Environmental Assessment
120-128 Herring Road, Macquarie Park

Application Numbers
Concept Plan MP 09–0195
Project Application (Staged Subdivision) MP 09–0217
Project Application (Building A) MP 09–0218

May 2010

ENVIRONMENTAL ASSESSMENT

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Report Number	Friday 7 May 2010 -Final

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Statement of Validity

Submission of Environment Assessment:

Prepared under Part 3A of the Environmental Planning and Assessment Act 1979.

Environmental Assessment prepared by:

Name:	Stephen White (Associate Director)
Qualifications	BSc Economic Geography (UNSW) Master in Urban Development and Design (UNSW)
Address:	Urbis Pty Ltd. Level 21, 321 Kent Street Sydney NSW 2000
In respect of:	128 Herring Road, Macquarie Park

Applicant and Land Details

Applicant:	Lipman Properties Pty Ltd
Applicant Address:	Level 6, 66 Berry Street North Sydney NSW 2060
Subject Site:	120-128 Herring Road, Macquarie Park
Land to be developed:	As above
Lot and DP	Lot B in DP 368446 and part of Lot 1 in DP 876482
Project Summary:	Concept Plan application for the construction of a mixed use residential/retail development with associated car parking and public domain works. Concurrently, a Project Application for the Staged-Subdivision for all stages within the Concept Plan, and a Project Application for the construction of Building A and its associated works.

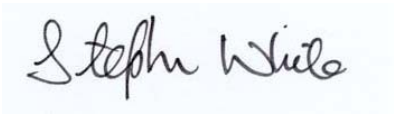
Environmental Assessment

An Environmental Assessment is attached.

Declaration

We certify that the contents of the Environmental Assessment to the best of our knowledge, has been prepared as follows:

- In accordance with the requirements of the Environmental Planning and Assessment Act 1979 and Environmental Planning and Assessment Regulations 2000; and
- The information contained in this report is true in all material particulars and is not misleading.

Signature: 

Name: Stephen White

Date: 7 May 2010

Signature: 

Name: Danielle Pinkerton

Date: 7 May 2010

Executive Summary

This Environmental Assessment Report and accompanying Appendices have been prepared on behalf of Lipman Properties Pty Ltd in support of a Concept Plan and two Project Applications submitted in accordance with Part 3A of the *Environmental Planning and Assessment Act 1979* for land at 120-128 Herring Road, Macquarie Park.

The proposal seeks approval of the following three Part 3A applications, submitted for concurrent assessment and approval:

1. Concept Plan approval for the height, bulk and configuration of 5 residential apartment buildings on separate allotments with associated components such as a new local access road, landscaping and car parking.

2. Project Application for the staged Subdivision of the Development Site which will result in 7 allotments at completion of the Concept Plan development, with each of the 5 residential apartment buildings on 5 separate allotments and the new local access road on 2 allotments (to be dedicated to Council upon completion of the road).

3. Project Application approval for the construction of Building A, and the construction of the south-eastern portion of the new local access road along the south frontage of Building A and a temporary sales and marketing office.

The proposed land uses are permissible within the zone under the Ryde Planning Scheme Ordinance.

The Development Site is a 1.717ha portion of land within the 4.773ha Morling College total site, with a 120 metre frontage to Herring Road and University Creek running across the rear. The Development Site is situated directly adjacent to the Macquarie University, within the university superblock.

Macquarie Park is a Specialised Centre undergoing significant transformation

- The Macquarie Park Corridor is the northern anchor of the “Global Economic Corridor” and accordingly has a state directed vision to transform Macquarie Park into a major multi-functional centre of employment, technology, enterprise and education.
- Macquarie Park is identified in the Inner North Subregional Strategy as a “Specialised Centre” which has a target to increase employment by 23,000 jobs and commercial floorspace by 900,000sqm by 2031. Student numbers at the University are also planned to increase significantly through the approved expansion of the campus. Thus future expansion of the Macquarie Park Corridor will continue to strengthen the state and regional significance of this major multi-faceted centre to the NSW Economy.
- The University Concept Plan includes approval is evidence of the transformation which will translate into an additional:
  - 61,200sqm of academic GFA within the Academic Core.
  - 400,000sqm of commercial GFA and parking outside the Academic Core.
  - 3,450 beds within the University Housing Precinct for University purposes only.
  - Building heights from 16 to 108 metres along Herring Road frontage.

Development Site is ideal for quality residential apartment living

- The assessment has demonstrated that the site is highly suitable for residential apartment living, given it is only 250 metres walking distance to the Macquarie university train station, metropolitan business services and regional shopping facilities.
- The project will deliver residential development on one of the few consolidated development sites available and suitably located within the Macquarie Park Corridor that can support residential use.

The Concept Plan positively responds to the site conditions and future urban morphology

- The design has been derived having regard to:
  - The existing site conditions – including the prevailing slope, street frontage presentation, pedestrian networks and environmental constraints.
  - The current and planned applicable local statutory controls.
  - The state strategic planning directions – including the relevant actions and targets within the State Plan and Subregional Strategy.
  - The current and future local urban context – focusing on the Macquarie University Concept Plan approval and future intensification of surrounding development arising from the gazettal of the Draft Ryde LEP 2008.
  - The resultant implications of the Concept Plan for the future resident and public domain amenity in and surrounding the site.

The overall development outcomes align with local and state policy

- The assessment concludes that the proposal positively responds to the Development Site's strategic location and will result in positive economic, environmental and social benefits to the community.
- It responds to the development up-lift anticipated across the Macquarie Park Corridor, particularly within close proximity to the 'special precincts' which surround each of the new train stations, including the Macquarie University Train Station.
- Increases the provision of future housing stock to achieve the State Plan objective of providing *'jobs closer to home'* within the Macquarie Park Corridor.
- It will accommodate building mass without adversely impacting on amenity of surrounding land uses.
- It will provide approximately 557 new residential dwellings to assist in the achievement subregional housing stock targets of an additional 30,000 dwellings within the Inner North Subregion by 2031, including 12,000 dwellings within the Ryde LGA.
- It positively responds to the existing and future building heights addressing Herring Road which dramatically fluctuated while tapering upwards between Epping Road and Waterloo Road, and frames the Herring Road vista approach to the Macquarie University Train Station precinct centre.
- It will contribute to creating of a strong streetscape along Herring Road which is the major north-south axis to the Macquarie University Station Precinct, framing the entry to punctuate the 'sense of arrival' by increasing the height of buildings towards the precinct centre.
- Contributes to a range of public domain improvements including:
  - Construction of a new boulevard which will contribute to achieving a finer grain vehicle, bicycle and pedestrian connection through the Macquarie Park Corridor.
  - Regeneration of the riparian corridor along University Creek which will contribute to the creation of a linear open space network running parallel to the creek, and provides scope for adjacent properties to regenerate the riparian corridor within their properties.
  - Providing scope to expand the pedestrian and bicycle network through the Development Site to connect with existing and future pedestrian and bicycle paths.

For these reasons, the Concept Plan represents an appropriate development outcome for the Development Site, and therefore it is requested that the Minister approve the Concept Plan, Project Application for Staged-Subdivision and Project Application for Building A.

1 Introduction

1.1 Background

This Environmental Assessment (EA) has been prepared on behalf of Lipman Properties Pty Ltd in association with a Part 3A application for the development of a residual part of the land at 120-128 Herring Road, Macquarie Park.

The Director-General of the Department of Planning issued correspondence on 15 December 2009 declaring the proposal to be a Project to which Part 3A of the Major Project SEPP (now known as the Major Development SEPP) applies. The Director-General also authorised the submission of a Concept Plan under Section 75M of the Environmental Planning and Assessment Act 1979.

This EA has been prepared in accordance with the provisions of Part 3A of the Act and the Director-General's Environmental Assessment Requirements (DGEARs) issued by the Department of Planning on 28 January 2010 as amended on 12 February 2010 attached in **Appendix A**..

1.2 Project Objectives & Need

The Development Site has been deemed surplus to the operational needs of Morling College (a Baptist Theological College), and subsequently Morling College has entered into an agreement to sell the site to Lipman Properties Pty Ltd to advance a residential development project. The proceeds from the sale will assist Morling College in its ongoing maintenance and improvements of its onsite campus facilities.

