

The Hills Development Control Plan (DCP) 2012

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THE
HILLS
Sydney's Garden Shire



Part D Section 9

Target Site

23 - 25 North Rocks Road
North Rocks

D9

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1. INTRODUCTION

This Section of the DCP must be read in conjunction with Part A – Introduction of this DCP and other relevant Sections including:

- Part B Section 5 – Residential Flat Buildings
- Part C Section 1 – Parking
- Part C Section 6 – Flood Controlled Land.

This Section of the DCP has been prepared to guide future residential development on the former “go-kart” site at 23 - 25 North Rocks Road, North Rocks (subject site) in the Hills Shire.

1.1. LAND TO WHICH THIS SECTION OF THE DCP APPLIES

This Section applies to all land commonly referred to as the “Go-Kart Target Site”, and comprises those lots identified in Figure 1.1 below and legally identified as:

- 23 North Rocks Road, North Rocks (Lot 3 DP 1158967); and
- 25 North Rocks Road, North Rocks (Lot 100 DP 1128357).

This site has a total area of approximately 2.24 hectares.



Figure 1.1 Target Site

1.2. OBJECTIVES OF THIS SECTION OF THE DCP

OBJECTIVES

- (i) *To achieve a medium to high density residential development on a site identified for this purpose by the Hills Shire.*
- (ii) *To implement a development framework that will ensure anticipated future development of the site does not hinder the use or development of surrounding land for their intended or future purposes.*
- (iii) *To incorporate and demonstrate best practice urban design on the site.*
- (iv) *To provide design and environmental standards for the residential redevelopment of the site.*
- (v) *To ensure the principles of SEPP 65 – Design Qualities of Residential Flat Development are considered and incorporated.*
- (vi) *To ensure that any development on the site is appropriate to the site's context and enhances the surrounding natural characteristics.*
- (vii) *To facilitate the amalgamation of sites and provision of a landscaped buffer to James Ruse Drive.*

1.3. STRUCTURE OF THIS SECTION

This document has been divided into four parts:

- 1. Introduction
- 2. The Urban Context / Site Analysis
- 3. The Development Framework

4. Development Controls

2. URBAN CONTEXT/SITE ANALYSIS

Part 2 of this Section analyses the site's regional and local context. It outlines the site's placement and relationship to topography, views, drainage, accessibility, adjoining land uses and built forms.

It also identifies the opportunities and constraints exhibited by the site with respect to its regional and local context. This analysis has helped to inform the development strategy (part 3) and formulation of the development controls (part 4) for the site.

2.1. SITE ANALYSIS

2.1.1. SITE DESCRIPTION

The site is located on the north-eastern corner of the intersection of Windsor Road and James Ruse Drive, Northmead. It represents an important entry point to the Hills Shire from the south, lying just north of the boundary between The Hills and Parramatta Local Government Areas.

The site is irregular in shape and has a total area of approximately 2.24 hectares.

The site's primary frontage is to Windsor Road, however no vehicular access is available from Windsor Road or James Ruse Drive. The site is accessed from North Rocks Road.

Figure 2.1 illustrates the extent of the subject site.



Figure 2.1 Subject site

2.1.2. NOISE & VIBRATION

The site is primarily affected by traffic noise emanating from both James Ruse Drive and Windsor Road, and vibration from heavy vehicles.

A Noise Impact Assessment will be required to be lodged with any development application for residential development upon the site to determine the extent of acoustic treatment required to the buildings.

Issues relating to noise generated by the industrial premises to the north of the site and vibration from heavy vehicles will also need to be considered. Sufficient setbacks will be required to this boundary in conjunction with appropriate construction techniques to minimise any future noise and vibration impacts.

Noise impacts are illustrated in Figure 2.2.

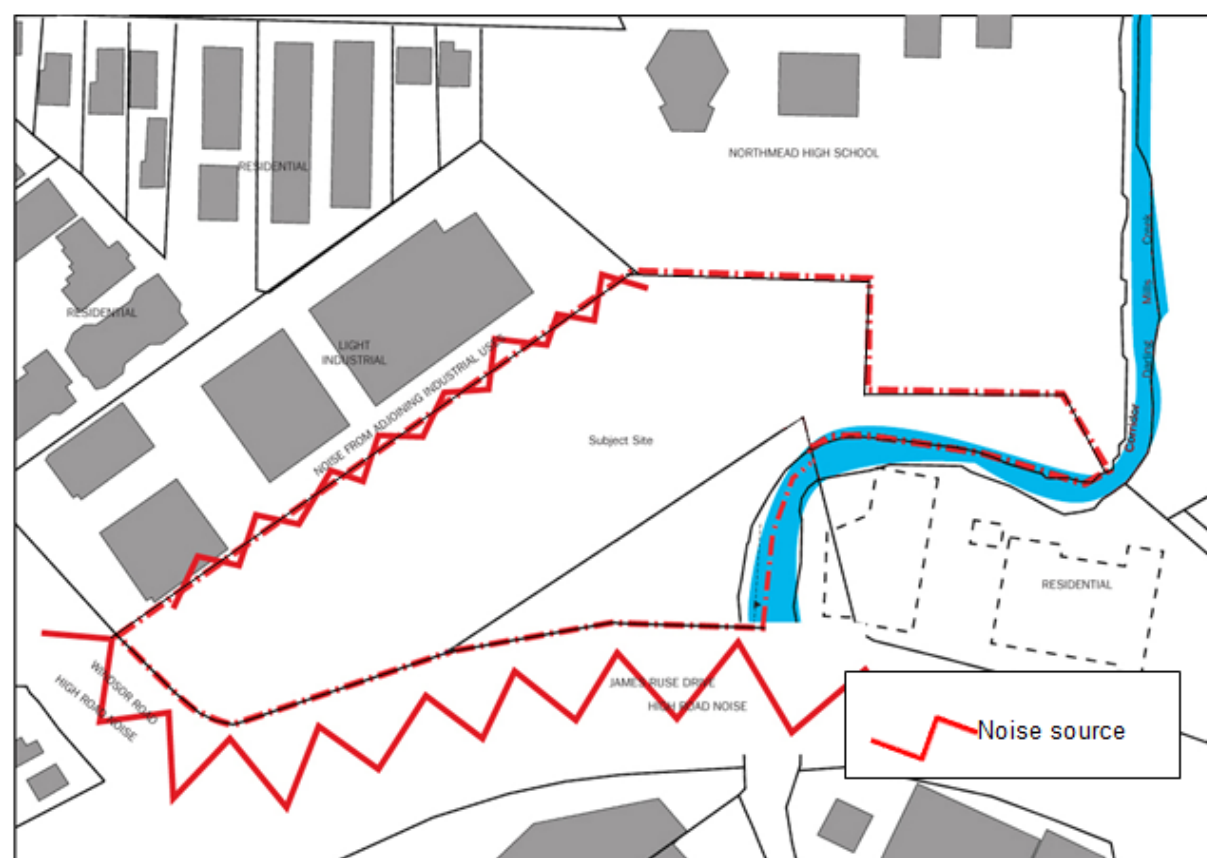


Figure 2.2 Noise impacts

2.1.3. EASEMENTS

A road widening easement of varying width lies along the site's Windsor Road frontage and a pipeline easement of varying width lies along the site's James Ruse Drive frontage. No development can occur over this pipeline easement. Any development on and within the vicinity of the pipeline should be referred to Caltex Australia Petroleum Pty Ltd for their comment.

An easement for access to the site passes through 23 North Rocks Road.

These constraints are illustrated in Figure 2.3.

2.2. SITE OPPORTUNITIES

The opportunities offered by the site and its surroundings are as follows:

- There is potential for good views to the Parramatta CBD and Darling Mills Creek from elevated positions on the site.
- The prominent corner position on two major arterial roads provides the opportunity to create a landmark built form which will reinforce this important intersection and act as a gateway to The Hills Shire.
- Given its proximity to public transport, pedestrian and cycle routes, schools, accessible green spaces and waterways, hospitals and shopping, the site is ideal to be redeveloped for medium density residential uses.
- There is the possibility to create a new pedestrian access across the site to link Campbell Street with Darling Mills Creek, whilst ensuring the creek and its core riparian are not compromised nor its function affected.
- The Darling Mills Creek and its associated natural environment create a pleasant outlook for the site and provide opportunities for regeneration of natural vegetation.
- There is potential to locate communal open space in the northern corner of the site to capitalise on its outlook, access and environmental quality. All open space and recreational areas should be located outside the core riparian corridor.
- Land at 23 North Rocks Road can provide a landscaped feature and buffer between James Ruse Drive and the built form. It also provides potential for the provision of additional vehicular circulation areas to enhance the amenity of the building entrance (ie. pick-up/drop-off).

Site opportunities are indicated in Figure 2.4.

2.3. SITE CONSTRAINTS

The constraints posed by the site and its surroundings are as follows:

- Significant traffic noise from Windsor Road and James Ruse Drive would require appropriate acoustic treatments to be incorporated.
- Noise from the adjoining industrial buildings means that sufficient setback would be required from the north-western boundary (in terms of both visual and acoustic privacy).
- The outlook to the adjoining industrial buildings is relatively poor. Appropriate screening would be required.
- The view to the two main roads is undesirable. A visual buffer would be required between these roads and the buildings.
- Development cannot occur over the road widening and pipeline easements in addition to the flood controlled land or the core riparian corridor along Darling Mills Creek.
- It is desirable to retain native vegetation located in the north-east of the site.

Site constraints are indicated in Figure 2.5.

