be shown on all plans and elevations.

4.7. STREETSCAPE

OBJECTIVE

 To ensure small lot housing forms are of a high visual quality, enhance the streetscape and are compatible with the existing streetscape.

DEVELOPMENT CONTROLS

- (a) The proposed development must contribute to an attractive residential environment with clear character and identity.
- (b) Small lot housing forms are to address the public road frontage, internal roadways, and side boundaries with a building form compatible with adjoining development in terms of street elevation, bulk and scale, quality materials and finishes.

SUBMISSION REQUIREMENTS

- All development applications for small lot housing are to be accompanied by a streetscape plan and typical elevation showing the visible components within a street. As a minimum it is to include:
 - the street reserve together with typical cross sections;
 - location and detailing of pavement, parking bays footpaths and the like;
 - location of landscaping including fencing, lighting and street tree plantings;
 - typical dwelling front alignments, heights and façade designs; and
 - a schedule of external materials, finishes, colours.

4.8. OPEN SPACE

OBJECTIVES

- To provide outdoor living space which is an extension of the dwelling for the enjoyment of its inhabitants.
- (ii) To provide outdoor living space which is of useable dimensions and which is located to receive a reasonable quantity of sunlight.
- (iii) To enhance the quality of the built environment by providing high quality landscaping.

- (iv) To promote a pleasant and safe living environment.
- (v) To provide functional open space within the development for the informal recreation of residents and children's play.

DEVELOPMENT CONTROLS

- (a) All private open space areas are to be:
 - contiguous to, and accessible from, the primary living areas of the dwelling;
 - located and oriented to ensure it is not directly overlooked from adjoining lots or buildings; and
 - located on relatively flat land to ensure it is useable as open space.
- (b) All common open space areas are to be:
 - centrally located and easily accessible to all residents within the development;
 - provided with direct frontage to an internal roadway for at least 70% of the total open space boundary;
 - of a configuration, slope, and design so as to ensure it is easily maintained;
 - located to ensure the area receives adequate sunlight during mid-winter;
 - of a sufficient size to satisfy the immediate open space demands of the proposed population and accommodate informal active recreational activities; and
 - provided with passive surveillance whereby surrounding dwellings are orientated toward the common open space.
- (c) A minimum area of private open space per allotment is to be provided being 20% of the allotment area of the individual dwelling. All side boundary passages less than 2 metres in width are to be excluded from the calculation of private open space.
- (d) The principle private open space area must be able to contain a minimum area of 24m² and have a minimum dimension of 4 metres.
- (e) At least half (50%) of the principle private open space area is to receive a minimum of 2 hours direct sunlight between 9am and 3pm during mid-winter.
- (f) Where a small lot housing development consists of more than five dwellings a common open space area comprising a child play area

- or recreation activities area is to be provided within the overall site
- (g) The common open space area must have a minimum dimension of 12 metres x 12 metres.
- (h) For developments consisting of 15 or more dwellings the common open space area is to comprise an area equivalent to ten square metres per dwelling.
- (i) Access for all residents to the common open space area is to be guaranteed via the titling system.
- (j) The majority of the common open space area is to receive direct sunlight between 9am and 3pm during mid-winter.

SUBMISSION REQUIREMENT

 Plans are to indicate those areas (including dimensions) of any part of the site to be used for private open space or common open space purposes, and demonstrate compliance with the subject development controls.

4.9. CAR PARKING

OBJECTIVES

- To ensure dwellings have adequate areas of ingress and egress from the local road system and satisfactory on-site access.
- (ii) To provide sufficient and convenient parking for residents of and visitors to the site.
- (iii) To ensure that adequate car parking is provided on-site so as to prevent inconvenience to residents and congestion in nearby streets.

DEVELOPMENT CONTROLS

- (a) A minimum of two car parking spaces are to be provided per dwelling of which one space must be within a garage. Should a carport be proposed for the second space, the design of the carport shall be of similar materials as the dwelling, and be located behind the building setback.
- (b) Carports and garages facing a public place are to be no more than 6 metres in width nor extend across more than 50% of the property frontage, whichever is the lesser.

- (c) Carports and garages are to be designed to be:
 - visually subservient;
 - integrated into the overall dwelling design; and
 - constructed of similar materials and finishes to the dwelling.
- (d) Where a double garage is proposed a minimum of two of the following design measures are to be employed:-
 - Garage doors are divided by a vertical masonry pillar or similar;
 - Upper floor element projected forward of the garage to cast shadow and take prominence;
 - Colours and textures to ensure garage door subservience;
 - Verandah or pergola provided across the face of the garage;
 - Utilisation of vertical elements to mitigate the horizontal emphasis of the garage;
 - Garage entrance to be orientated away from primary street frontage to face the side boundary; and
 - Staggered garages whereby one garage is setback from the adjoining garage.

Refer to Appendix 5, which provides examples of the garage design controls.