The objectives of the planning applications are:

- To allow for flexibility for future building design while providing certainty of the overall built-form outcomes through the development of a framework to guide the development of residential buildings and associated infrastructure on the site.
- To create the opportunity to construct a new residential development within the Macquarie Park Corridor. With limited opportunities for additional residential development sites within this corridor, this project is important to maintain a diversity of land uses and create opportunities for people to work or study close to home. The significance of achieving a land use balance is heightened by the substantial amount of future planned commercial and educational teaching floorspace in addition to the large office precinct and university campus that already exists within Macquarie Park.
- To take advantage of the proximity of new public railway infrastructure, creating a highly accessible location for future residents on the site as well as support the public investment in rail infrastructure.
- To contribute to creating a 'sense of arrival' to Macquarie Park from the south through distinct urban form that frames the Herring Road street vista.
- To conserve and enhance the environmental qualities of the vegetation on the site by committing to improve the ecological value of the vegetated buffer that follows both sides of University Creek.
- To enhance accessibility and permeability by providing the opportunity for the site to contribute to pedestrian and cycleway connections to the north into an existing "green" link running across several properties including the university.
- To provide housing products that meets the needs of the local market, aimed to appeal to the identified target markets in the surrounding community. Specifically, students and associated family members, young professionals, first and second home buyers, empty nesters and investors. The predominant influence being the youthful portion of the market (under 40).

1.3 Design Alternatives

Lipman Properties Pty Ltd formally sought a range of concept alternatives for the site by convening a design competition amongst four well regarded Australian architectural firms.

The entrants produced a range of development schemes for consideration. A summary of the key aspects of the design alternatives included:

- Subdivision of the site into multiple residential lots and design of up to 5 buildings.
- Creation of an aesthetically pleasing boulevard providing appropriate entry and exit access to Herring Road.
- Varied building forms with a range of height, mass and articulation, stepping buildings within increased height to the current proposal.
- A range of building orientations to Herring Road and the new boulevard.

Ultimately the scheme by Turner and Associates was successful as it was deemed to be a superior design scheme due to its responsiveness to the natural site conditions, and the future integration of the site with its local urban context. The creation of five residential buildings with interesting articulated facades and smart floorplates and the presentation of the development to Herring Road were superior design features to the other entrant designs.

1.4 Value of Project

Capital investment value (CIV) is defined in State Environmental Planning Policy (Major Development) 2005 as follows:

> *'capital investment value of development includes all costs necessary to establish and operate the development, including the design and construction of buildings, structures, associated infrastructure and fixed or mobile plant and equipment (but excluding GST, as defined by A New Tax System (Goods and Services Tax) Act 1999 of the Commonwealth, and land costs)'*

The CIV of the proposed Concept Plan is estimated at $150,557,038 million. A Quantity Surveyors report certifying CIV of the three applications being; the Concept Plan, Project Application for land subdivision and Project Application for Building A is attached in **Appendix B**.

1.5 Consultation

Lipman Properties Pty Ltd has held discussions with Ryde Council's planning officers about the proposed development scheme plans over a significant timeframe to gain an understanding of the Council's position on a range of related issues.

As a result of the changes to the SEPP (Major Development) 2005, which meant that the project must be assessed under the provisions of Part 3A of the Act, the proponent met with Council to discuss the Concept Plan proposed to be lodged with the Department of Planning.

A preliminary briefing was held with Department of Planning officers on 10th September 2009 to discuss the proposal prior to lodgement of the Clause 6 request and Preliminary Environmental Assessment.

Furthermore, the proponent has also discussed the proposal with the two adjoining land owners being Morling College and Macquarie University.

In addition to the preliminary discussions with Council, the Department of Planning and adjoining land owners, the consultant team have had initial discussions with other statutory agencies, as required.

Following public exhibition of the Concept Plan and the two Project Applications, any submissions received will be reviewed and addressed in the Preferred Project Report.

1.6 Director-General's Environmental Assessment Requirements

The following table provides a summary of the Director-General's Environmental Assessment Requirements (DGEARs) issued by the Department of Planning on 28 January 2010 and modified on 12 February 2010. The table also identifies where each requirement has been addressed within the Environmental Assessment report.

A copy of the DGEARs is attached as **Appendix A**.

Table 1 – Response to Director General's Environmental Assessment Requirements

ENVIRONMENTAL ASSESSMENT REQUIREMENT	EA REPORT REFERENCE
KEY ISSUES	
1. Consideration of relevant EPI's Policies and Guidelines	**Section 4**
2. Built Form Urban Design/Public Domain	**Section 5.1**
3. Staging	**Section 3.2.5**
4. Land Use	**Section 3.2.1 + Section 5.1**
5. Transport and Accessibility Impacts (Construction and Operational)	**Section 5.2 + Appendix K**
6. Environmental and Residential Amenity	**Section 5.3 + Appendix D**
7. Car Parking	**Section 5.2.5 + Appendix K**
7. Ecologically Sustainable Development (ESD)	**Section 5.6 + Appendix F**
8. Flora and Fauna	**Section 5.7 + Appendix O**
9. Contributions	**Section 4.3.7 + Appendix C**
10. Consultation	**Section 1.5**
11. Drainage and Stormwater Management	**Section 5.8 + Vol of Plans Part 4**
12. Groundwater Management	**Section 5.9+ Appendix S**
13. Utilities	**Section 5.11 +Appendix G,H,I**
14. Noise Assessment	**Section 5.5 + Appendix L**
15. Draft Statement of Commitments	**Section 5.16 +Appendix C**

1.7 Proponent and Project Team

The Environmental Assessment has been prepared on behalf of Lipman Properties Pty Ltd, the proponent of the project. The specialist consultant team include:

▪ Turner and Associates	Architecture and Master Planning
▪ Urbis	Urban Planning
▪ Turf	Landscape Architecture
▪ Total Earth Care	Ecological
▪ Treescan	Arborist
▪ Cundall	ESD
▪ Colston Budd Hunt and Kafes	Transport, Traffic and Car Parking
▪ Renzo Tonin	Acoustic
▪ Accessibility Solutions	Access
▪ Douglas Partners	Geotechnical & Contamination
▪ TTW	Civil Engineering
▪ Harris Page	Hydraulic and Gas
▪ ITC	Electrical and Utilities
▪ Knox	Mechanical
▪ Bonacci	Structural
▪ Vic Lilly & Partners	BCA/PCA
▪ Denny Linker	Surveyor

2 Site Context and Analysis

2.1 Site Description

Lipman Properties Pty Limited (LPPL) has secured control over a 1.7173ha parcel of land that is currently part of the 4.773ha Morling College site at 120 -128 Herring Road, Macquarie Park. The existing land to be affected by this application is currently known as Lot B in DP368446 (1.312ha) and part of Lot 1 in DP876482 (3.461ha) and is owned by the Baptist Union of NSW.

The part of the existing land that is subject of this application is referred to as “The Development Site” with the residual land retained by Morling College for ongoing theological and educational purposes is referred to as the “College Land” (3.0557ha).

The Development Site has an irregular orientation. For ease of discussion in this Environmental Assessment package the site frontage to Herring Road constitutes the Development Site’s eastern boundary.