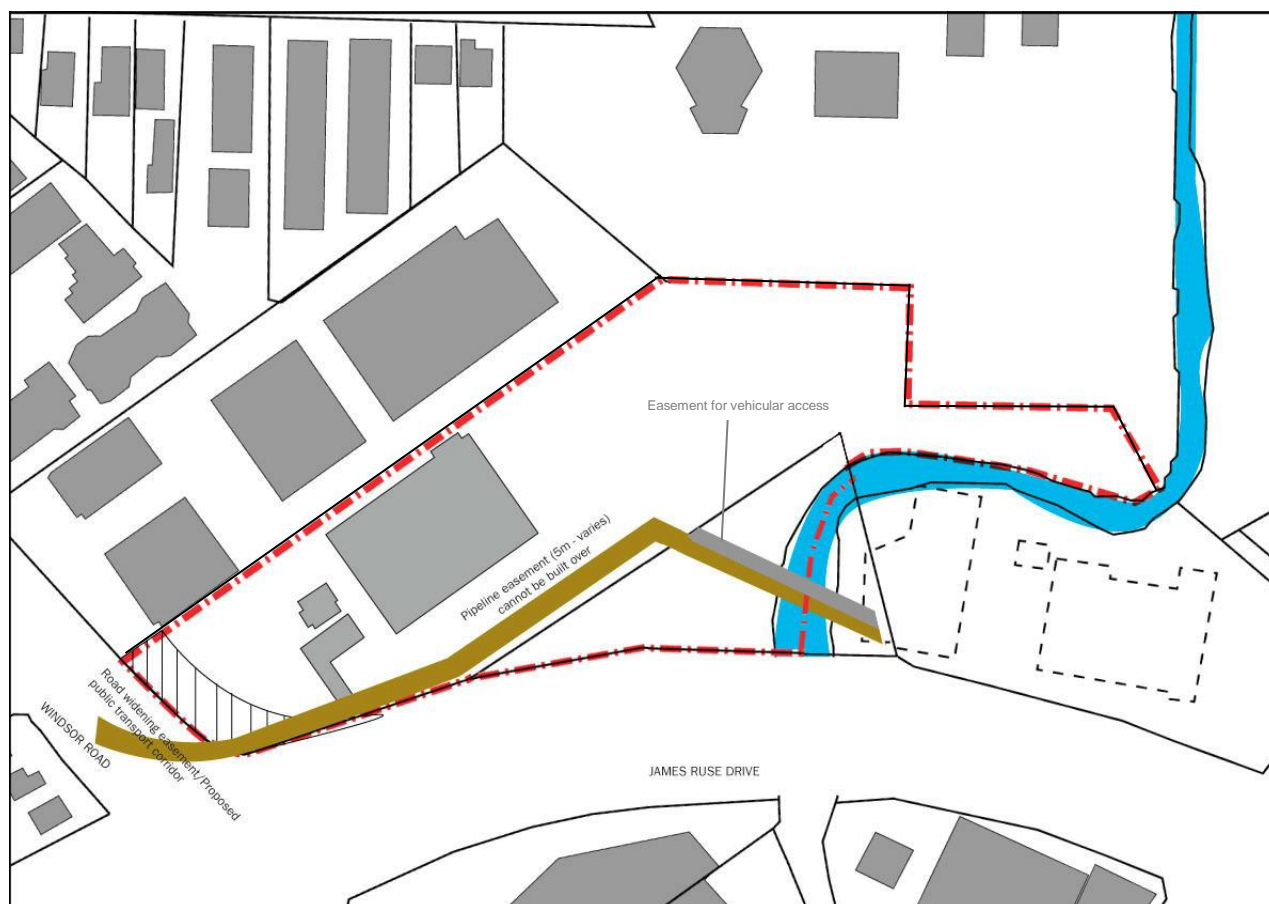


Figure 2.3 Easements

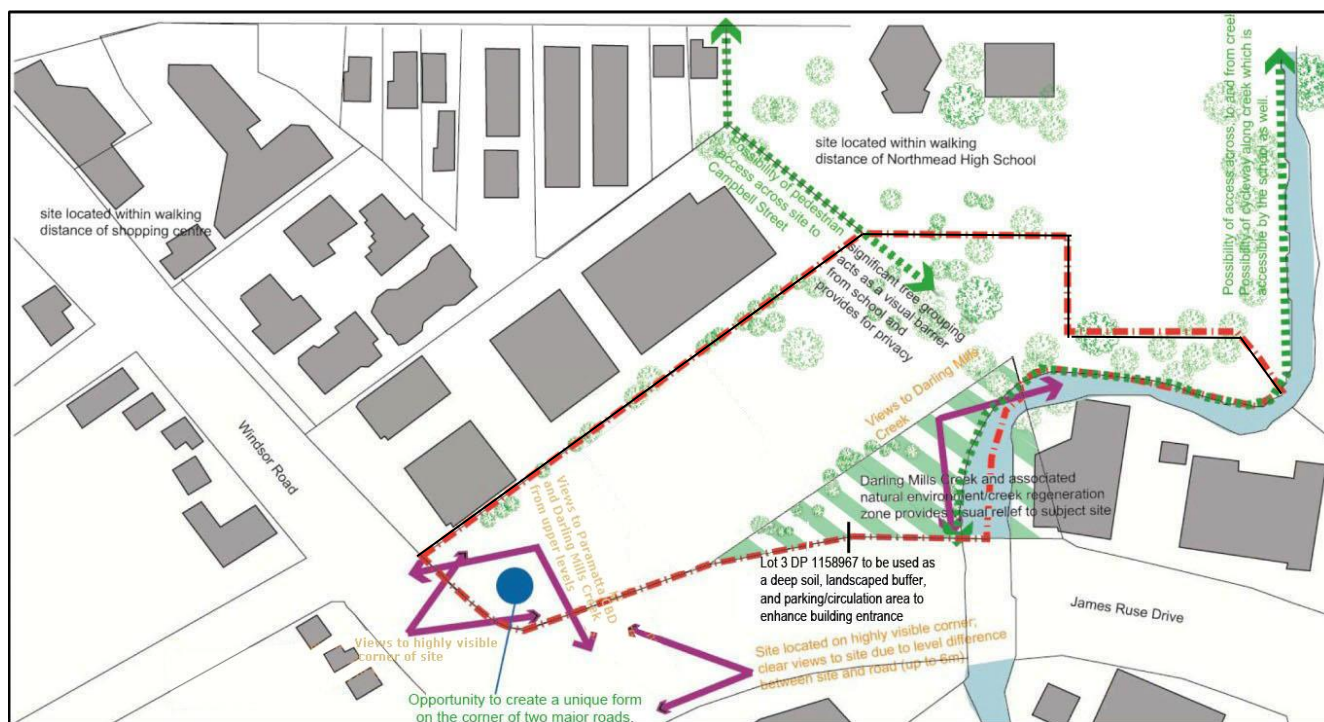


Figure 2.4 Site opportunities

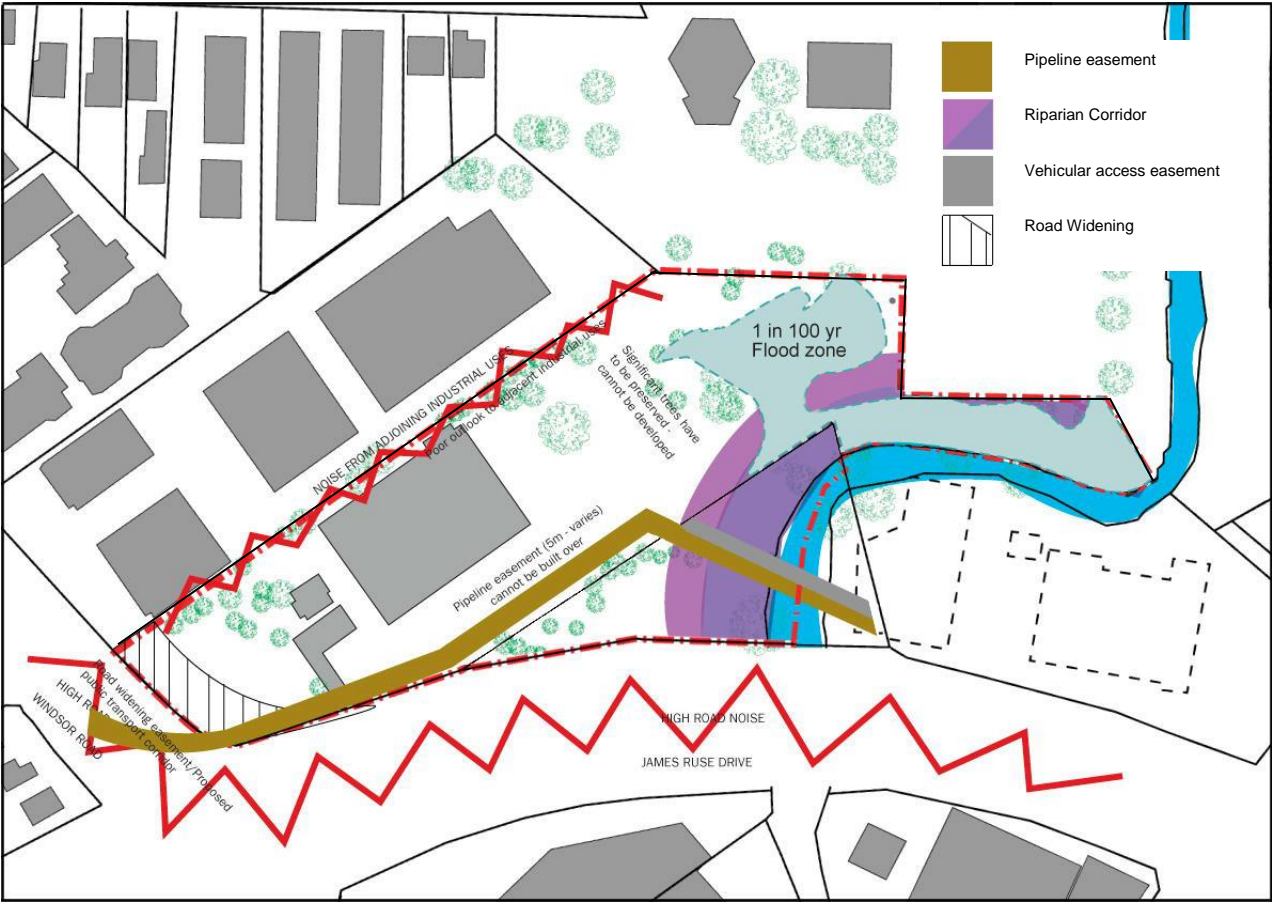


Figure 2.5 Site constraints

3. DEVELOPMENT STRATEGY

Part 3 contains development strategies for the site upon which the development controls in part 4 are based. The development strategy has been formulated with regard to the site analysis and the identification of opportunities and constraints undertaken in part 2 of this Plan.

Figure 3.1 illustrates the developable area on the site considering all requirements for setbacks and

easements, access, possible focal points, open spaces and recreational facilities.



Figure 3.1 Development potential of the site

3.1. THE VISION / CONCEPT

The vision for the site is to create a quality residential development in North Rocks with high levels of residential amenity, that provide a choice of housing to meet the diverse needs of residents and cater for a variety of lifestyle expectations. Future development should contribute to the environmental and neighbourhood values of the locality through adherence to urban design principles that enhance these qualities.

The proposed vision is illustrated in Figures 3.2a and b.