4.10. SITE COVERAGE

OBJECTIVES

- (i) To maximise the provision of open space.
- (ii) To avoid the creation of drainage and runoff problems, through minimising the amount of impervious area.
- (iii) To minimise bulk and scale of residential development.
- (iv) To facilitate spatial separation between building.
- (v) To provide adequate space within allotments for the establishment of landscaping/tree planting to enhance the quality of the residential environment.
- (vi) To provide an outdoor landscaped open space area for the enjoyment of inhabitants.

DEVELOPMENT CONTROL

(a) The maximum site coverage (including dwellings, roads, garage/carport, driveways, outbuildings, decks, patios, paved areas, tennis courts and pools) for the total development site area shall not exceed 60%.

4.11. LANDSCAPING

OBJECTIVES

- (i) To enhance the quality of the built environment by providing a high standard of landscaping.
- (ii) To ensure that landscaping may be efficiently maintained.
- (iii) To promote a pleasant and safe living environment.
- (iv) To limit tree removal to maintain the character of the area.
- (v) To satisfy Council's ESD objectives No. 3, 4 & 7.

DEVELOPMENT CONTROLS

- (a) The minimum required landscaped or naturally vegetated area for small lot housing as a percentage of the total site area is 40%.
- (b) Landscaping is to be provided in accordance with the provisions set out in Part C Section 3 of this DCP.
- (c) Tree planting within the development is to be consistent with the tree species selection and planting guidelines provided in Appendix 1.
- (d) Existing trees should be preserved.
- (e) Native species are to be used to maintain a strong natural theme for the neighbourhood due to their low maintenance characteristics, relative fast growth, aesthetic appeal and compatibility with the natural habitat.
- (f) All landscaped areas are to have a minimum width of 2 metres.

SUBMISSION REQUIREMENTS

Landscaping plans are to be submitted with the development application and should include the following:

North point;

- Scale;
- Main structures on the site (buildings, visitor car parking, driveways, walls, fences, paving, storage areas, etc.);
- · Proposed planting and turfed areas;
- Drainage areas;
- · All fencing details; and
- Name and contact telephone number of the person who prepared the plans.

All existing trees on site are to be shown on the development application plans with an indication of those trees that are proposed to be retained, and those that are to be removed.

4.12. CORNER LOTS

Refer to section 3.6 of this section of the DCP.

4.13. SOLAR ACCESS

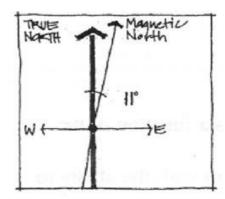
OBJECTIVES

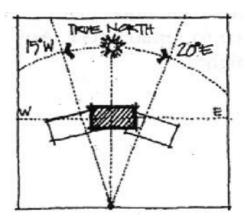
- (i) To maximise solar access to internal living and open space areas in winter.
- (ii) To ensure no adverse overshadowing of adjoining allotments/developments.
- (iii) To orient the development in a way that best allows for appropriate solar access and shading, to ensure energy efficient outcomes in accordance with Council's ESD objective 5.
- (iv) To minimise the need for artificial lighting in dwellings during the day, to ensure energy efficient outcomes in accordance with Council's ESD objective 5.
- (v) To orientate dwellings so that the living areas face north.

DEVELOPMENT CONTROLS

- (a) Dwellings should be sited to allow adequate provision for access of direct sunlight to adjacent dwellings.
- (b) Living areas of dwellings shall be orientated to the north wherever possible.
- (c) Dwellings areas should be sited to maximise the amount of direct sunlight available to clothes drying areas.
- (d) Dwellings are to be orientated to promote direct sunlight. Ideally, face the long axis of the development up to 30 degrees east and 20

degrees west of true north. This is illustrated in the following diagrams:





Source: BDP Environment Design Guide

- (e) Where winter solar access is not optimum consider the use of double-glazing or high performance glass.
- (f) Windows to living areas or bedrooms should have suitable shading or other solar control to avoid summer overheating and are to be integrated into the overall elevation design.
- (g) Consider the use of horizontal shading devices (for north facing windows) including eaves, verandahs, pergolas, awnings and external horizontal blinds to allow low summer sun whilst providing shade from high summer sun.

SUBMISSION REQUIREMENT

Shadow Diagrams may be required to identify the shadow impact of any development on adjoining properties.

4.14. PRIVACY – VISUAL AND ACOUSTIC

OBJECTIVES

- To site and design buildings to ensure visual privacy between dwellings in accordance with Council's ESD objective 7.
- (ii) To avoid overlooking of living spaces in dwellings and private open spaces.
- (iii) To contain noise within dwellings and communal areas without unreasonable transmission to adjoining dwellings.