Figure 1 – The Development Site

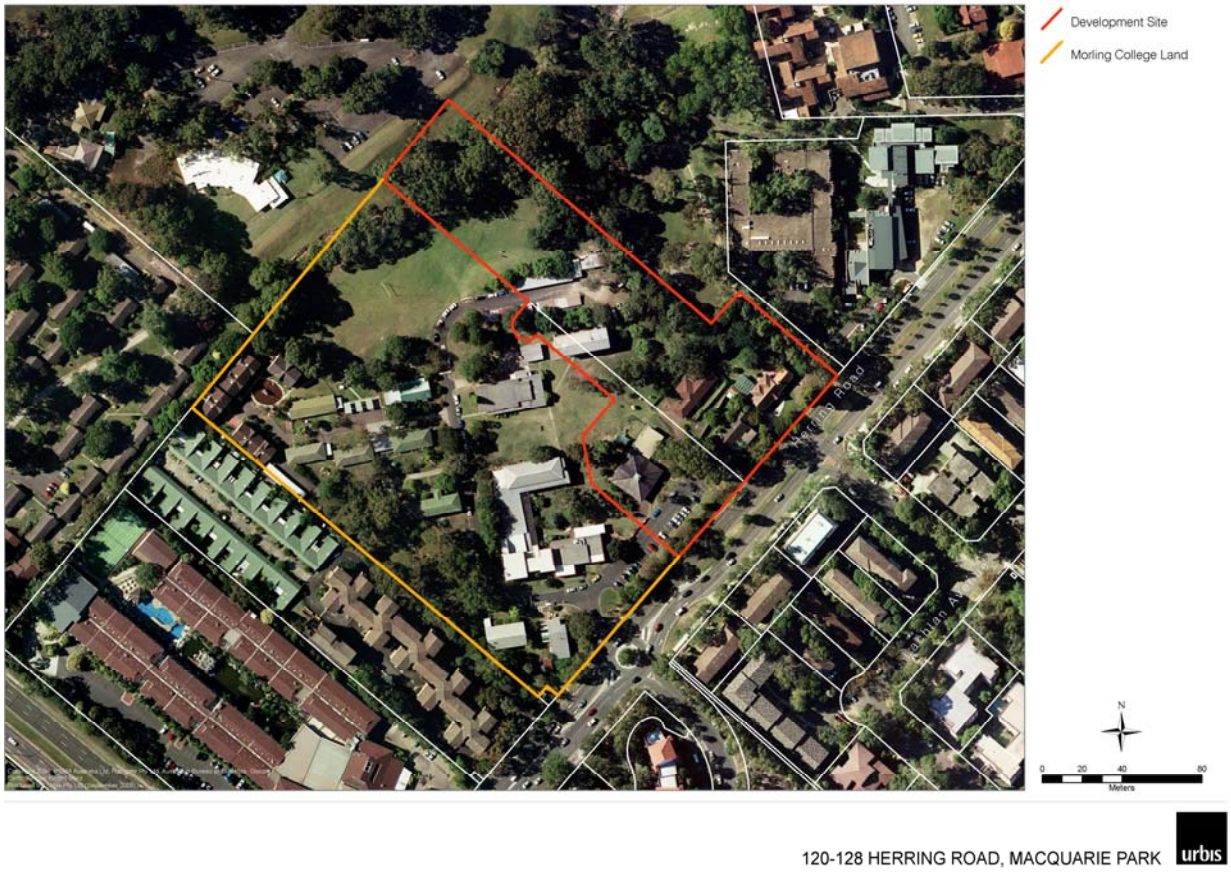


Figure 2 – Existing Allotments and proposed Development Site

Figure 2 above illustrates the existing boundaries of the Morling College Land and the proposed boundaries of the Development Site.

At completion of the Concept Plan, the Development Site will be subdivided into 7 allotments. Each of the five residential apartment buildings will be sited on a separate allotment, and the road will be situated across two allotments, and the remaining two allotments will accommodate the two stages of access road construction. The two access road allotments will be dedicated to Council as public road at completion of the development.

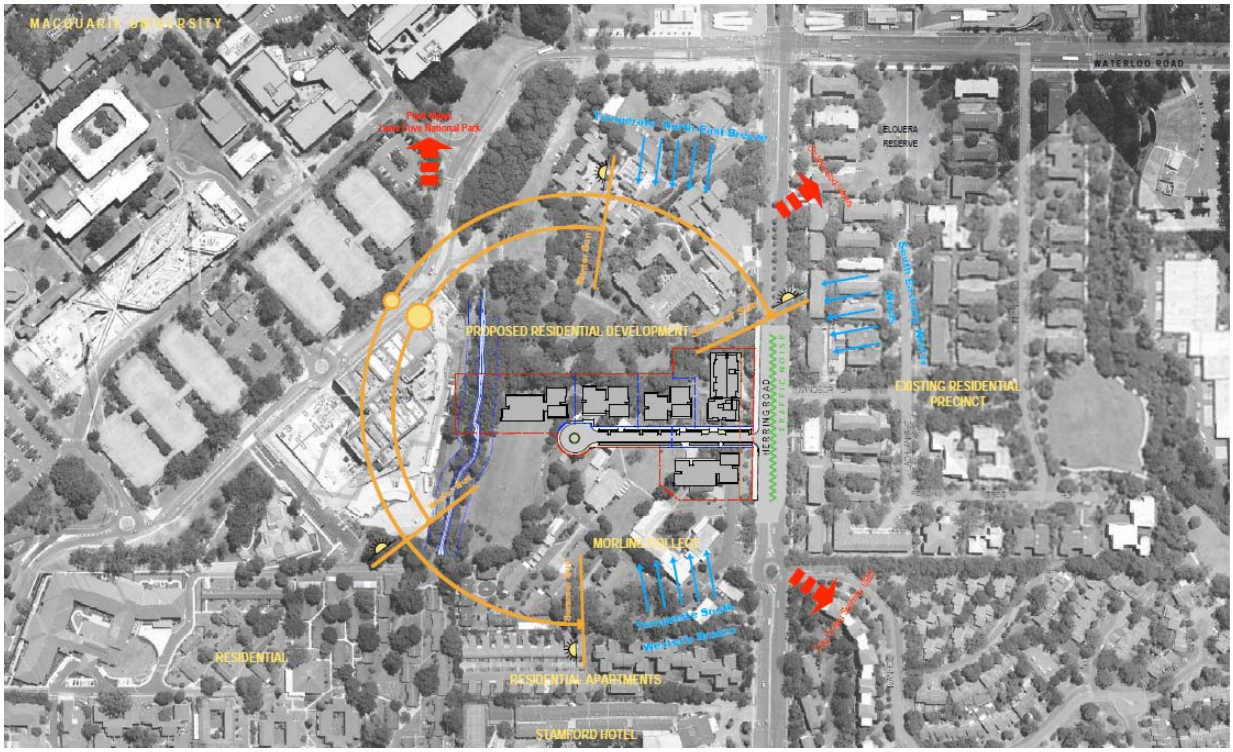
The staging of the subdivision is discussed in more detail below in **Section 3.2.5**.

Figure 3 below is a site analysis illustration. The key characteristics of the Development Site are as follows:

- The area of the Development Site is 17,173sqm comprising all of Lot B in DP 368446 and a north-eastern portion of Lot 1 in DP 876482.
- The Development Site has an eastern frontage to Herring Road of approximately 120 metres and directly adjoins the southern portion of the Macquarie University site.
- There are several existing residential brick buildings, a chapel and carports situated either wholly on, or straddle the boundary of the Development Site and the Morling College Land.
- Other existing improvements on the Morling College Land include minor internal roadways and parking areas.
- There is a scattering of trees across the site and along the site boundaries on adjoining properties.
- The stand of trees at the rear of the Development Site that run along the banks of University Creek are within the riparian vegetation zone.

- The topography of the site includes moderate slopes (falls between 1:10 to 1:20) and gentle slopes (falls between 1:20 to 1:50) that predominantly falls from the street toward the creek.
- The 1 in 100 year flood zone adjacent to the creek extends into the western portion of the site.