Pedestrian promenades



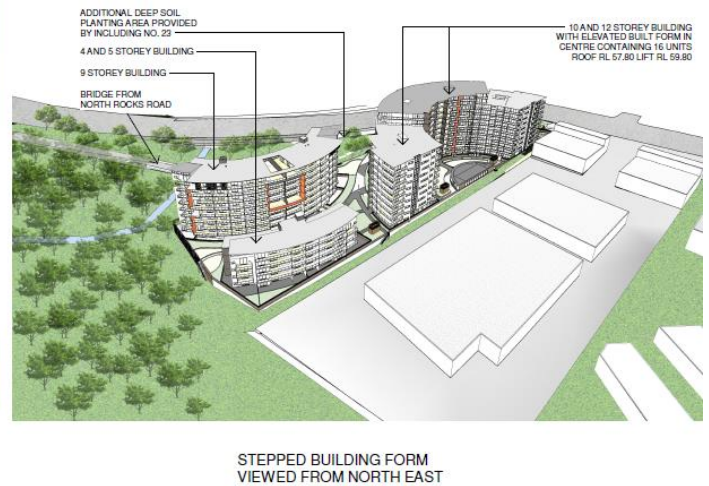
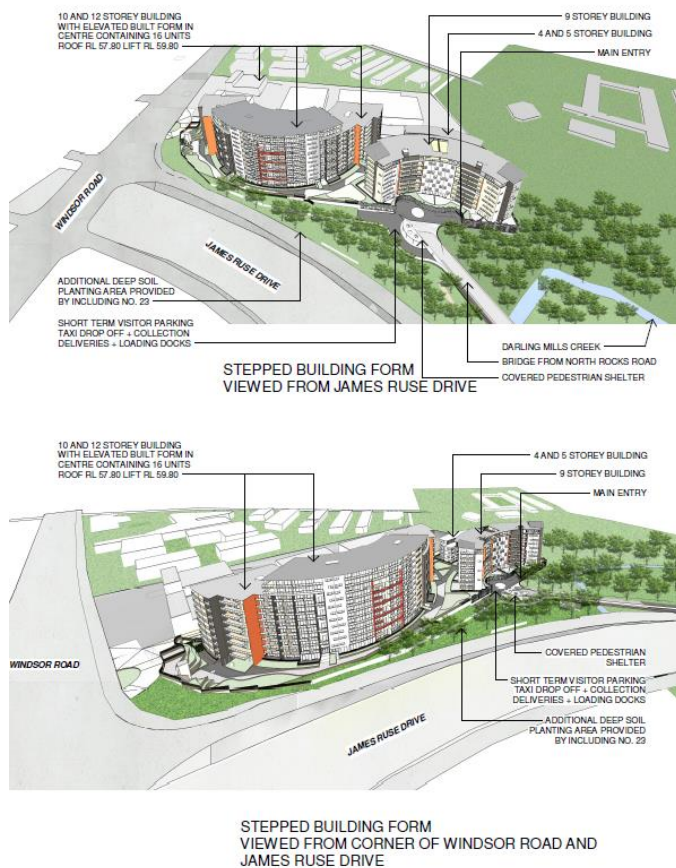
Example of Landmark Structure



Enhanced access to natural environment and creek regeneration



Figure 3.2a Proposed development vision / concept



NOTE:
CLEAR HEIGHT FLOOR TO FLOOR 3000mm

Figure 3.2b Proposed development vision / concept

3.2. BUILT FORM

A unique and taller building form is envisaged in the south-western corner of the site, adjacent to the intersection of James Ruse Drive and Windsor Road. This building will provide a focal point within the locality, marking the important intersection of James Ruse Drive and Windsor Road. A tall building in this location will result in negligible overshadowing impacts within the site and neighbouring development. In addition, increased building height on the highest point of the site will optimise views to Darling Mills Creek, the Parramatta CBD.

Building height will be reduced as the distance from the intersection of James Ruse Drive and Windsor Road increases. This is to enable an appropriate transition in height to provide an enhanced relationship with the lower built forms on adjacent properties.

The intent of this illustrated in Figure 3.3.

The design of buildings is to ensure optimum cross-ventilation and solar access into residential flats. Small building footprints are desirable on the site in order to achieve lower site coverage in response to the proximity of Darling Mills Creek and its riparian corridor and to allow for deep soil planting to establish a scale of vegetation compatible in scale with the proposed buildings.

Buildings are to be oriented so that living rooms of residential flats face north, maximising solar access and reducing the need for artificial lighting and heating.

3.3. BUILDING SEPARATION AND SETBACKS

Appropriate setbacks from boundaries and between buildings will be incorporated to minimise impacts upon visual and acoustic privacy, enable the growth of substantial vegetation, and minimise impacts on water quality. Setbacks are indicated in Figure 3.4.

The upper level of the building at the corner of Windsor Road and James Ruse Drive will incorporate a stepped feature. A bridging element will also be introduced in the centre of the western building to reduce massing. A curvilinear form can provide an

enclosed open space to the north while creating visual interest.

Building footprints and height controls are illustrated in Figure 3.3.

3.4. BUILDING USES AND COMMUNAL FACILITIES

The site will be redeveloped for medium density residential uses. It is anticipated that 328 residential flats could be accommodated on the site.

Recreational uses such as tennis courts and swimming pools are appropriate, as well as facilities such as a gymnasium and/or a convenience store. Recommended locations for communal facilities are illustrated in Figure 3.5.

Communal facilities on the site will be located on the ground floor level to maximise accessibility. Floor to ceiling heights of the ground floor levels are to be maximised to enable a flexible change of use should future demand arise for alternative permitted uses.

3.5. ACCESS AND MOVEMENT

Consistent with Part D Section 1 - Target Site, 27-33 North Rocks Road, North Rocks, access to the site shall be from North Rocks Road via Lot 101 DP 617754 (27 North Rocks Road) and Lot 2 DP 1158967, and through Lot 3 DP 1158967 (23 North Rocks Road).

This access road is to cross Darling Mills Creek via a bridge that spans the most direct route and should be able to accommodate two lanes of vehicular traffic, as well as pedestrians. The location of the proposed access is illustrated in Figure 3.6.

Part of Lot 3 DP 1158967, 23 North Rocks Road must be utilised to provide a formal entrance to the development through the provision of an at-grade pick-up / drop-off and loading area, pedestrian shelter and clear directional signage for visitors in addition to substantial landscaping and deep soil planting.

There is potential for a shared pedestrian and cycleway link from Darling Mills Creek to Campbell Street. New development should have regard to this potential link.