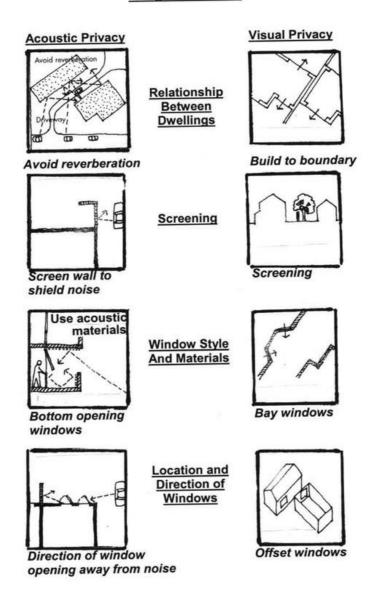
DEVELOPMENT CONTROLS

- (a) Buildings are to be designed to ensure maximum protection of privacy, in particular the privacy of primary living areas must be protected. Where appropriate consideration should be given to:
- (b) using windows that are narrow, translucent or obscured or have window sills a minimum of 1.5 metres above the upper storey floor level.
- (c) ensuring that windows that face directly to the windows, balconies or yards of adjoining dwellings are appropriately screened.
- (d) First floor balconies will not be permitted where they overlook living areas of adjacent dwellings.
- (e) Windows should be placed to minimise direct viewing between dwellings.
- (f) Dwellings are to be designed to limit the potential for noise transmission to the living and sleeping areas of adjacent existing and future developments.
- (g) Careful consideration should be given to the location of air-conditioning systems, swimming pools and the like to minimise the impact on the amenity of adjoining properties.
- (h) Private open space areas and driveways are to be designed to minimise noise impacts.
- (i) Dwellings that adjoin arterial or sub-arterial roads are to be designed to acceptable internal noise levels, based on Environmental Protection Authority – Environmental Criteria for Road Traffic Noise and Australian Standard 3671 – Road Traffic Noise Intrusion – Building Siting and Construction.

SUBMISSION REQUIREMENT

 Statement from a qualified acoustic consultant certifying that the design and construction of the building meets the Environmental Protection Authority – Environmental Criteria for Road Traffic Noise and Australian Standard 3671 – Road Traffic Noise Intrusion – Building Siting and Construction.

Design Techniques



Source: Australia's Guide to Good Design - Residential

4.15. ACCESS AND SURVEILLANCE

OBJECTIVES

- (i) To ensure the needs of residents and visitors are considered with particular regard to access requirements, safety and security in accordance with Council's ESD objective 9.
- (ii) To promote incorporation of community safety aspects in the development design in accordance with Council's ESD objective 8.

DEVELOPMENT CONTROLS

(a) Small lot housing developments are to provide safe and convenient access for prams,

- wheelchairs and people with disabilities from the public road to all areas of the development.
- (b) The design of an integrated development is to demonstrate consideration of resident safety and security whereby pedestrian pathways and associated areas are not to be obscured, but rather provided with natural surveillance.
- (c) The siting and design of dwellings shall ensure surveillance of all common areas.
- (d) Access to dwellings is to be direct and without unnecessary barriers. For example, use ramps instead of stairs/steps, consider the height and length of handrails and eliminate changes in level between ground surfaces.
- (e) Stairs and ramps are to have reasonable gradients and non slip even surfaces. Refer to

AS 1428.1 - 1988 Design for Access and Mobility and supplementary AS 1428.2 - 1992.

4.16. FENCING

OBJECTIVE

(i) To ensure that fencing is of a high visual quality, complements the character of the existing streetscape and is compatible with the proposed development.

DEVELOPMENT CONTROLS

- (a) Where fencing is proposed, it is to form part of the architectural design concept for the site.
- (b) Where there is no front fencing within the existing public road streetscape, front fencing to the public road frontage is to be avoided to maintain an open streetscape appearance.
- (c) Consideration will be given to fencing on secondary public road frontage setbacks, subject to there being no adverse affect on the immediate area and on traffic visibility and be of a design to incorporate features such as landscaping bays or a variation/combination of materials.

APPENDIX 1 - TREE SPECIES SELECTION AND PLANTING GUIDELINES

TREE SPECIES SELECTION PRINCIPLES

The attached plans establish neighbourhood character zones based on the landscape topography, neighbourhood boundaries, character and features of the release area.

The plan establishes four main zones where distinct landscape characters will be established:

- Drainage Landscape Zone.
- Native Landscape Zone.
- Cultural Landscape Zone.
- Ridgetop Landscape Zone.

Proposed tree species lists for each zone are identified on the basis of the site characteristics and the intended character, allowing for a varied and contrasting landscape to be established.

Works involving restoration of bushland must utilise indigenous species and following establishment have low ongoing maintenance requirements.

For works within open space areas refer to the Kellyville Rouse Hill Open Space and Recreation Plan 1998 and seek discussions with Council prior to submission of any plans for approval.