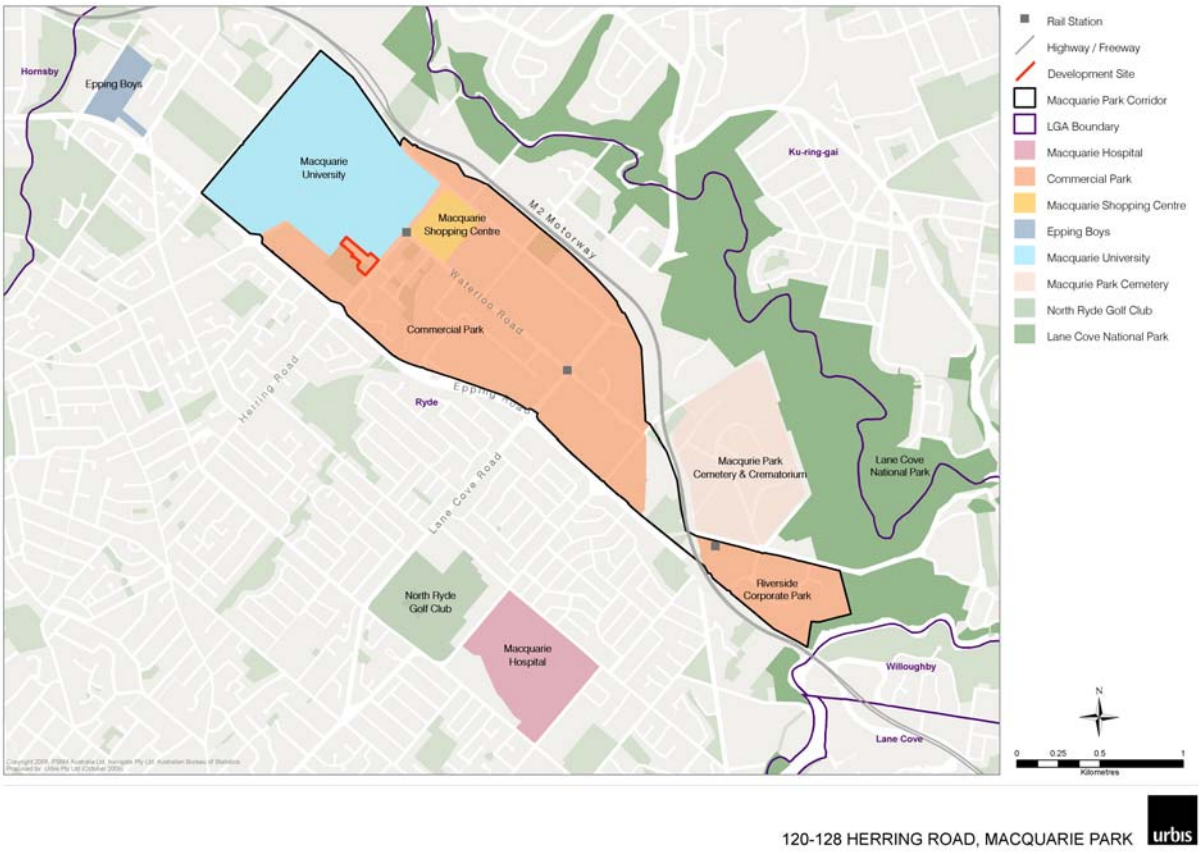
Figure 3 – Site Analysis



(refer to Drawing No. A104 by Turner and Associates in the Volume of Plans for a larger scale plan)

2.2 Site Context

Figure 4 – Macquarie Park Corridor



The Development Site is situated within the north-western portion of the Macquarie Park Corridor, approximately 14 km north-west of the Sydney CBD and 6 km north-west of the Chatswood CBD.

The Macquarie Park Corridor precinct is defined by the M2 Motorway to the north, Culloden Road to the north-west, Epping Road to the south-west and Lane Cove River approximately 2km to the east of the Development Site.

The Macquarie Park Corridor forms part of the "Global Economic Corridor" of development which runs from Botany through the Sydney CBD, Chatswood CBD and across to Rhodes. The Global Economic Corridor is the key employment land growth area of Sydney.

At a subregional level, the Development Site is located within the Inner North Subregion. The *Inner North Subregion Draft Subregional Strategy* sets targets for the subregion to accommodate 60,000 additional new jobs, including 21,000 jobs with in the Ryde Council area by 2031. The *Inner North Subregion Draft Subregional Strategy* and its targets are discussed in more detail in **Section 4.2.3**.

Figures 5 and **6** on the following page illustrate the site and the surrounding land use context.

Figure 5 – Aerial site Context looking South

Figure 6 – Aerial site context looking North

As illustrates in the above Figures, the key characteristics of the local context of the Development Site are detailed below.

Northern and Western Context

Macquarie University occupies the land directly north-west, north and north-east of the Development Site. The University generally occupies the superblock of land between the M2 Motorway to the north, Culloden Road to the north-west, Herring Road to the south-east and Epping Road to the south-west. This superblock comprises approximately 126ha of university land.

The University site is currently occupied by a number of buildings and structures. Key existing development includes:

- The 'Academic Core' main campus buildings ranging from 1 – 8 storeys, situated in the centre of the superblock.
- Macquarie University Research Park and Private Hospital on the corner of Herring Road and Talavera Road which comprises 7.6ha.
- University housing to the west of Culloden Road and fronting Herring Road directly adjacent to the Development Site.
- Open space including playing fields, golf driving range and aquatic centre.
- Other university affiliated uses such as the Film and Television school, management school, Travelodge hotel and service station.

A small portion of this superblock on the corner of Epping Road and Herring Road is occupied by other land uses which are discussed in more detail below under "Southern Context".

Northern Context

Macquarie Centre Shopping Centre and the Macquarie University Train Station are situated to the north-east of the site, providing key infrastructure and services within 250m of the Development Site.

Macquarie Centre is a regional centre situated on the eastern corner of Herring Road and Waterloo Road. The main pedestrian entry to the centre from Herring Road is situated approximately 400 metres north-east of the Development Site. Macquarie Centre has approximately 123,000sqm of gross building area and 3,940 parking spaces. Macquarie Centre is identified as a *'specialised centre'* within the *Inner North Subregion Draft Subregional Strategy*. The shopping centre offers a range of retail services including: banks, post office, supermarkets, department stores, discount department stores, extensive range of specialty retailers, health and medical services, cinemas and an ice-skating rink.

The Macquarie University Train Station opened in February 2009 and forms part of the Northern Line which runs from Central Station to Hornsby via Chatswood and Epping Station. There are two entries to the station situated approximately 250 metres north-east of the Development Site. The station entries are located on the eastern and western corners of the intersection of Waterloo Road and Herring Road. The station services Macquarie University, Macquarie Centre, and the surrounding commercial and residential development within the Macquarie Park Precinct. Train services to the Macquarie University Train Station run every 15 minutes in each direction between 4.30am and 12.30am on weekdays.

Macquarie University currently has two student housing colleges to the north-east of the Development Site, specifically Dunmore-Lang College and Robert Menzies College. These facilities will be affected in the long term by the approved Macquarie University Master Plan.

Eastern Context

A residential area is situated to the south-east of the Development Site, on the south-eastern side of Herring Road. The area is generally characterised by 3 – 4 storey walk-up residential apartment buildings and townhouses generally constructed in the last 20 – 50 years. The properties accessed from Ivanhoe Road are owned by the Department of Housing. The buildings along the south-eastern side of Herring Road to the north-east of Ivanhoe Road are generally owned by Macquarie University for student accommodation, while the balance of the residential area is privately owned.

These buildings have small-scale building footprints, primarily containing 2 bedroom units with limited, if any, communal open space.

Further to the east and south-east of the residential area is the Macquarie Park office precinct which is occupied by a range of commercial office buildings, primarily occupied by research and technologies companies. The commercial buildings range in height generally from 6 to 10 storeys, sited in campus-style landscaped surrounds.

Southern Context

The land to the south-west of the Development Site comprises a mix of land uses including:

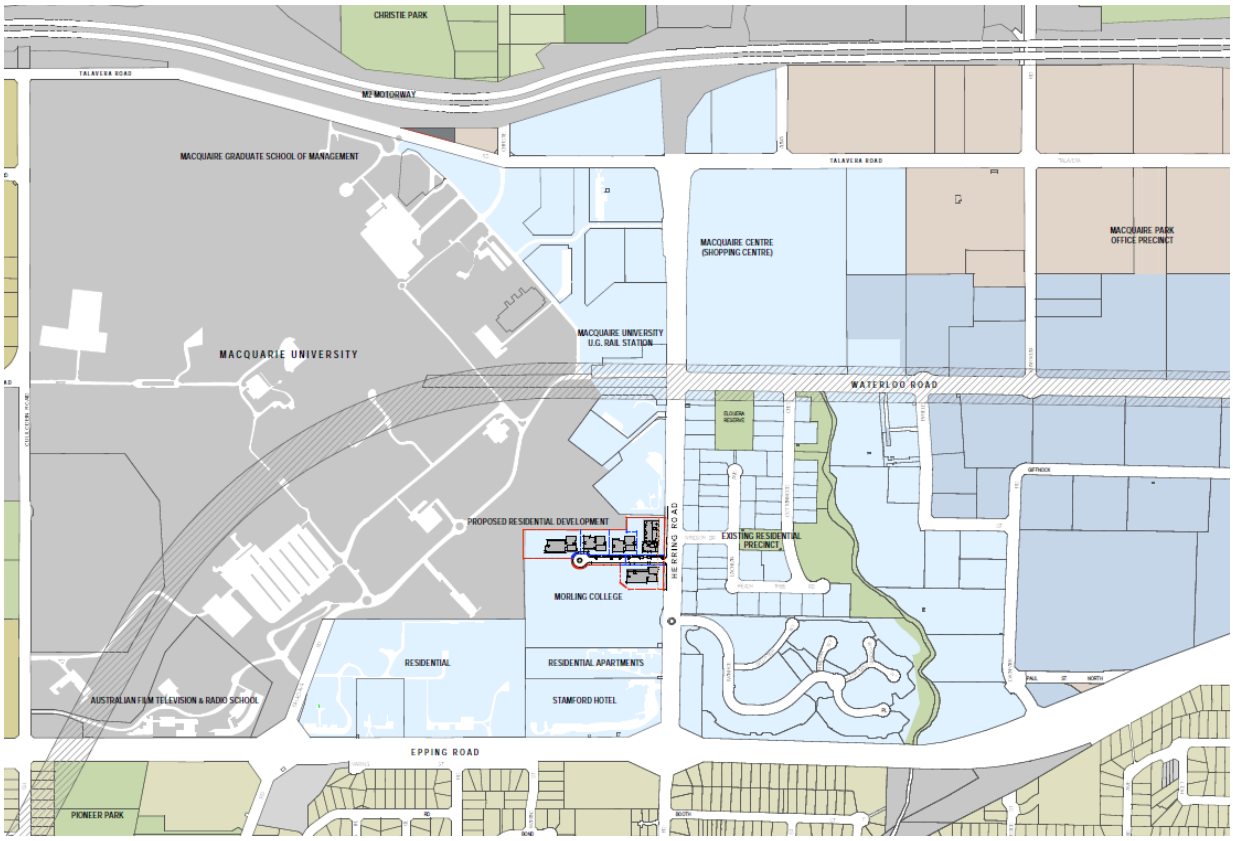
- The remainder of the Morling College site that will continue in accordance with its existing campus operations. The buildings within the Morling College grounds include single, two and three storey brick structures for education, housing and worship.
- A 4 storey residential strata apartment building on the lot adjoining the south-western boundary of Morling College.
- The Stamford Grand Hotel on the corner of Epping Road and Herring Road with approximately 250 rooms.
- BCS Dorothy Henderson Lodge, being an aged care facility with approximately 75 rooms.
- The Ranch Hotel on the western corner of Epping Road and Herring Road, which includes pub and function facilities as well as 14 hotel rooms.
- A more traditional residential area generally characterised by a mix of one and two-storey single and semi-attached residential dwellings on the south-western side of Epping Road.