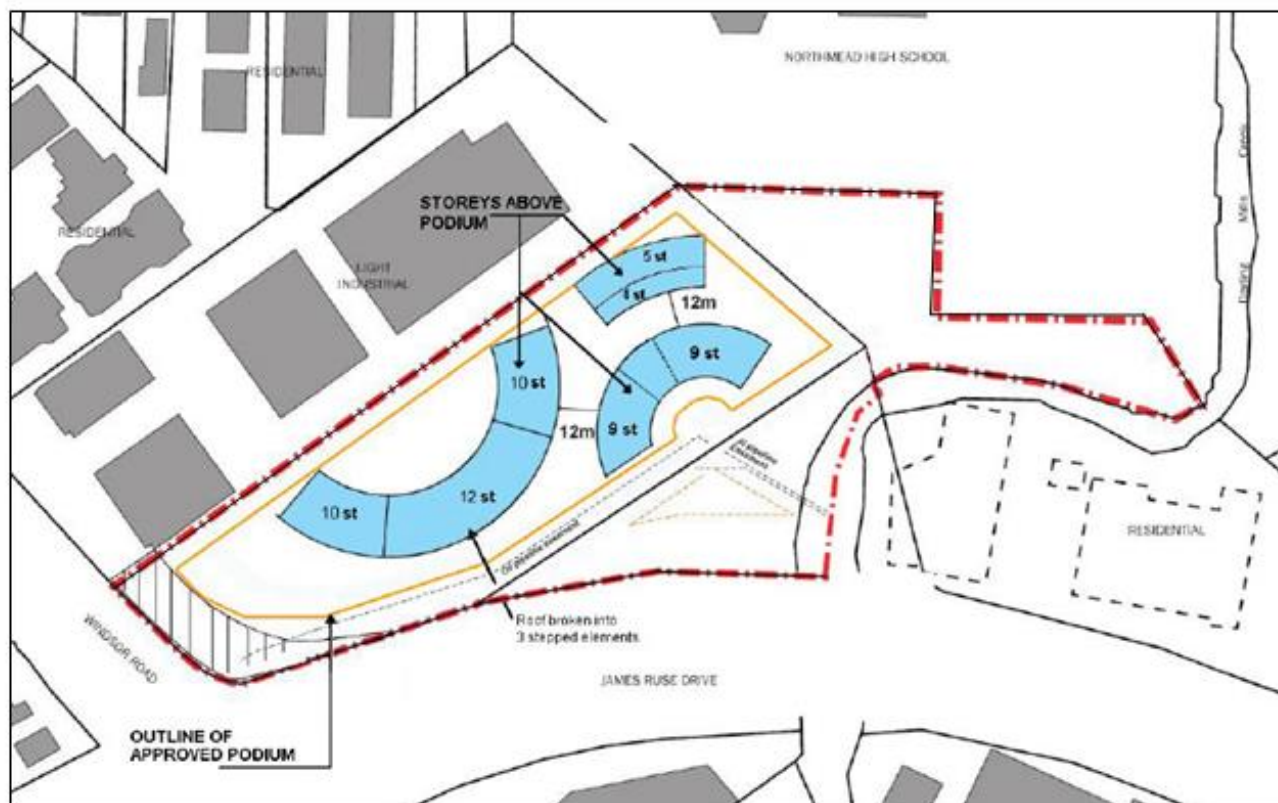


Figure 3.3 Building separation and height controls

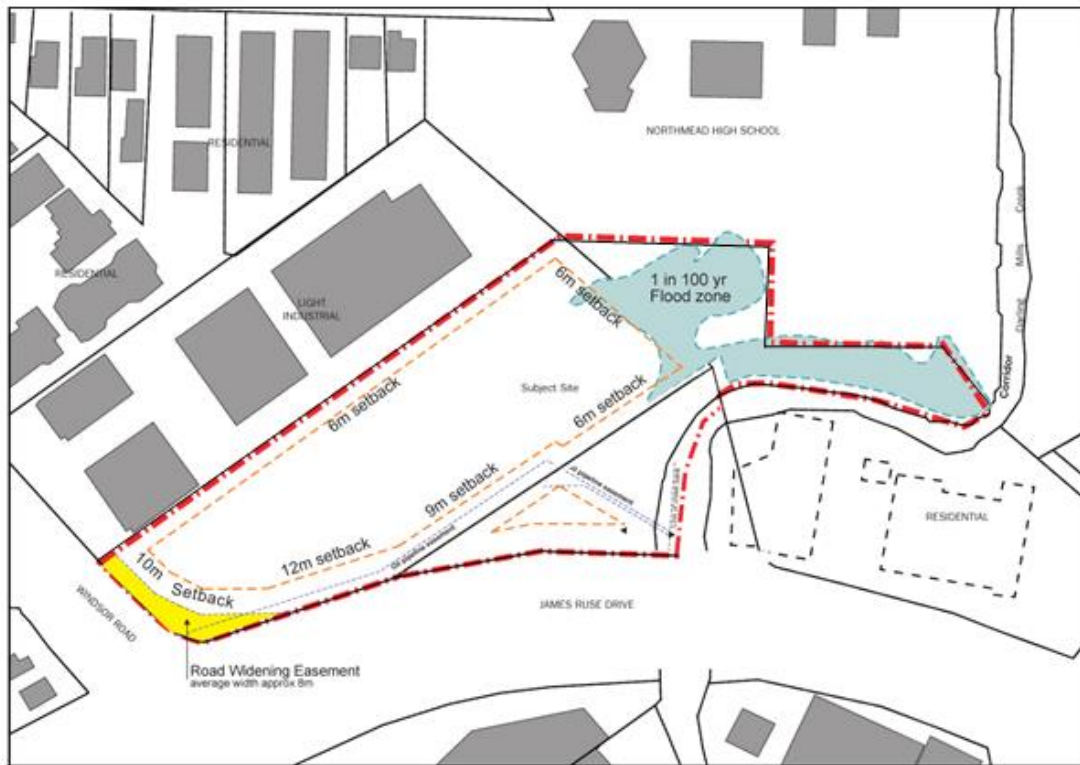


Figure 3.4 Setback controls



Figure 3.5 Space use zones

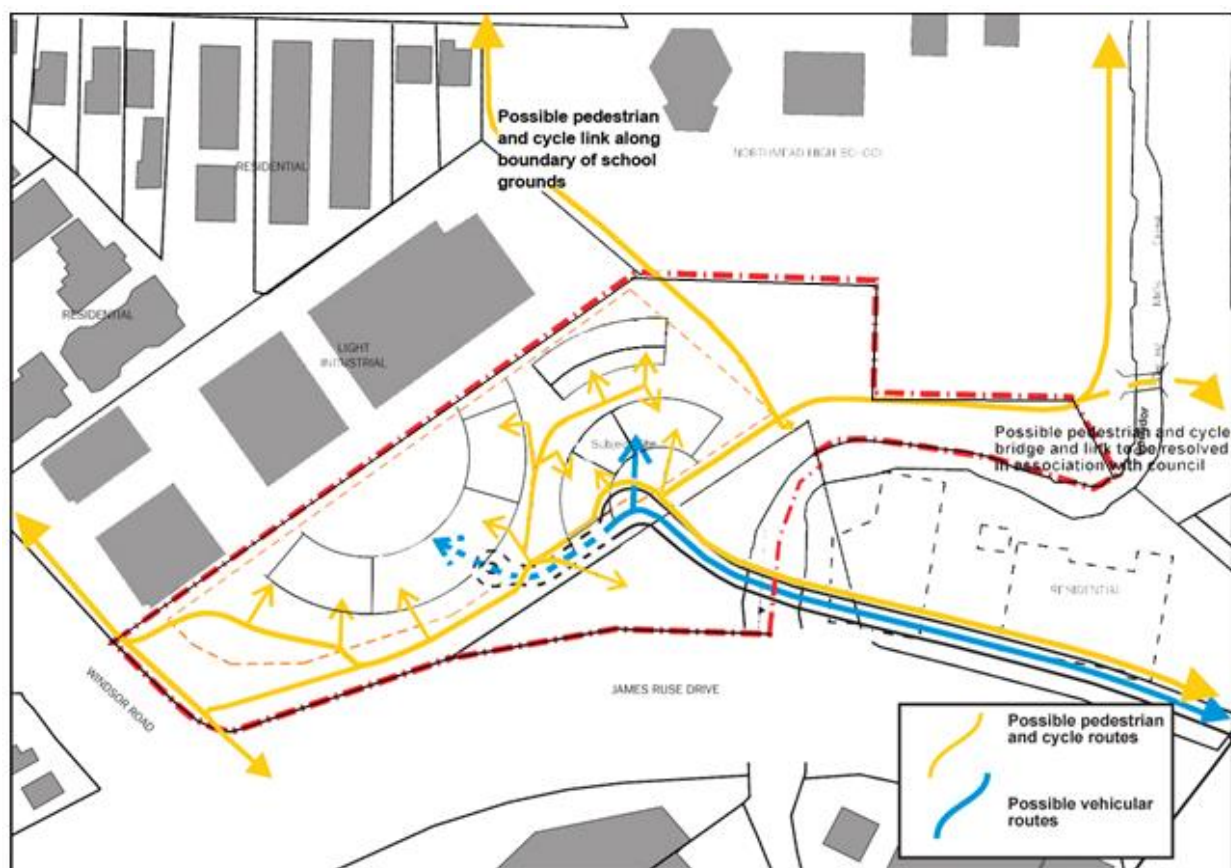


Figure 3.6 Access and movement

3.6. OPEN SPACE, VEGETATION AND LANDSCAPING

Four types of open space zones are envisaged for the site:

1. Structured and sunny open space in the form of north-facing courtyards for the private use of residents;
2. Recreational and passive open space in the middle of the site and on 23 North Rocks Road;
3. Unstructured and natural riparian corridor adjacent to Darling Mills Creek; and
4. Landscaped buffer and riparian regeneration area adjacent to James Ruse Drive (23 North Rocks Road) in addition to at-grade vehicular circulation / pedestrian movement area.

The location of these open space zones are illustrated in Figure 3.7.

Building footprints are minimised to ensure deep soil zones are incorporated across the site the establishment of trees of sufficient height to complement the scale of the proposed buildings.

Open spaces are concentrated on the northern sides of the development or aligned north-south to ensure adequate solar access, thus maximising usability. Re-vegetation along the creek, especially within the 1 in 100 year flood zone, will significantly improve the natural environment in this area.

The grouping of trees within the north-eastern part of the site should be preserved as much as possible for aesthetic and environmental reasons. This grouping of trees will also act as a visual barrier, providing privacy for future development by shielding it from the adjoining school grounds.

3.7. RESIDENTIAL AMENITY

Adequate separation should be provided between buildings and from site boundaries to ensure visual and acoustic privacy for residents. Tree planting is to be provided along main roads and the industrial interface to provide visual and acoustic amenity.

Operable shutters and louvres are to be incorporated into the overall design of the building where noise

and light sources are likely to affect the future residents. Living room and bedroom zones are indicated on Figure 3.8.

Where this cannot be achieved, double-glazed openings and other techniques should be used to provide acoustic amenity.

Consideration must also be given to the likely impacts of fumes and odours from both heavy vehicles and the adjoining light industrial area.

3.8. VIEWS

The primary outlook of the site is to the Parramatta CBD to the south, whilst secondary views are available to the north-east over the school ground and the Darling Mills Creek corridor, as indicated in Figure 3.8.

It is proposed to maximise the use of these views through appropriate building orientation, building separation and stepping of building heights to encourage view sharing.

3.9 LOT 3 DP 1158967, 23 NORTH ROCKS ROAD, NORTH ROCKS

That part of the site consisting of Lot 3 DP 1158967, 23 North Rocks Road is constrained by a number of features including flooding, riparian protection zone, the petroleum products pipeline easement, setbacks to James Ruse Drive and the need to provide access to the remainder of the target site.

This land is to be amalgamated with Lot 100 DP 1128357, 25 North Rocks Road to create an enlarged and cohesive target site since it is not suitable to accommodate separate residential development. The land is suitable for the provision of the access road, substantial deep soil planting and riparian regeneration in order to provide a buffer between the residential built form and James Ruse Drive.

Part of this land may also accommodate at-grade, short term parking (pick-up / drop-off, loading and deliveries) and the like to enhance the design and function of the building entrance, and assist in the creation of a sense of address.