1.1 Street Tree Species Matrix

The tree species matrix includes species that are considered suitable for growing in the area covered by this Development Control Plan, and are long lived species that will require minimum maintenance while growing in urban conditions.

The species list has been developed to respond to the microclimatic conditions including exposure to harsh weather conditions, soil, drainage conditions and aspect as well as the space allocated within road reserves and drainage land.

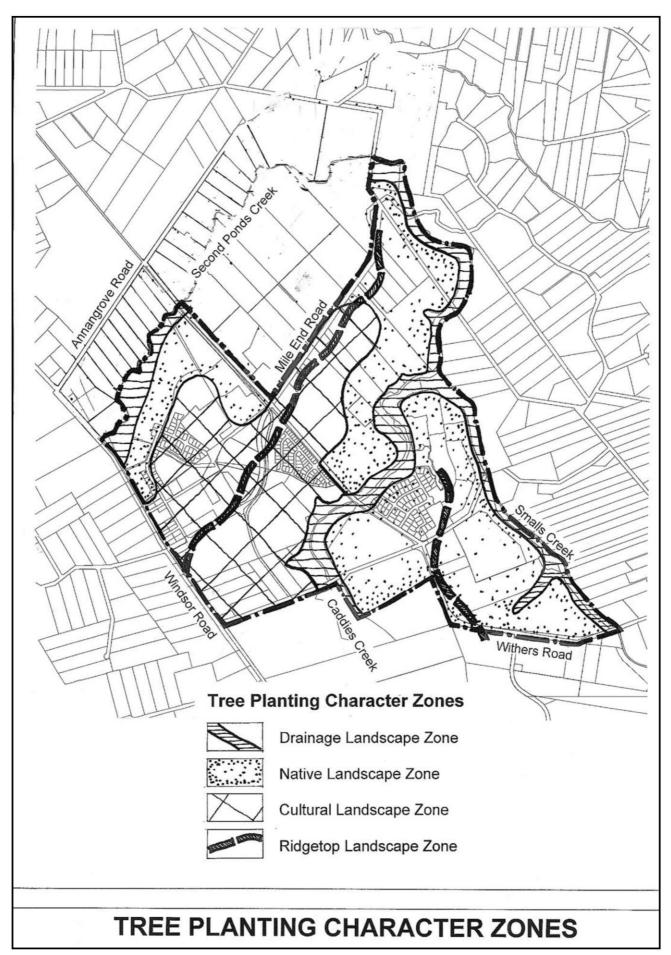
Refer to Part C Section 3 – Landscaping for guidance on street tree planting on Access Way, Access Place and Access Street.

Note. Plans indicating proposed tree planting within publicly owned land must be submitted to Council for approval. The following list must be read in conjunction with the attached plans of Tree Planting Character Zones.

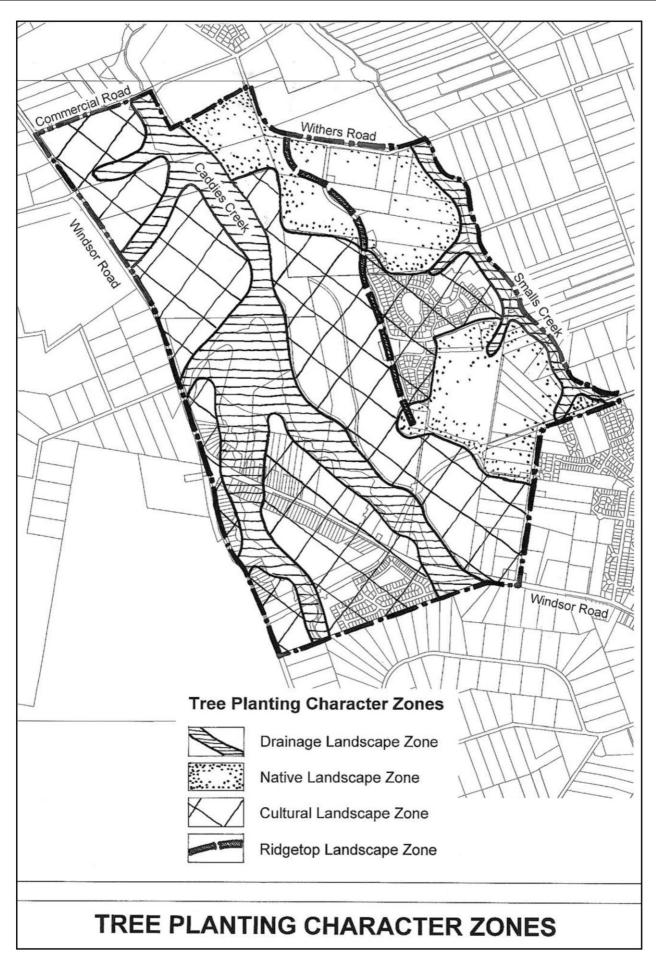
Landscape Setting and Tree Species	Drainage Land	Collector	Sub-arterial, Arterial
Smalls Creek			
Eucalyptus pilularis	Х	Х	Х
Eucalyptus punctata	Х	Х	Х
Eucalyptus saligna	Х		
Eucalyptus teriticornis	Х	Х	Х
Syncarpia glomifera	Х		Х
Second Ponds Creek			
Melaleuca decora	Х		Х
Casuarina glauca	Х		х
Eucalyptus teriticornis	Х	Х	х
Caddies Creek		·	
Angophora floribunda	Х	х	х
Casuarina glauca	Х		Х
Eucalyptus amplifolia	Х		Х
Eucalyptus teriticornis	Х	Х	Х
Melaleuca decora	Х		Х
Melaleuca linarifolia	Х		Х