2.3 Context Analysis

2.3.1 Land Use Zoning

The site is currently zoned 3(h) Business Special (Mixed Activity) under the Ryde Planning Scheme Ordinance. The 3(h) zoning is depicted in the pale blue colouring of the site and surrounding properties in **Figure 7** on the following page.

Figure 7 – Land Uses and Zoning



(refer to Drawing No. A105 by Turner and Associates in the Volume of Plans for a larger scale plan)

The current surrounding land use pattern is dominated by Macquarie University to the north, north-east and north-west and the Macquarie Centre Shopping Centre to the north-east.

As shown on the above plan, a large amount of the 3(h) zone which permits residential housing is occupied by non-residential uses such as the part of the University grounds, The Stamford Hotel and the Macquarie University, Macquarie Centre Shopping Centre. This significantly limits the opportunity for future housing to establish within walking distance to the Macquarie university train station.

2.3.2 Existing building types and heights

The urban context comprises a diverse range of building types and heights, with the following key features:

- The buildings within the Morling College grounds include single, two and three storey brick structures for education, housing and worship.
- The Macquarie University buildings to the north and north-west range in height from 1 to 8 storeys. The approved Macquarie University Concept Plan envisages the development of buildings up to 108 metres to the north-east and approximately 460,000sqm of additional GFA.
- The Macquarie Centre shopping centre is a multi-level building of approximate 5 storeys.
- Commercial buildings in the Macquarie Park Corridor to the east and are generally 6 – 10 commercial storeys in height on large allotments, with large building floor-plates.

It should be noted that to compare building heights of different land uses should have regard to the floor-to-floor height clearances required for different land use.

Residential land uses generally have a floor-to-floor height of 3 metres, while a commercial building will generally have a floor-to-floor clearance of 3.6 metres. This means a 12 storey residential apartment building will have a similar building height as a 10 storey commercial building.

To the south-west of the Epping Road, outside the Macquarie Park Corridor, the current building height and scale reduces to one and two-storey residential buildings.

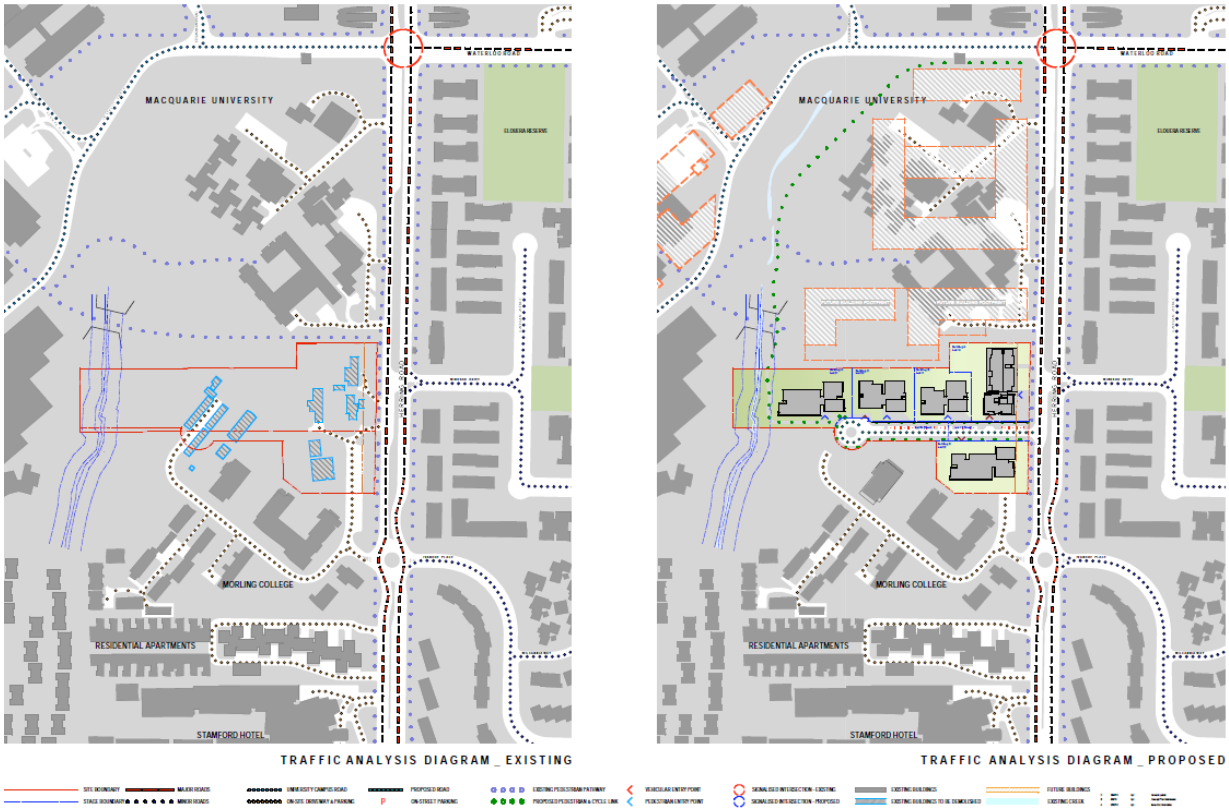
The diversity of building typology reflects the areas transition from a business park with large buildings of moderate height and multi-unit residential area, to an employment and educational hub of regional and state significance serviced by multi-modal and frequent transport infrastructure.

The Macquarie University buildings have an institutional architectural style reflecting the architectural trend of the institutional buildings during their construction in the 1950s. The office blocks within the Macquarie Park Corridor are generally large floor-plate, purpose-built, commercial buildings, some with specialised research and product development laboratories. These buildings are on large allotments in a business-park style setting with large landscaped open grounds.

The residential area to the south-east of Herring Road is characterised by smaller scale building forms on smaller allotments, with minimal grounds or open space. These buildings generally range from 3 – 4 storeys in height, and offer medium-density residential housing within the Macquarie Park Corridor, and are similar in scale as the strata residential building on the property to the south-west of the Morling College land.

The building typology and availability of development up-lift is illustrated in **Figure 8**. The illustration shows the scale of development within the immediate surrounding context of the site, highlighting the allotment scale, floor plate size and under-developed areas. Macquarie Park Corridor is characterised by large-scale allotments dominated by commercial uses and offers little development opportunity for other support and university related land uses such as residential housing outside the University site.