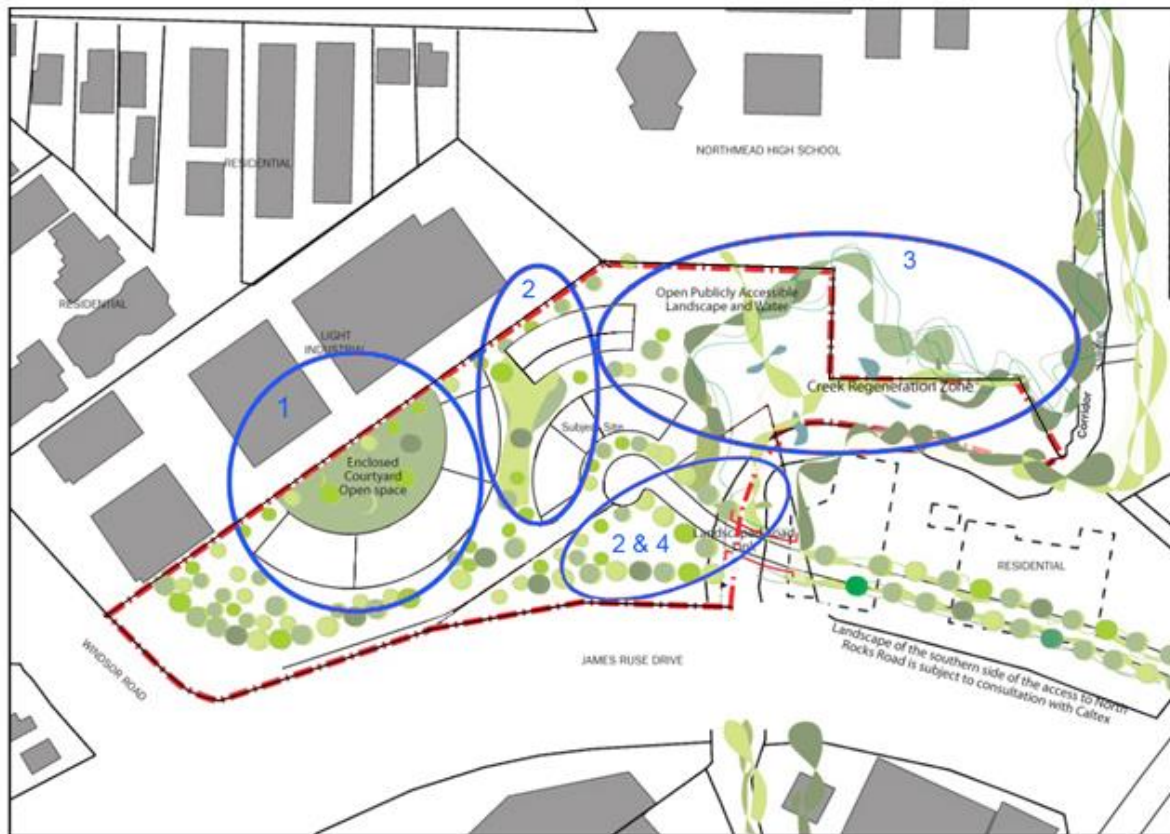


Figure 3.7 Open space / Deep zones

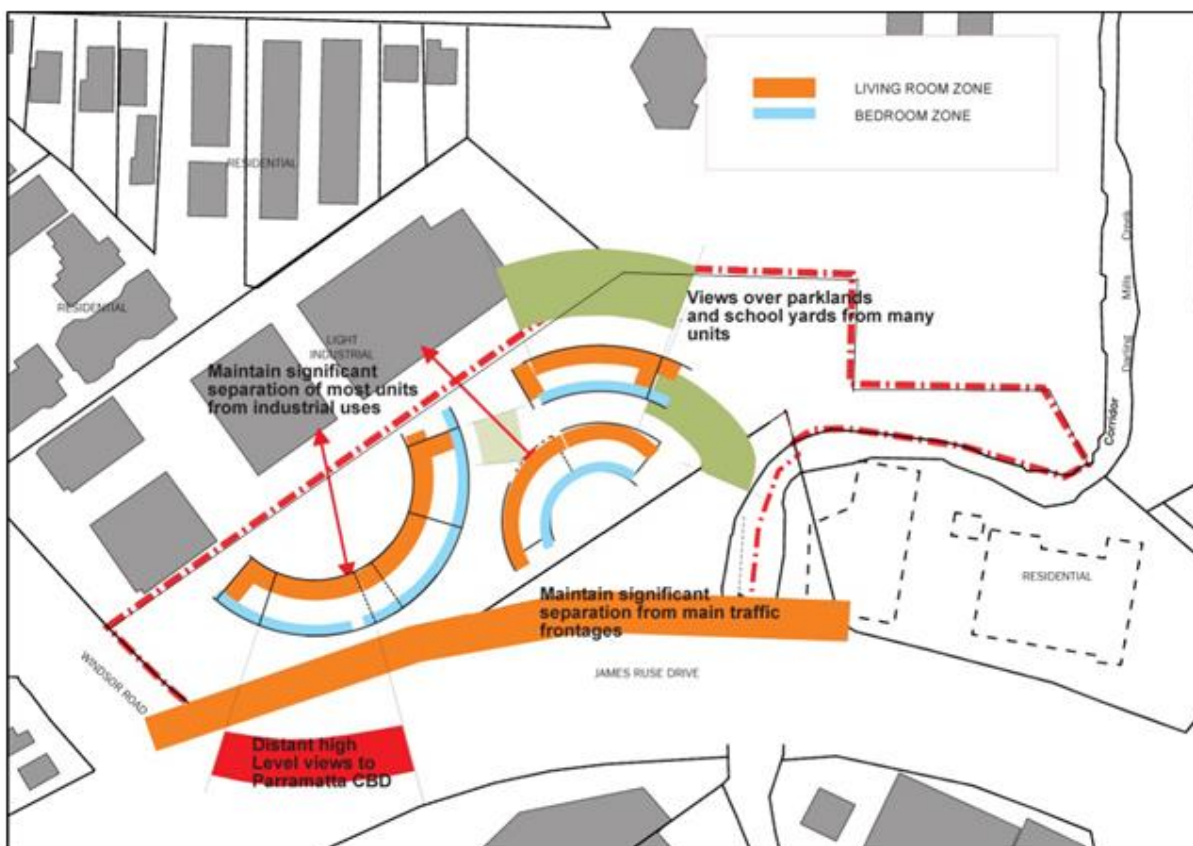


Figure 3.8 Living room zones and views

4. OBJECTIVES AND DEVELOPMENT CONTROLS

Objectives and Development Controls for the future development of the site are set out in the following sections, and are based on the development framework identified in part 3 of this Section of the DCP. Compliance with the controls will not necessarily ensure the approval by Council of any application. Each application will be considered on the individual circumstances and merits of the case in terms of the achievement of the objectives.

The controls in this part are not an exhaustive list of the controls applicable to this site. In addition to those policies, guidelines and documents specified in Part A – Introduction Section 1.4 of this DCP, this target site Section is to be read in conjunction with other relevant Sections including:

- Part B Section 5 – Residential Flat Buildings
- Part C Section 1 – Parking
- Part C Section 6 – Flood Controlled Land

4.1. BUILT FORM

4.1.1. SITE PLANNING AND SUBDIVISION

OBJECTIVES

- (i) *To achieve coherent site planning and development that relates to the natural typography and environmental constraints on the site.*
- (ii) *To provide for the effective management of communal spaces within the development.*
- (iii) *To provide for the orderly development of the target site and enhanced urban design through the amalgamation of sites.*
- (iv) *To ensure the amenity of future residents by concentrating all residential development within Lot 100 DP 1128357, 25 North Rocks Road.*

DEVELOPMENT CONTROLS

- (a) Future development to be located generally in accordance with Figure 4.2.
- (b) Subdivision of development on the site shall provide for the effective management of common open space areas and facilities and shall generally be in the form of strata title or community title or a combination of both.
- (c) Lot 3 DP 1158967, 23 North Rocks Road and Lot 100 DP 1128357, 25 North Rocks Road must be amalgamated prior to or concurrent with the granting of consent for any development in accordance with the provisions of this Section of the DCP.
- (d) Any consent for residential development on Lot 3 DP 1158967, 23 North Rocks Road, North Rocks must be surrendered prior to or concurrent with the granting of consent for any development in accordance with the provisions of this Section of the DCP.

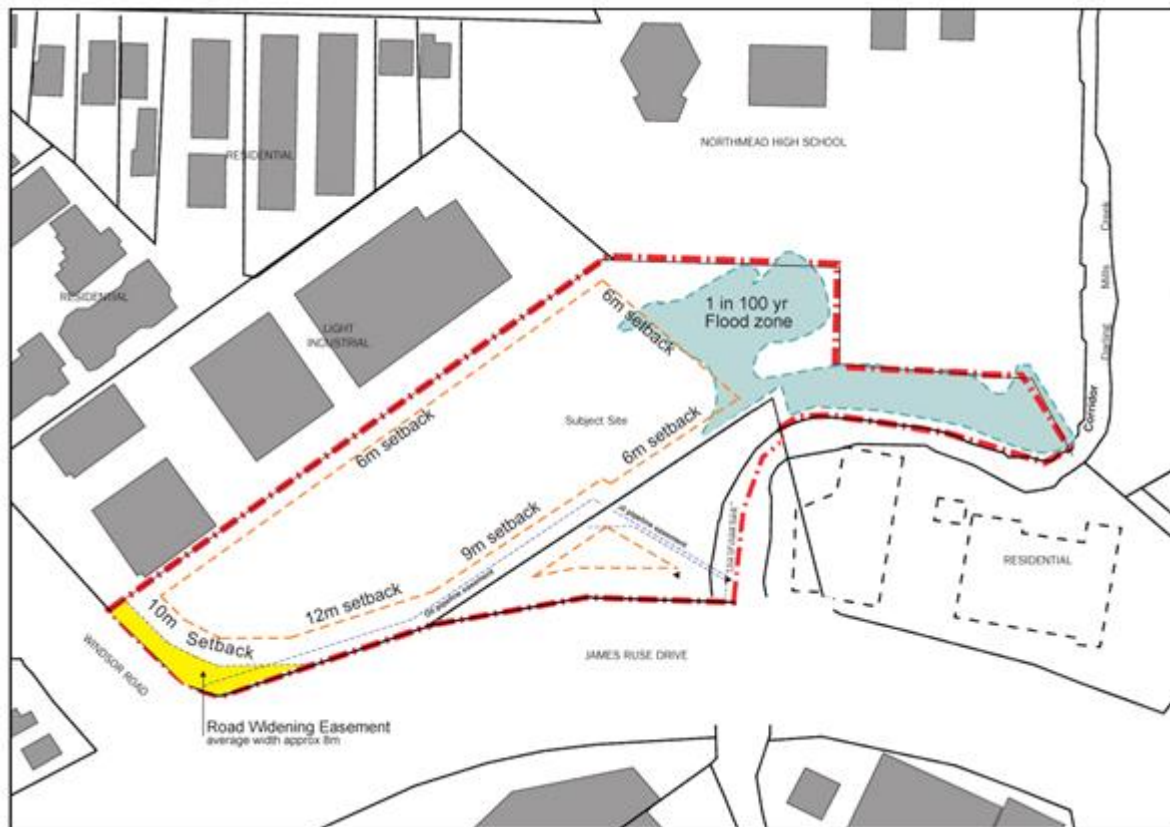


Figure 4.1 Setbacks

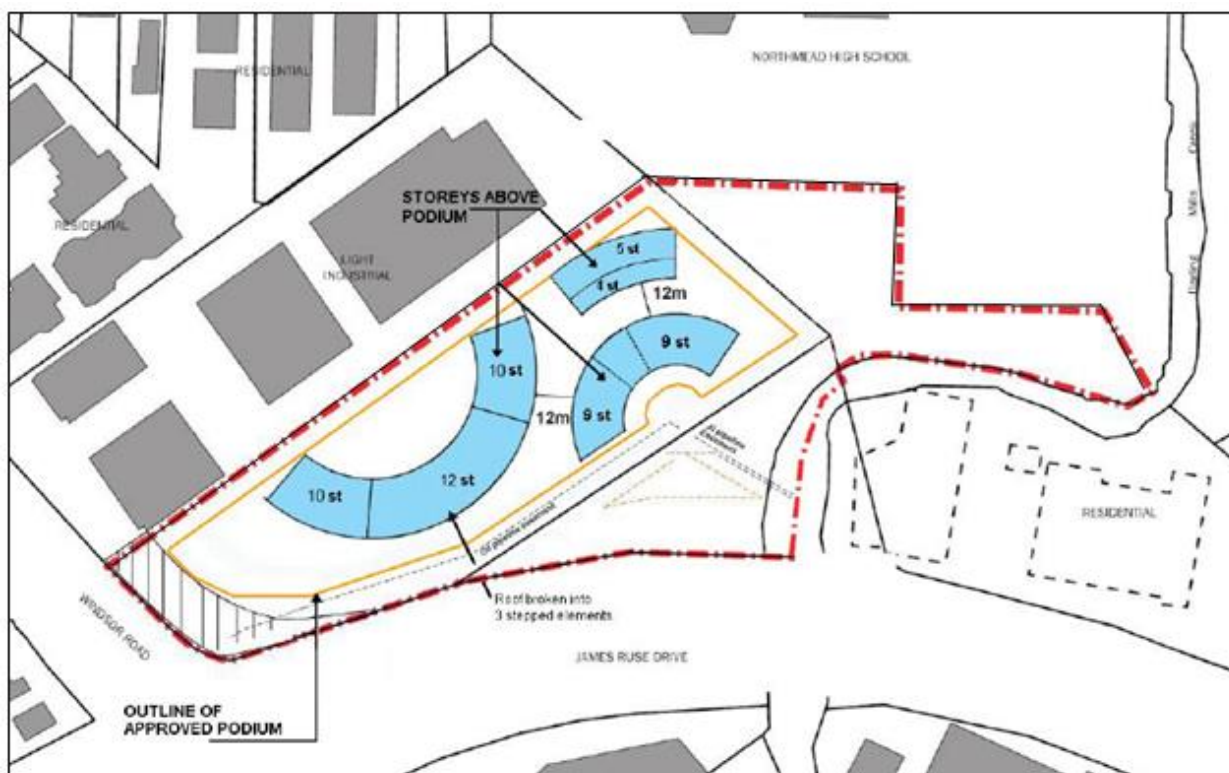


Figure 4.2 Building heights

4.1.2. SETBACKS

OBJECTIVES

- (i) *To provide setbacks that complement the setting, which allow flexibility in siting of buildings and allow for landscaping and common open space around new buildings.*
- (ii) *To minimise overshadowing and protect the visual quality of open space areas and the creek regeneration area (riparian corridor).*

DEVELOPMENT CONTROLS

- (a) Buildings are to be set back in accordance with Figure 4.1 and:
- (b) A minimum of 10 metres to the proposed realignment of Windsor Road pursuant to the Land Reservation Acquisition Map of the Local Environmental Plan 2012.
- (c) A minimum of 12 metres to James Ruse Drive.
- (d) A minimum of 6 metres to side and rear boundaries.
- (e) A minimum of 9 metres to the south-eastern boundary to the extent that the oil pipeline runs along the boundary.
- (f) A core riparian corridor is to be provided along Darling Mills Creek, with a minimum width of 20 metres from the top of bank (widening up to 30 metres where the 1:100 flood line exceeds 30 metres from the top of bank), with a 10 metre buffer.
- (g) No balcony shall project into the setback area.