Landscape Setting and Tree Species	Drainage Land	Collector	Sub-arterial, Arterial
Adjacent to flood prone land:			
Adjacent to Cattai Creek Conservation Area			
Angophora costata		X	
Eucalyptus eximia		X	
Eucalyptus piperita		X	Х
Eucalyptus sclerophylla		X	Х
Native tree species – adjoins Native Landscape	Zone		<u> </u>
Acmena smithii	X		X
Eucalyptus elata	Х	Х	Х
Eucalyptus moluccana			Х
Syncarpia glomulifera	X		Х
Syzigium paniculatum	X		Х
Tristaniopsis laurina	X		Х
Waterhousia floribunda	X		X
Exotic Tree species – adjoins Cultural Landsca	pe Zone		
Citharexylum quadrangulare		х	
Magnolia x Soulangiana		X	
Ulmus parvifolia		X	
Fraxinus raywoodii		X	
Native Landscape Zone			
Angophora floribunda	X	X	Х
Angophora costata		X	Х
Eucalyptus crebra	Х	X	Х
Eucalyptus haemestoma		X	Х
Eucalyptus maculata		X	Х
Eucalyptus microcorys	X	X	Х
Eucalyptus paniculata	X	X	Х
Eucalyptus pilularis	X		
Eucalyptus punctata	Х	X	Х
Eucalyptus scoparia		X	Х
Eucalyptus teriticornis		X	Х
Lophostemon confertus		X	Х
Melaleuca linarifolia	X	X	Х
Cultural Landscape Zone			
Native tree species			
Brachychiton discolor		x	X
Eucalyptus cinerea		X	Х
Eucalyptus crebra		X	X
Eucalyptus maculata		X	X
Eucalyptus punctata		X	X
Eucalyptus scoparia		X	X
Exotic tree species			
Calodendron capense		X	
Citharexylum quadrangulare		X	
Gleditsia tricanthos 'Sunburst'		X	
Jacaranda mimosifolia		X	
Sapium sebiferum		X	
Ulmus parvifolia		X	

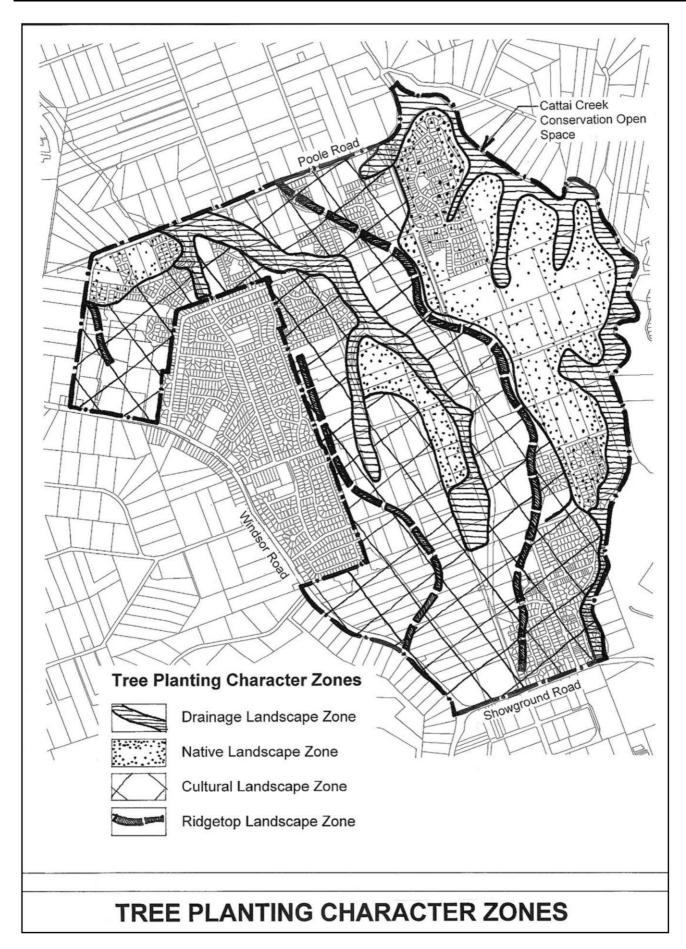
Landscape Setting and Tree Species	Drainage Land	Collector	Sub-arterial, Arterial
Ridgetop Landscape Zone			
Native species			
Araucaria heterophyla		Х	
Araucaria cunninghamiana		Х	
Eucalyptus maculata		Х	Х
Eucalyptus scoparia		Х	Х
Ficus macrophyla		Х	
Exotic species			
Fraxinus raywoodii		Х	Х
Jacaranda mimosifolia		Х	Х
Lophostemon confertus		Х	Х