Figure 8 – Local Context Building Footprints – existing and future



(refer to Drawing No. A107 by Turner and Associates in the Volume of Plans for a larger scale plan)

2.3.3 Future building profiles

The future buildings within the Macquarie Park Corridor will be governed by new planning policies (draft Ryde LEP 2008) which are currently being prepared by Ryde Council and the DOP. In addition to these planning controls a 25 year Master Plan for the University site has been approved by DOP which will direct future development within the University site directly adjacent to the site.

Macquarie Park Corridor

Development patterns, trends and typologies within the surrounding context of the Development Site has undergone a change driven by the Macquarie Park Corridor increasing profile within the Sydney employment lands, and the expansion of Macquarie University.

The future urban form and building typology within the Development Sites surrounding context projected by the state strategic planning documents, local planning policy and approved Concept Plans indicate that that development density, height and building form will accommodate more intensified development within the precinct.

The Ryde Council Planning Scheme Ordinance is currently under review, with a comprehensive Draft Ryde LEP 2008 (the Draft LEP) was public exhibited at the end of 2008. The Draft LEP included a review of built form controls and permeability within the Macquarie Park Corridor, and proposed a range of new development controls including new height controls, floor space ratio controls, and a 'finer-grain' road and pedestrian network.

Although Draft LEP 2008 proposes increases in building heights and FSR for various sites within Macquarie Park, it does not increase the current FSR limit for the site. However, Ryde Council have advised in its correspondence to the Department of Planning (dated 21 January 2010) that:

> *"Council is currently preparing a LEP amendment that includes revised Floor Space Ratio (FSR) and Height controls. Whilst this LEP amendment has not yet been finalised or approved for exhibition, it may in time provide revised controls that allow for greater height and increased FSR."*

Therefore it is reasonable to expect that future local planning controls applying to the site will permit higher building density and heights.

Macquarie University Concept Plan

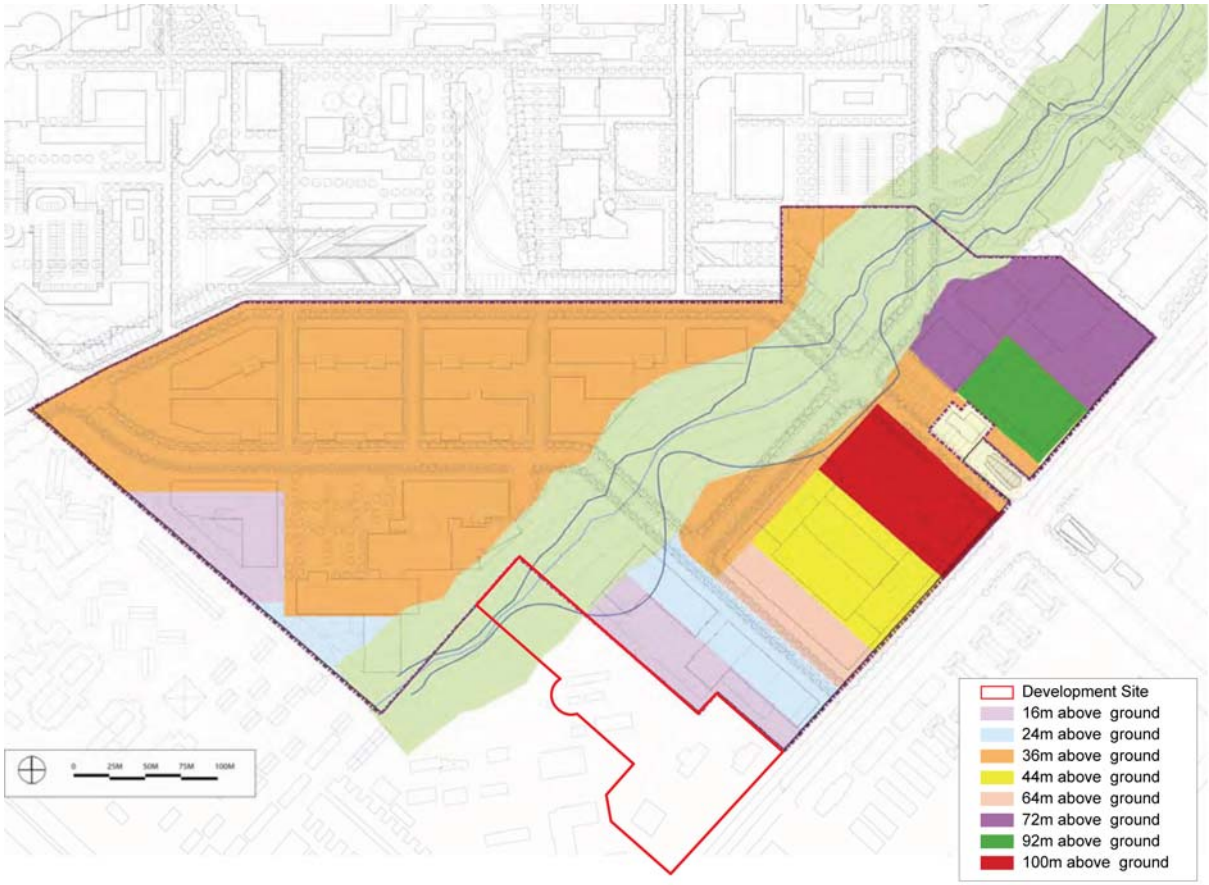
The Macquarie University Concept Plan, approved by the Department of Planning in August 2009, Concept Plan provides a 25 year development plan for Macquarie University. The University Concept Plan includes approval for:

- Additional 61,200sqm of academic GFA within the Academic Core.
- Additional 400,000sqm of commercial GFA and parking outside the Academic Core.
- Additional 3,450 beds within the University Housing Precinct for University purposes only.

The University Concept Plan indicates the Stage 1 works to be the development of the Macquarie University Precinct E, which is directly adjacent to the Development Site. This is a mixed use precinct of the University grounds addresses Herring Road with a fluctuating building height of 16 – 108 metres as illustrated on the extracted graphic below in **Figure 9**.

Figure 9 – Macquarie University Concept Plan Precinct E Built Form / Height Control Map.

Source: **Adapted from *Macquarie University Master Plan Concept Plan Environmental Assessment, JBA (2009)***



The building layout within Precinct E has been driven by the Macquarie University internal road layout and additional internal road connections. Based on the indicative building foot-prints within the University Concept Plan, an indicative perspective was prepared and submitted documentation and extracted below in **Figures 10 and 11**. This perspective illustrates the up-lift in development within the Macquarie University grounds directly adjacent to the Development Site. The most intensive development is situated at the corner of Herring Road and Waterloo Road where it has the most direct access to existing infrastructure including the train station, bus interchange, and Macquarie Centre retailing facilities. This perspective also illustrates the Macquarie University Concept Plan approved building heights along Herring Road that fluctuate dramatically, while gradually tapering down as they move south and away from the Macquarie University Station Precinct Centre.

Figure 10 – Macquarie University Concept Plan Precinct E Indicative Built Form Perspective.

Source: Macquarie University Master Plan Concept Plan Environmental Assessment Revised Figures, (Figure 41a) JBA (2009)