4.1.3. HUNTER PIPELINE EASEMENT & AGL GAS MAIN

OBJECTIVE

- (i) *To preserve the integrity of the Hunter Pipeline easement and AGL gas main.*

DEVELOPMENT CONTROLS

- (a) The applicant is required to consult with Caltex Australia Petroleum Pty Ltd and AGL with respect to the location of any proposed structure or building on or in the vicinity of the pipeline or gas main.

- (b) Evidence of consultation and the concurrence of Caltex Australia Petroleum Pty Ltd and AGL is to be submitted with any development application.

4.1.4. BUILDING AND CEILING HEIGHTS

OBJECTIVES

- (i) *To ensure future development responds to the desired scale and character of the street and local area.*
- (ii) *To minimise overshadowing of adjoining properties and open spaces.*
- (iii) *To facilitate better natural daylight access into the depths of residential flats.*
- (iv) *To facilitate well-proportioned rooms within residential flats, and to increase the sense of space within them.*
- (v) *To create a suitable landmark building which will help to reinforce the main southern gateway to the Hills Shire.*
- (vi) *To provide adequate clearance at the ground level to all buildings to permit a flexibility in the use of ground floor spaces.*

DEVELOPMENT CONTROLS

- (a) Buildings on the site are to comply with the maximum height in storeys as illustrated in Figure 4.2 and:
 - A maximum of 12 storeys adjacent to the intersection of Windsor Road and James Ruse Drive, stepping down to 10 storeys adjoining the north-western boundary.
 - A maximum of 5 storeys to the north-eastern boundary to the school.
 - A maximum of 9 storeys across the middle of the site.
- (b) The following minimum ceiling heights are to be complied with:
 - All ground floors - Minimum of 3.3 metres floor to finished ceiling height (to promote solar access to ground floor residential flats, to provide articulation of the building facade and to promote the possibility of flexibility of use); and
 - All other floors - Minimum of 2.7 metres floor to finished ceiling height.

4.1.5. BUILDING SEPARATION

OBJECTIVES

- (i) *To ensure that new development is scaled to support the desired area character with appropriate massing and spacing between buildings.*
- (ii) *To control overshadowing of adjacent properties and private or shared open space.*
- (iii) *To allow for the provision of open space with appropriate size and proportion for recreational activities for building occupants.*
- (iv) *To provide deep soil zones for the establishment of tree planting and storm water management, where contextual and site conditions allow.*

DEVELOPMENT CONTROLS

The following minimum rules of building separation are to be complied with:

- (a) Up to 4 storeys (up to 12 metres)
 - 12 metres between habitable rooms.
 - 9 metres between habitable rooms/balconies and non-habitable rooms.
 - 6 metres between non-habitable rooms.
- (b) 5-8 storeys (up to 25 metres)
 - 18 metres between habitable rooms.
 - 13 metres between habitable rooms/balconies and non-habitable rooms.
 - 9 metres between non-habitable rooms.
- (c) 9 storeys and above (over 25 metres)
 - 24 metres between habitable rooms.
 - 18 metres between habitable rooms/balconies and non-habitable rooms.
 - 12 metres between non-habitable rooms.

4.1.6. BUILDING DEPTH

OBJECTIVES

- (i) *To provide adequate amenity for building occupants in terms of solar access and natural ventilation.*
- (ii) *To provide for dual aspect/cross ventilated residential flats.*

DEVELOPMENT CONTROL

- (a) Building depth is to be a maximum of 18 metres, except for balconies, fin walls, parapets and

awnings which may project up to 2 metres beyond the wall of buildings.

4.1.7. BUILDING FACADES

OBJECTIVES

- (i) *To promote high architectural quality in buildings.*
- (ii) *To ensure that building elements are integrated into the overall building form and façade design.*
- (iii) *To ensure buildings respond to environmental conditions such as noise, sun, breezes, privacy and views.*
- (iv) *To promote integration of building and private open space.*

DEVELOPMENT CONTROLS

- (a) Columns, beams, floor slabs, balconies, window openings and fenestration, doors, balustrades, roof forms and parapets, should be used to create interest in the façade.
- (b) Facades are to be composed with an appropriate scale and proportion, which respond to building use and the desired character by:
 - Expressing the internal layout of the building, for example, vertical bays or its structure.
 - Articulating building entries with awnings, porticos, recesses, blade walls and projecting bays.
 - Selecting balcony types which respond to the street context, building orientation and residential amenity. Cantilevered, partially recessed, or wholly recessed will all create different façade profiles.
 - Using a variety of window types to express the various elements of new buildings.
 - Incorporating architectural features which give human scale to the design of the building at street level. These can include entrance porches, awnings, colonnades, pergolas and fences. Recessed balconies and deep windows may be used to create articulation and define shadows, thereby adding visual depth to the façade.
- (c) Facade design is to reflect the orientation of the site using elements such as sun shading as environmental controls, depending on the façade orientation.

- (d) Building services such as drainage pipes are to be coordinated and integrated, with the overall façade and balcony design.
- (e) The top 3 storeys and the lowest 1-2 storeys of any building are to be sufficiently articulated (through varied setbacks, architectural treatments, materials and/or colours) so that they can be read as separate elements of the building.

4.1.8. ROOF DESIGN

OBJECTIVES

- (i) *To provide quality roof designs, which contribute to the overall design and performance of residential flat buildings.*
- (ii) *To increase the longevity of the building through weather protection.*
- (iii) *To create interest and variety in the streetscape.*

DEVELOPMENT CONTROLS

- (a) The roof is to be compatible with the size and scale of the building and the building elevations. This includes the design of any parapet or terminating elements and the selection of roof materials.
- (b) Roof design is to respond to the orientation of the site, for example, by using eaves and skillion roofs to respond to sun access.
- (c) Service elements are to be integrated into the design of the roof. These elements include lift over-runs, service plants, vent stacks, gutters and downpipes.
- (d) The use/future use of the roof for sustainable functions is to be facilitated by:
 - Allowing rainwater tanks for water conservation.
 - Suitability for photovoltaic applications.
 - Allowing for future innovative design solutions, such as water features or green roofs.
- (e) Copying of elements and detailing of detached dwellings is to be avoided as this often results in inappropriate proportion, scale and detail for residential flat buildings.

4.1.9. DENSITY

OBJECTIVES

- (i) *To ensure that residential flat building development does not over-tax services and facilities.*
- (ii) *To provide residential flat buildings with a high level internal amenity.*
- (iii) *Maximise the utilisation of public transport facilities.*

DEVELOPMENT CONTROLS

- (a) No more than 328 residential flats may be provided on the site.

4.1.10. RESIDENTIAL FLAT MIX

OBJECTIVES

- (i) *To provide a mix of residential flat types and size to accommodate a range of household types.*
- (ii) *To ensure that individual units are of a size suitable to meet the needs of residents.*

DEVELOPMENT CONTROLS

- (a) A minimum of 10% of the residential component of the development is to comprise studio or 1 bedroom residential flats.
- (b) A minimum of 10% of the residential component of the development is to comprise 3 bedroom residential flats.
- (c) Development should comply with the minimum unit floor area for Part B Section 5 - Residential Flat Buildings.

4.1.11. VISUAL AND ACOUSTIC PRIVACY

OBJECTIVES

- (i) *To provide reasonable levels of visual privacy externally and internally, during the day and at night.*
- (ii) *To maximise outlook and views from principal rooms and private open spaces without compromising visual privacy.*
- (iii) *To incorporate appropriate materials and construction techniques to minimise acoustic*

impacts from Windsor Road, James Ruse Drive and the adjoining industrial area.

DEVELOPMENT CONTROLS

- (a) New development is to be located and oriented to maximise visual privacy between buildings on site and adjacent buildings.
- (b) Building layouts are to be designed such that direct overlooking of rooms and private open spaces is minimised in residential flats by:
 - Separating communal open space, common areas and access routes through the development from the windows of rooms, particularly habitable rooms.
 - Changing the level between ground floor residential flats with their associated private open space, and the public domain or communal open space.
- (c) Building and site design are to increase privacy without compromising access to light and air by:
 - Offsetting windows of residential flats in new development from adjacent development windows.
 - Location of windows between habitable rooms to avoid direct overlooking.
 - Recessing balconies and/or vertical fins between adjacent balconies.
 - Using solid or semi-solid balustrades to balconies.
 - Using louvres or screen panels to windows and/or balconies.
 - Providing appropriate fencing.
- (d) Conflicts between noise, outlook and views are to be resolved by using design measures such as double glazing, operable screens to balconies and continuous walls to ground level courtyards where they do not conflict with streetscape or other amenity requirements.
- (e) Developments are to be designed to minimise noise transition between residential flats by locating similar uses next to each other and by using storage or circulation zones within an residential flat building to buffer noise from adjacent residential flats, mechanical services or corridors and lobby areas and minimising the amount of party (shared) walls with other residential flats.
- (f) Dividing walls and floors between dwellings shall be constructed to limit noise transmission to 45

STC (Sounds Transmission Class) in accordance with Part F (5) of the Building Code of Australia.

- (g) An Acoustic Report/Noise Impact Assessment is to be submitted with a development application for the residential use of the site. The report is to address and make recommendations with regard to noise and vibration generated by heavy vehicles and the adjoining light industrial area, and from Windsor Road and James Ruse Drive. The recommendations of the report are to be incorporated into the design and construction of the development through appropriate noise shielding and attenuation techniques.
- (h) Dwellings that adjoin arterial roads are to be designed to acceptable internal noise levels, based on AS 3671- Road Traffic Noise Intrusion Guidelines.
- (i) The buildings shall be designed and constructed to comply with the following criteria for all noise intrusion from external sources (including mechanical services from within the development itself), with windows and doors closed: -

Internal Space	Time Period	Repeatable Maximum* LAeq (1 Hour)
Living Areas	Day or night	≤ 35 dB(A)
Sleeping Areas	Day (7am to 10pm)	≤ 35 dB(A)
Sleeping Areas	Night (10pm to 7am)	≤ 35 dB(A)

*Repeatable Maximum is the highest tenth percentile hourly A-weighted LAeq noise level.

- (j) The buildings shall be designed to minimise noise from known noise sources at any time and as far as possible minimise noise entering open windows and doors.

4.2. LANDSCAPING

4.2.1. LANDSCAPE DESIGN AND OPEN SPACE

OBJECTIVES

- (i) *To ensure that landscaping and open space design complements the environmentally sensitive nature of the site.*
- (ii) *To enhance residents' quality of life by providing privacy, pleasant outlook, views and a range of open spaces.*
- (iii) *To provide habitat for native indigenous plants and animals.*
- (iv) *To improve stormwater quality and reduce quantity of run off.*
- (v) *To improve the microclimate and solar performance within the development.*
- (vi) *To not impact upon the continued use of the Hunter Pipeline.*
- (vii) *To enhance the amenity and appearance of the development when viewed from James Ruse Drive by providing significant landscaping that will act as a visual buffer.*

DEVELOPMENT CONTROLS

- (a) The amenity of open space is to be improved with landscape design by:
 - Providing appropriate shade from trees or structures.
 - Screening cars, communal drying areas, and courtyards of ground floor units.
 - Locating art works where they can be viewed by users of open space and/or from within residential flats.
- (b) The energy and solar efficiency of dwellings and the microclimate of private open spaces are to be improved by:
 - Incorporating trees which allow shading in summer and low angle sun penetration in winter on the eastern and western sides of a dwelling.
 - Varying heights of different species of trees and shrubs to shade walls and windows.
 - Locating pergolas on balconies and courtyards to create shaded areas in summer and private areas for outdoor living.