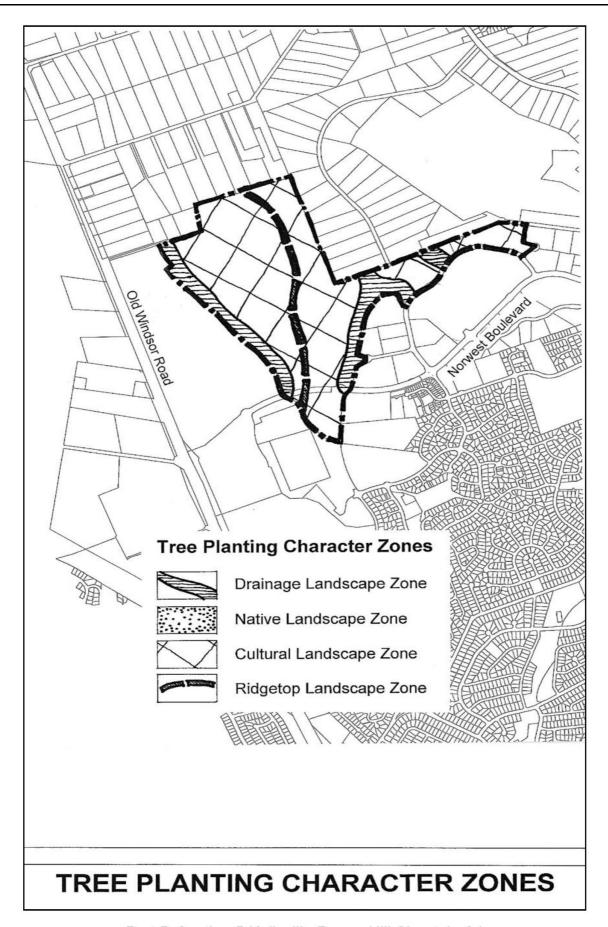
Part D Section 5 Kellyville Rouse Hill Sheet 1 of 4



Part D Section 5 Kellyville Rouse Hill Sheet 2 of 4

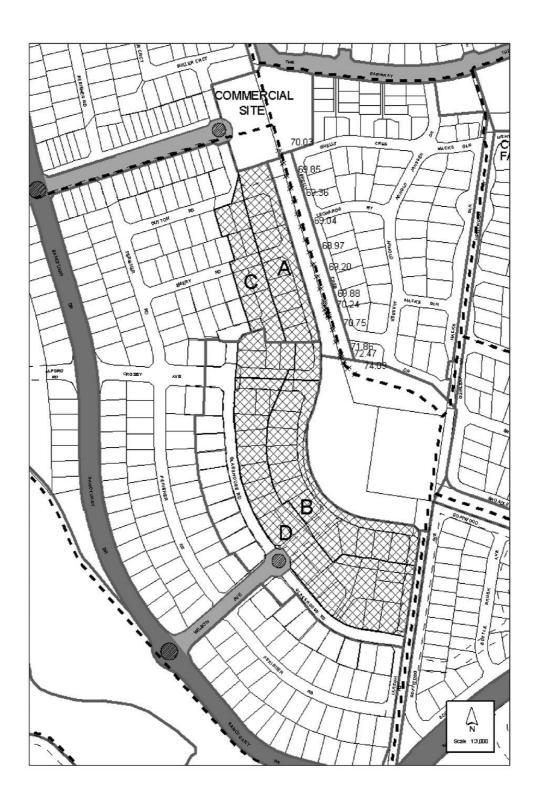


Part D Section 5 Kellyville Rouse Hill Sheet 3 of 4



Part D Section 5 Kellyville Rouse Hill Sheet 4 of 4

APPENDIX 2 - MAP SHOWING LOCATION OF TURKEY NEST PARK HEIGHT RESTRICTIONS AND LEVELS ALONG GREENWAY LINK PATHWAY



APPENDIX 3 - INFORMATION TO BE SUBMITTED WITH A DEVELOPMENT APPLICATION FOR SMALL LOT HOUSING

(REFER TO CLAUSE 4.1B OF THE HILLS LEP 2012)

The following plans and details are required to be submitted with all development applications.

COMPLETED APPLICATION FORM

You must have the written consent of all current owners.