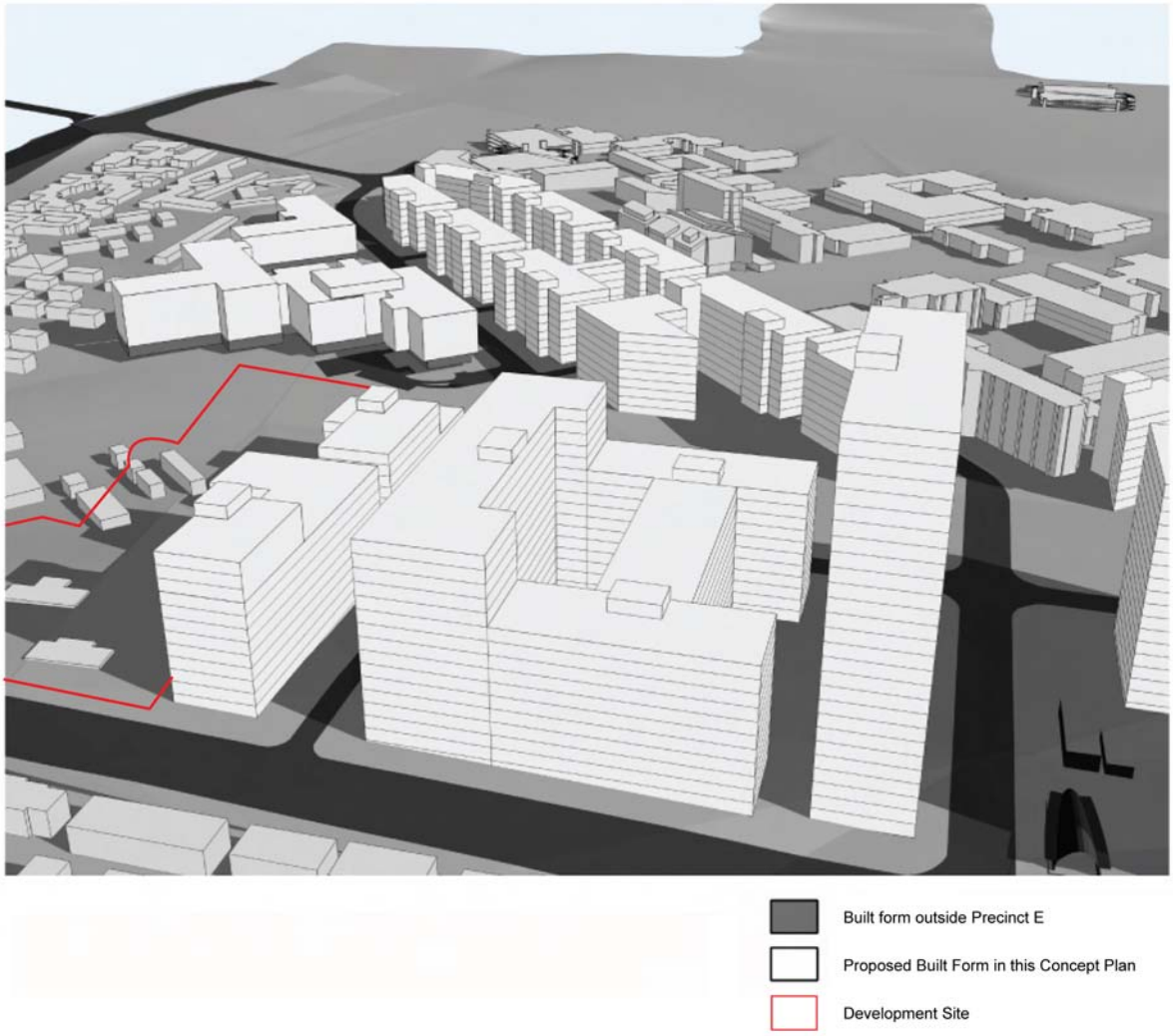
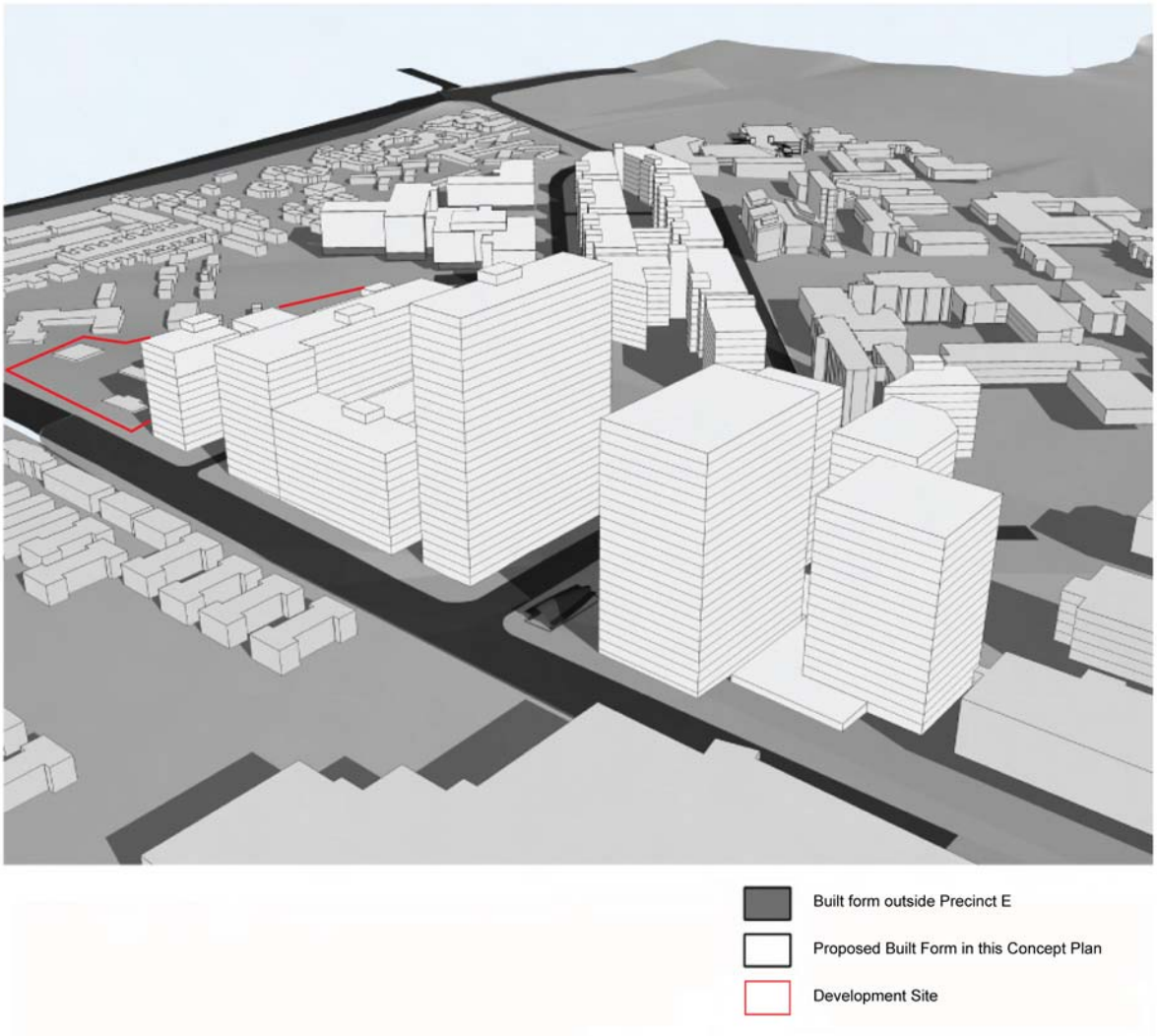


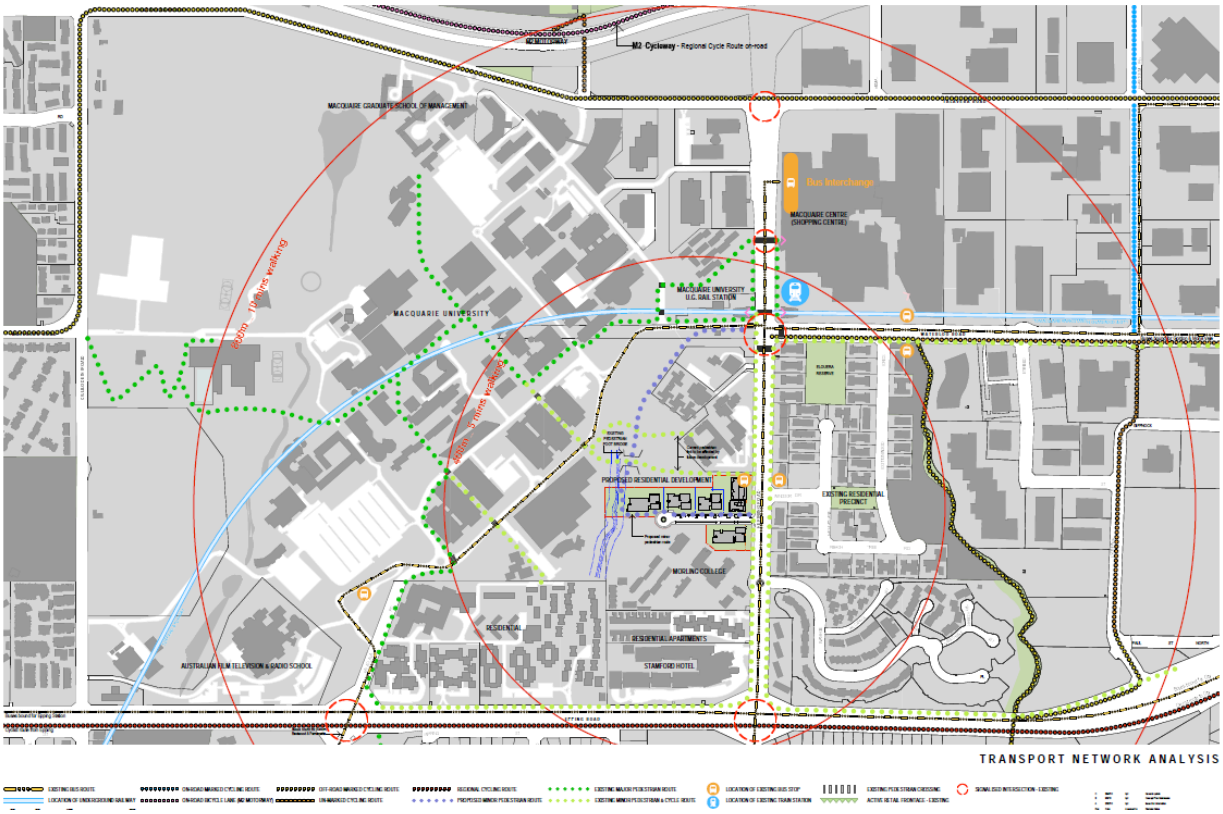
Figure 11 – Macquarie University Concept Plan Precinct E Indicative Built Form Perspective