- (c) Landscape design is to contribute to water and stormwater efficiency by:
 - using plants with low water demand to reduce mains consumption.
 - using plants with low fertiliser requirements.
 - utilising permeable surfaces.
- (d) Vegetation selection is to consist of robust native species to reduce maintenance.
- (e) Private and common spaces are to be clearly defined.
- (f) Vegetation selection and placement is to reflect the scale of the proposed built form and maintain a human scale where possible.
- (g) Landscaping is to be enhanced along the road widening corridor, along the northern boundary and on Lot 3 DP 1158967 for improved visual amenity and privacy.
- (h) With the exception of the access road and minor short term pick-up and drop-off parking / loading area, Lot 3 DP 1158967, 23 North Rocks Road must be substantially landscaped (including the planting of mature trees that will grow to a height exceeding that of James Ruse Drive) to achieve an effective visual buffer between the development and James Ruse Drive.
- (i) Consultation is required with Caltex to consider landscaping opportunities on and adjacent to the Hunter Pipeline easement prior to the lodgement of any development application.
- (j) Open spaces are to be concentrated on the northern sides of the development, or orientated in a north-south alignment and on Lot 3 DP 1158967, 23 North Rocks Road.
- (k) A core riparian corridor is to be provided along Darling Mills Creek, with a minimum width of 20 metres from the top of bank (widening up to 30 metres where the 1:100 flood line exceeds 30 metres from the top of bank), with a 10 metre buffer. Existing trees and vegetation in this corridor and in the 1 in 100 year flood zone (below RL 16.7) are to be retained and re-vegetated where required, using native species from the local botanic provenance. Endemic riparian species that overhang the creek should also be used and emergent aquatic vegetation restored where possible. The additional 10 metres buffer zone is also to be predominantly vegetated but may contain minor paved areas.
- (l) Existing trees on site are to be retained where possible and replaced where necessary with

native species. In particular the stand of mature trees in the north-eastern portion of the site are to be retained to help maintain the existing ecological habitat and to enhance visual screening to the north.

- (m) The core riparian corridor and buffer is to function as an ecological system. All works, access routes (except elevated walkways where necessary), roads, recreational area, service easements and any other non-ecological functioning work or activity is to be located beyond the core riparian corridor. Minor paved areas are permitted within the buffer.
- (n) Artificial watercourses, water features and wetland structures are to be located outside of the core riparian corridor and buffer.
- (o) A detailed Landscape Plan is to be submitted with a development application.

4.2.2. DEEP SOIL ZONES

OBJECTIVES

- (i) *To assist with management of the water table.*
- (ii) *To assist with management of water quality.*
- (iii) *To improve the amenity of developments through the retention and/or planting of large and medium size trees.*
- (iv) *To provide a significant landscaped buffer to James Ruse Drive on Lot 3 DP 1158967.*

DEVELOPMENT CONTROLS

- (a) Deep soil zones are to be located adjacent to site boundaries to provide visual and acoustic privacy between the site and adjoining properties.
- (b) Deep soil zones are to be established through the middle of the site in accordance with Figure 4.3 (Deep Soil Zones) to provide visual and acoustic privacy internally to the development.
- (c) A minimum of 51% of the total site area (11,645m²) (including Lot 3 DP 1158967 and Lot 100 DP1128357) is to contain deep soil zones generally in accordance with Figure 4.3 (Deep Soil Zones).
- (d) Deep soil zones are to accommodate existing mature trees, as well as allow for planting of mature trees.

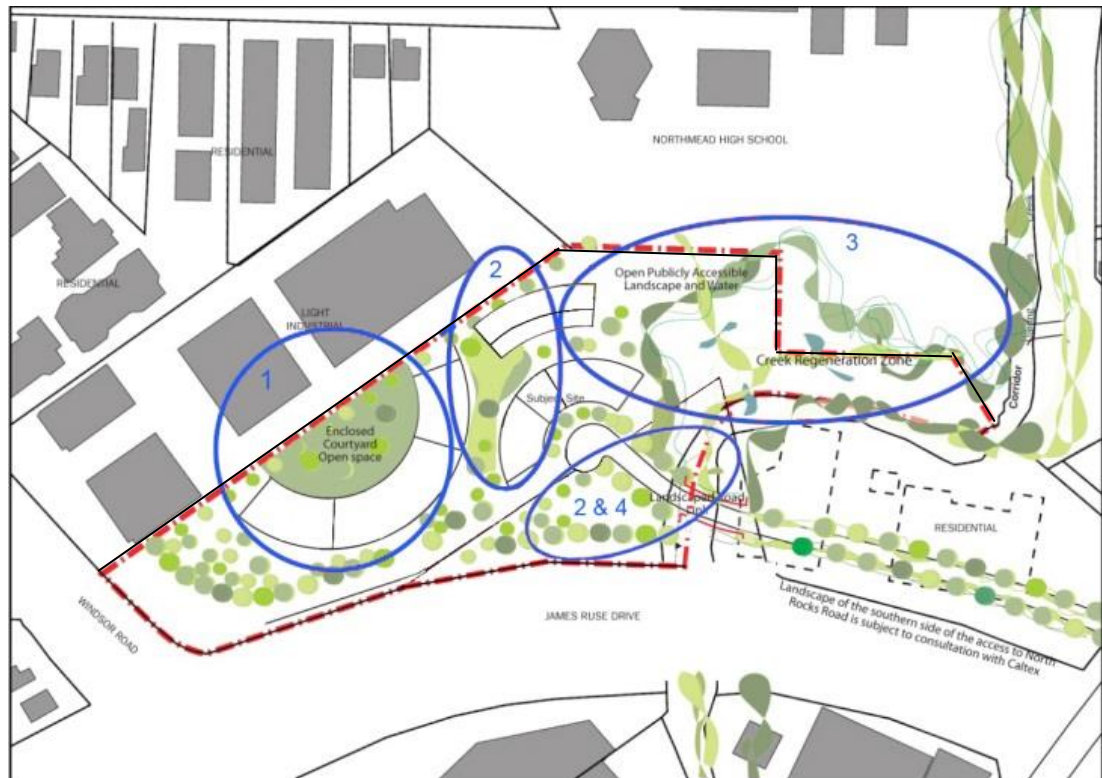


Figure 4.3 Deep Soil Zones

4.2.3. PLANTING ON STRUCTURES

OBJECTIVES

- (i) *To contribute to the quality and amenity of communal open space on roof tops, podiums, internal courtyards and basement structures.*
- (ii) *To encourage the establishment and healthy growth of trees in urban areas.*

DEVELOPMENT CONTROLS

- (a) Plant growth is to be optimised by:
 - providing soil depth, soil volume and soil area appropriate to the size of the plants to be established.
 - providing appropriate soil conditions and irrigation methods.
 - providing appropriate drainage.
- (b) Planters are to be designed to support the appropriate soil depth and plant selection by:
 - ensuring planter proportions accommodate the largest volume of soil possible.
 - providing square or rectangular planting areas, rather than long narrow linear areas.
- (c) Minimum soil depths are to be provided in accordance with the following:

Any subsurface drainage requirements are in addition to the minimum soil depths quoted above.

Large trees such as figs (16 metre canopy diameter at maturity)	
minimum soil volume	150 cubic metres
minimum soil depth	1.3 metres
minimum soil area	10 metre x 10 metre area or equivalent
Medium trees (8 metre canopy diameter at maturity)	
minimum soil volume	35 cubic metres
minimum soil depth	1 metre
approximate soil area	6 metre x 6 metre or equivalent
Shrubs	
minimum soil depth	500-600mm
Ground cover	
minimum soil depth	300-450mm
Turf	
minimum soil depth	100-300mm

4.3. ACCESS

4.3.1. VEHICULAR ACCESS

OBJECTIVES

- (i) *To ensure that vehicular access can be gained to the site from North Rocks Road, based on sound traffic management principles.*
- (ii) *To integrate adequate car parking and servicing access without compromising street character, landscape or pedestrian amenity and safety.*
- (iii) *To encourage the active use of street frontages.*
- (iv) *To enhance the function, visibility and accessibility of the building entrance by providing for a limited amount of short term parking and deliveries at ground level.*

DEVELOPMENT CONTROL

- (a) All vehicular access to the site is to be from North Rocks Road in accordance with Figure 4.5. The route taken should cause the least disturbance and impact to the core riparian corridor and buffer. The crossing of Darling Mills Creek must be bridged and its design sensitive to the ecology, wildlife corridor and geomorphic functions of the corridor. The crossing is also to be designed in accordance with The Department of Primary Industries (Office of Water) Guidelines for watercourse crossings on waterfront land.
- (b) Vehicular access to the site from North Rocks Road shall be achieved via the provision of a dual right turn lane generally in accordance with Figure 4.4. (Intersection Treatment). Detailed design plans shall be submitted to Council for approval prior to construction.
- (c) The creation of a Right of Carriageway (minimum 12 metres wide) over Lot 3 DP 1158967 in favour of Lot 100 DP 1128357) to contain the future access road and footpath alignment identified in Figure 4.4. (Access to Site).
- (d) Submission to Council of suitable documentary evidence that indicates the creation of a Right of Carriageway over Lot 3 DP 1158967, has been registered with the Land and Property Information, New South Wales (LPI).

- (e) Consultation and concurrence from Caltex is required for the design of the accessway from North Rocks Road, to ensure the Hunter Pipeline is maintained.
- (f) The design and configuration of access ways and driveways shall be in accordance with Part C Section 1- Parking.
- (g) Potential pedestrian/vehicle conflict is to be minimised by:
 - Limiting the width of vehicle access points.
 - Ensuring clear site lines at the pedestrian and vehicle crossing.
 - Separating and clearly distinguishing between pedestrian and vehicular access ways.
 - Provision of a separate pedestrian path of travel into Lot 3 DP 1158967 and along the vehicular accessway to ensure the safety and amenity of pedestrians.
- (h) The appearance of car parking and service vehicle entries is to be improved by:
 - Locating garbage collection, loading and servicing areas away from the street and/or providing screening.
 - Setting back or recessing car park entries from the main façade line.
 - Avoiding 'black holes' in the façade by providing security doors to car park entries.
 - Returning the façade material into the car park entry recess for the extent visible from the street as a minimum.
- (i) Driveway gradients shall be in accordance with Australian Standard – AS 2890.1 – 1993 – Part 1 – Parking Facilities – Off Street Car Parking.
- (j) In addition to significant landscaping and compliance with deep soil requirements, part of Lot 3 DP 1158967 is to be utilised to provide the development with a formal, external, at-grade 'address' and 'front door'. This area should accommodate a pick-up and drop-off area for residents, taxis and emergency vehicles with pedestrian shelter, a loading area for small deliveries and directional signage to all facilities, car parking areas and buildings. The area should be clearly marked as a set-down area to discourage use of the area for long term residential or visitor parking.