STATEMENT OF ENVIRONMENTAL EFFECTS (SEE)

SITE PLANS

These plans should include the following information:

- Be produced in ink and be not less than A4 and no greater than A1 in size;
- Be of suitable scale (1:500 or 1:000 wherever possible). In cases where there is more than 1 sheet an overall plan at 1:4000 should be submitted to illustrate the overall layout;
- Include existing boundaries and lot or portion numbers in broken lines/lettering;
- Proposed boundaries as form lines with proposed dimensions and areas;
- Proposed lots consecutively numbered and include any easements and restricted development areas;
- Widths of all existing roads;
- Footpath and pavement widths of all proposed internal roadways;
- Position of all intersecting adjoining property boundaries, existing roads or property boundaries of land on the opposite side of all existing roads adjoining the site;
- All vegetation and trees on the subject property (separate plan);
- Contours in one metre intervals at Australian Height Datum;
- All existing buildings, watercourses, drains, dams, swamps, easements, right-of-ways, structures or permanent improvements;
- All services:
- Dimensions and area of site;
- Location, size and height of all dwellings;
- Distance to all boundaries from buildings and courtyard fences;
- Existing trees (indicating whether or not they are to be removed or retained);
- Original ground levels and proposed finished ground levels;

- Location of services;
- Location and general description of any adjoining developments;
- Extent of landscaped area provided;
- Site coverage calculations; and
- The height of all dwellings at site boundaries and internal site levels.

ARCHITECTURAL PLANS

- Internal layout of unit/building (existing and proposed);
- Number of garages/carports/spaces for residents/spaces for visitors;
- Location of services/ancillary features;
- Elevations;
- Types of external materials/finishes/colours;
- Must be at an appropriate scale (eg. Scale 1:100 or Scale 1:200); and
- Shadow Diagrams (i.e. 9.00am, 12.00pm and 3.00pm in mid-winter). In addition shadow diagrams are to take into consideration shadows from adjoining development, existing trees, etc.

LANDSCAPE PLANS

 These plans are to be prepared in accordance with Part C Section 3 – Landscaping.

EARTHWORKS PLAN

Existing and proposed levels/contours.

BASIX certificate

Submission of a BASIX Certificate issued within three months of the date of lodgement is required for a new residential development, including swimming pools, to which BASIX applies. See website for further information: www.basix.nsw.gov.au.

WASTE MANAGEMENT PLAN

Refer to Part B Section 2 - Residential.

SEDIMENT EROSION CONTROL PLAN

Refer to Part B Section 2 - Residential.

COMMUNITY TITLE SUBDIVISION

In addition to the plans required above, a Draft Management Statement and Development Contract must be provided.

STRATA TITLE SUBDIVISION

For Strata Title Subdivision the plans required must:

- Be produced in ink and be not less than A4 and no greater than A1 in size;
- Be of suitable scale (1:500 or 1:000 wherever possible). In cases where there is more than 1 sheet an overall plan at 1:4000 should be submitted to illustrate the overall layout;
- Show proposed boundaries as form lines with proposed dimensions and areas; and
- Show proposed lots consecutively numbered and include any easements and restricted development areas.

MODEL

A scale model is required to be submitted for each development application that proposes more than 20 dwellings, showing the relationship of the proposed development to adjoining properties and the existing streetscape.

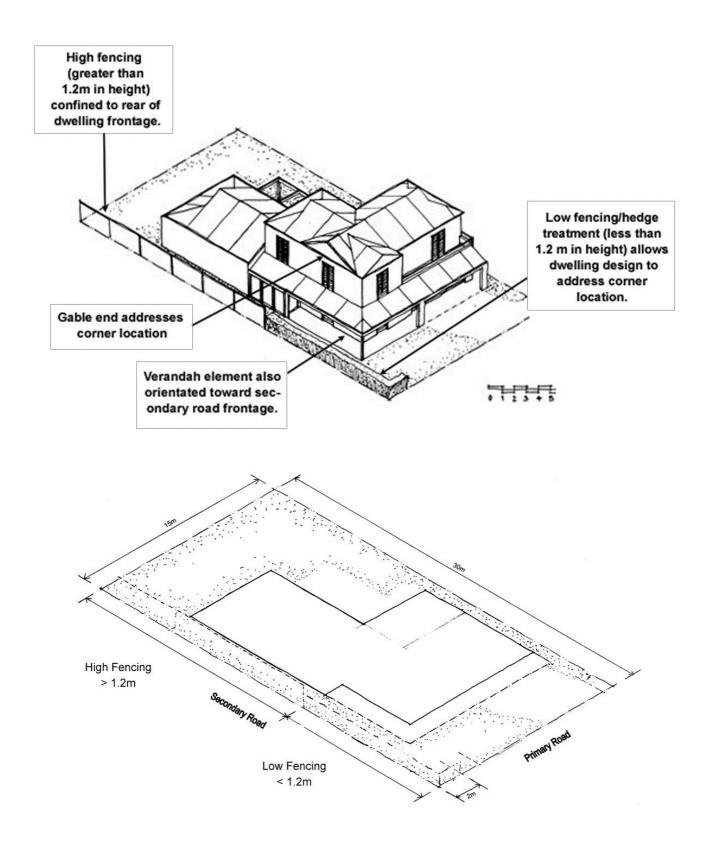
ADDITIONAL REPORTS/PLANS

The following reports may be required depending on the nature of the site and application. Advice will be provided at pre-lodgement stage as to which of the following are required with the application:

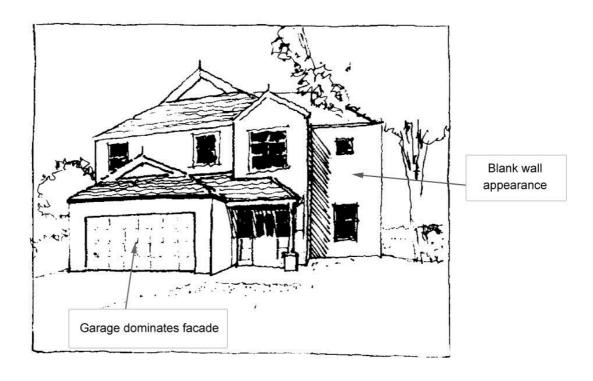
- Flora and Fauna Assessment;
- Geotechnical Contamination Assessment;
- · Geotechnical Assessment;
- Heritage Impact Assessment;
- Bush Fire Assessment;
- Tree Assessment Report;
- European and Aboriginal Archaeological Assessment;
- Flood Study;
- Landscape Plan or Masterplan;
- Streetscape Perspective Plan;
- Solar Access and Siting Plan;
- Concept On-Site Detention plans/details; and
- Shadow Diagrams where applicable.

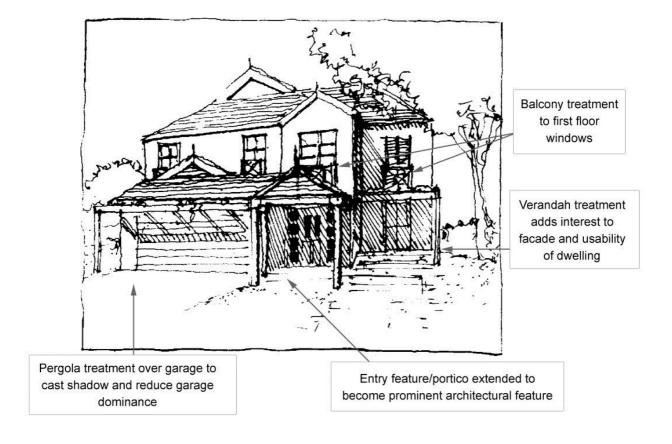
Note. Refer to Part A – Introduction section 4.0 for general lodgement requirements and detailed requirements to be included in each of the above documentation.

APPENDIX 4 – EXAMPLE OF DWELLING DESIGN ON CORNER ALLOTMENT



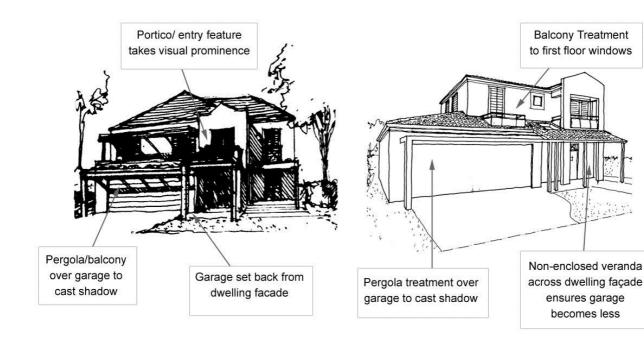
APPENDIX 5 – EXAMPLES OF GARAGE DESIGN CONTROLS











APPENDIX 6 - CARRIAGEWAY DESIGN

Advisory Note:

Council at its meeting of the Planning Services Review Committee on 4 April, 2000 resolved to adopt changes to the carriageway width standards of this Development Control Plan as follows:

Road type	Required carriageway width		
	PREVIOUS	CURRENT	
Access Way	5.0 metres	6.0 metres	
Access Place	6.5 metres	7.5 metres	
Access Street	7.5 metres	8.5 metres	
Collector Road	9.5 metres	9.5 metres (no change)	

In the event that a road is required to be constructed under the current carriageway width standards and will join a road constructed under the previous standards the transition is to be achieved as follows:-

- (i) The required increase to the carriageway width of one (1) metre is to be achieved by a 0.5 metre increase on either side of the carriageway, and
- (ii) The transition to the wider carriageway is to be achieved over a length of 10 metres.

The above criteria are demonstrated graphically below.