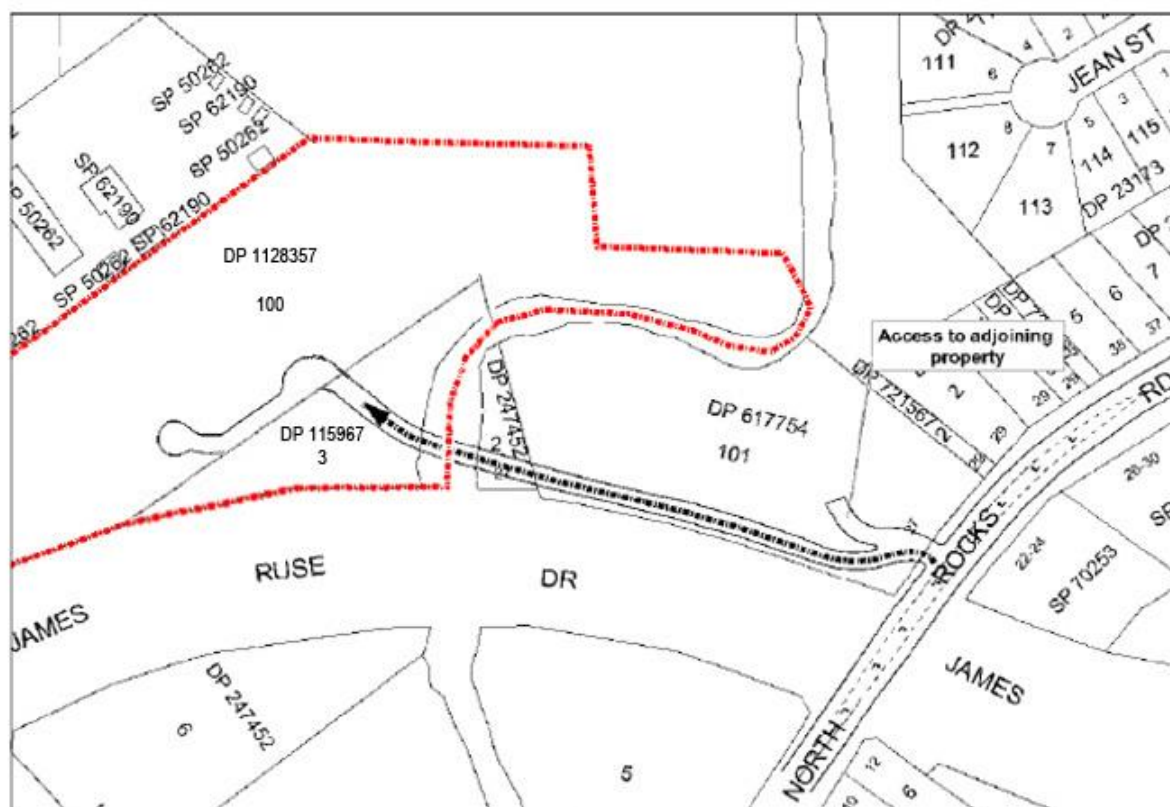


Figure 4.4. Access to site

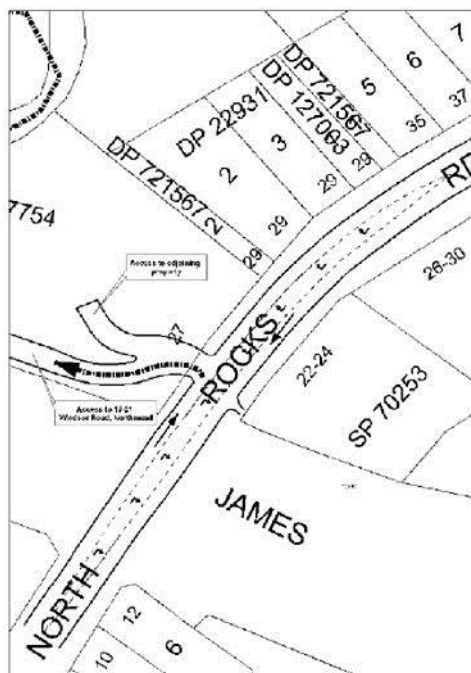


Figure 4.5 Intersection treatment

4.3.2. PEDESTRIAN ACCESS

OBJECTIVES

- (i) *To consider the needs of the residents with particular consideration to access requirements, safety and security.*
- (ii) *To ensure that appropriate pathways, with high levels of pedestrian amenity are provided for residents along identified desire lines.*
- (iii) *To ensure provision is made for bicycle access and storage.*

DEVELOPMENT CONTROLS

- (a) Pedestrian linkages are to be provided throughout the site generally in accordance with Figure 3.6 Access and Movement, including access to Windsor Road, and North Rocks Road. Consideration must also be given to a link to Northmead High School.
- (b) Pedestrian paths and cycleways through the site are to be located outside the core riparian corridor and protected waters. Where these must necessarily intrude into the core riparian corridor they must be elevated. Minor paved areas are permitted within the buffer. All non-vehicular paths and cycleways are to be

constructed in accordance with requirements of the Department of Primary Industries (Office of Water) for the design and construction of paths and cycleways in riparian areas.

- (c) All surfaces should be stable, even and constructed of slip resistant materials. Any stair nosings should have a distinctive colour and texture.
- (d) Pathway locations must ensure natural surveillance of the pathway from primary living areas of adjoining units. Dwelling entries must not be hidden from view and must be easily accessible.
- (e) A bicycle lock-up facility is to be provided close to the main entry to the buildings.

4.4. ECOLOGICALLY SUSTAINABLE DEVELOPMENT (ESD)

Whilst current ESD best practice should be accepted as a minimum requirement, all developments are encouraged to explore technologies and smart ways to improve energy efficiency, harness renewable energy on-site and conserve water.

4.4.1. SOLAR ACCESS

OBJECTIVES

- (i) *To ensure that daylight access is provided to all habitable rooms and is encouraged in all other areas of residential flat development.*
- (ii) *To provide adequate ambient lighting and minimise the need for artificial lighting during daylight hours.*
- (iii) *To provide residents with the ability to adjust the quantity of daylight to suit their needs.*
- (iv) *To protect the amenity of existing neighbouring developments.*
- (v) *To improve thermal efficiency of new buildings.*
- (vi) *To ensure that common open space areas receive a reasonable amount of sun light.*

DEVELOPMENT CONTROLS

- (a) Buildings are to be oriented so that solar access to buildings is optimised. Buildings are to be positioned within 30 degrees east and 20 degrees west of north, where possible, to maximise solar access.
- (b) Buildings are to be positioned to minimise their impact upon solar access to communal and public open spaces.
- (c) Existing constraints such as noise are to be taken into account in the orientation of buildings.
- (d) Solar access to internal living spaces and private open spaces is to be optimised by facing them to the north.
- (e) Living areas are to be located to the north and service areas to the south and west of the development as much as possible.
- (f) The number of south-facing residential flats is to be kept at a minimum and where they occur, their window area is to be maximised.
- (g) Two-storey and mezzanine ground floor residential flats are encouraged to facilitate enhanced daylight access to living rooms and private open spaces on the ground level where daylight access is limited.
- (h) Daylight access is to be ensured to habitable rooms and private open spaces, throughout the year.
- (i) Skylights, clerestory windows and fanlights are to be used to supplement daylight access.

- (j) Buildings are to be designed for shading and glare control, particularly in summer, by:
 - using shading devices, such as eaves, awnings, colonnades, balconies, pergolas, external louvers and planting.
 - optimising the number of north-facing living spaces.
 - providing external horizontal shading to north-facing windows.
 - providing vertical shading to east or west windows.
 - using high performance glass.
 - minimising external glare off windows by avoiding reflective films, using a glass reflectance below 20 percent.
- (k) Living rooms and private open spaces for at least 70 percent of residential flats in development are to receive a minimum of three hours direct sunlight between 9am and 3pm in mid-winter.
- (l) The common open space area must receive at least four hours of sunlight between 9am and 3pm on 21 June.

4.4.2. NATURAL VENTILATION

OBJECTIVES

- (i) *To ensure that residential flat buildings are designed to provide all habitable rooms with direct access to fresh air and to assist in promoting thermal comfort for occupants.*
- (ii) *To provide natural ventilation in non-habitable rooms, where possible.*
- (iii) *To reduce energy consumption by minimising the use of mechanical ventilation, particularly air conditioning.*

DEVELOPMENT CONTROLS

- (a) Development is to utilise natural breezes by:
 - orientating buildings to maximise use of prevailing breezes where possible.
 - locating vegetation to direct breezes and cool air as it flows across the site.
 - selecting planting or trees that allow for optimal airflow.
- (b) Building layout is to maximise the potential for natural ventilation through:

- facilitating cross ventilation by designing narrow building depths and providing dual aspect residential flats (eg cross through and corner residential flats).
 - facilitating convective currents by designing units which draw cool air in at lower levels and allow warm air to escape at higher levels (eg maisonette residential flats and two-storey residential flats).
- (c) The internal layout of residential flats are to be designed to promote natural ventilation by:
- minimising interruptions in air flow through an residential flat.
 - grouping rooms with similar usages together (eg. keeping living spaces together and sleeping spaces together).
- (d) Doors and windows are to maximise natural ventilation by:
- locating small windows on the windward side and larger windows on the leeward side of the building thereby utilising air pressure to draw air through the residential flats.
 - using higher level casement or sash windows, clerestory windows or openable fanlight windows (including above internal doors) to facilitate convective currents. This is particularly important in residential flats with only one aspect.
 - selecting windows whereby occupants can reconfigure to funnel breezes into the residential flats, such as vertical louvred, casement windows and externally opening doors.
- (e) Building depth is to be limited to 18 metre (glass line to glass line) to facilitate natural ventilation.

4.4.3. SITE CONTAMINATION

OBJECTIVE

- (i) *To ensure that the site is suitable for residential use.*

DEVELOPMENT CONTROLS

- (a) The site is to be fully remediated in accordance with the Remediation Action Plan prepared by EIS dated October 2005. All contaminated fill is to be removed from the site.
- (b) A Validation Report and clearance documentation are to be submitted to Council

upon completion of the remediation, including evidence of disposal location and volumes of disposed material.

4.5. STAGING OF DEVELOPMENT

Development approval for the Target Site must have appropriate regard to the amenity of the adjoining residential development known as 27-33 North Rocks Road, North Rocks. Accordingly, any development application for the residential development of Lot 100 DP1128357 shall have regard to the access requirements for development of the site.

OBJECTIVES

- (i) *To ensure the orderly and economic development of the Target Sites known as 23-25 North Rocks Road, North Rocks and 27-33 North Rocks Road, North Rocks.*
- (ii) *To ensure that the proposed access road from North Rocks Road is achieved prior to the construction of residential units.*

DEVELOPMENT CONTROLS

- (a) Construction of the residential component of Lot 100 DP 1128357 shall not commence until the construction of an approved access carriageway and bridge over Darling Mills Creek in accordance with Figure 4.3 is achieved.

Access onto Lot 3 DP 1158967 and Lot 100 DP 1128357 shall be provided via Windsor Road during the construction of residential units. Where this access cannot be provided, access is to be provided from North Rocks Road.