Source: Macquarie University Master Plan Concept Plan Environmental Assessment Revised Figures (Figure 40a), JBA (2009)



2.3.4 Transport and Access

Figure 12 – Transport Network Analysis of Local Context



(refer to Drawing No. A106 by Turner and Associates in the Volume of Plans for a larger scale plan)

Road network

The construction and opening of the M2 Motorway and the Lane Cove Tunnel in 1997 and 2007 respectively, has improved private vehicles accessibility to the Macquarie Park Corridor. The catchment of the M2 Motorway has been further expanded by the completion and connection of the M7 Motorway which opened in 2005, improving the areas connections to the north-west, west and south-west subregions.

The Lane Cove tunnel provides the final freeway link between the Macquarie Park Corridor and the Sydney CBD and Airport. Further, the Lane Cove Tunnel provides the final link to the Sydney ring-road which also connects the majority of the "Global Economic Corridor".

Public transport

The key public transport improvement within the Macquarie Park Corridor is the construction and opening of the Chatswood to Epping rail link to service the future employment and housing growth. The rail link includes three train stations within the Macquarie Park Corridor, one on Delhi Road, one on Lane Cove Road and one at the intersection of Waterloo Road and Herring Road.

As shown on **Figure 12**, the Macquarie University Station and bus interchange are situated approximately 250 metres north-east of the Development Site, which provide it with direct access to a multi-modal public transport system. Connectivity between the Development Site and the public transport hub is via existing pedestrian footpaths along Herring Road and signalled pedestrian crossings at the intersection of Herring Road and Waterloo Road.

Train services to the Macquarie University Train Station run every 15 minutes in each direction between 4.30am and 12.30am on weekdays.

Furthermore, a large bus interchange is located on the Herring Road frontage of the Macquarie Centre Shopping Centre. This provides bus services to the immediate surrounding suburbs, the north shore and the CBD.

Pedestrian/cycle linkages

The site is ideally located within 400 metres and therefore close walking distance to the new Macquarie University Railway Station, the Macquarie Centre shopping Centre and bus stops on Herring and Waterloo Roads bound for the north shore and the city. The ready and convenient access to these services makes the site highly appropriate for medium density housing.

Pedestrian and cycle linkages to the Development Site are limited to the local street network. However, the Draft Ryde DCP 2008 includes a cycleway and pedestrian path layout plan for the Macquarie Park Corridor. This layout plan indicated a 'finer grain' cycleway / pedestrian path within Macquarie Park, which will connect to more subregional and regional cycleways / pedestrian paths along regional infrastructure routes such as the M2 Motorway, Epping Road and Delhi Road.

The Ryde Bicycle Strategy and Masterplan 2007 does not include a bicycle connection through the Development Site, however there is scope for the site to contribute a connection along the proposed new road and along the University Creek to provide opportunities for future connection to these networks to University Road to the west. This opportunity and potential contribution the site can provide to the pedestrian and bicycle network is discussed in more detail below in **Section 5.2.4** of this report.

2.3.5 Social Context

Based on a review and analysis of the socio-economic statistics of the local context of the Development Site collected in the 2006 Australian Bureau of Statistics Census, the following key local attributes can be identified.

- The local area has a total population of 2,671 people.
- The population density within the local area is 6,860.5 people per square km, which is more than 20 times the average density of Sydney of 339.2 people per square km. This shows Macquarie Park is an area of demand for medium-density housing.
- Local households have an average household income of $40,882, which is 48% below the average Sydney household income.
- The average local age is 40.4, with the largest component of the local population being 25 – 39 years old.
- 74% of the local population are renters. However 57.2% of the population were living at the same address 5 years ago. This indicates that they the local community is a stable composition.
- Only 50.2% of the population are in the labour force, with professional industries being the largest employment sector.
- Almost 60% of the local population are overseas born, with more than 18% born in China. This is significantly greater then the average for Sydney, where 34.4% of the population is overseas born, with less than 3% born in China. Therefore future residential development should have regard to foreign cultural demands.
- Almost 30% of the local population having obtained a bachelor degree or higher compared to the Sydney average of 21.1% having attained this level of education. This indicates that the precinct has a well-educated population.

2.3.6 Proximity to Service Infrastructure

The Development Site is currently connected to water, sewer, electricity, gas and telecommunication services. However the capacity of these services will require upgrading in a staged manner to support the proposed residential development up-lift on the Development Site.

The upgrading of services is proposed to be introduced progressively as part of the staging strategy, commencing with the construction of Building A.

2.3.7 Permeability

The Development Site is part of the Macquarie University superblock which has limited pedestrian, cycle and vehicle permeability to the public. The Development Site land currently includes a private internal road connecting the existing building structures on the College Land.

The Development Site does not currently offer any public permeability. However, the Concept Plan includes a new local access road which will break down the larger allotment size and introduce vehicle and pedestrian movements onto the site along a south-east to north-west axis.

Along the new boulevard will be a through-site pedestrian and bicycle path connecting into the riparian corridor area. A path parallel to the University Creek will allow access and connection into the existing pedestrian network / bridge crossing to the University campus and to University Station.

3 Description of Proposal

3.1 Proposal Overview

3.1.1 The Vision

The development vision is to create a contemporary estate of residential apartments that responds to the needs of the identified target market as well as capitalise on the site's proximity to rail and bus services, regional shopping centre services, educational and employment opportunities, and the Lane Cove National Park.

The project will establish a medium density apartment development comprising 5 contemporary buildings in an urban setting. The orientation of two buildings facing onto Herring Road will create a strong and active street presence along this key transport corridor.

The buildings will have a contemporary aesthetic theme with modulated building façades sympathetic to the pedestrian and human scale through façade relief, articulation and selection of materials. The building forms will project robustness and permanency and promote low maintenance outcomes.

Whilst each building will have its own identity, the development will have a recognisable interrelationship and synergy which will be legible throughout the estate. The central street boulevard lined with high quality landscaping will promote a sense of community for residents and a connection to the greater community and facilities surrounding the estate.

3.1.2 Overview of Project

This Major Development application seeks approval for three project components:

- **Concept Plan** for the height, bulk and configuration of 5 residential apartment buildings and associated components such as a new local access road, landscaping and car parking.
- **Project Application for the staged Subdivision** of the Development Site which will result in 7 allotments at completion of the Concept Plan development, having each of the 5 residential apartment buildings on separate allotments, and 2 allotments for the new local access road.
- **Project Application for the construction of a Mixed Use Building** referred to as "Building A**"**. It will comprise a 12- residential storey apartment building with a small ground floor retail space and basement car park, together with the construction of the eastern portion of the new local access road along the southern frontage of Building A.

Each of these components of the Major Development Application is discussed in detail in the following subsections.

3.2 Concept Plan

A complete set of the Concept Plan drawings are included in the separate **Volume of Plans – Part 2 (i) Concept Plans.**

The key components of the Concept Plan proposal are summarised below.

3.2.1 Land Use and Built Form

Morling College will retain the existing campus use of the part of the existing college land not included in the Development Site, while the Development Site will be redeveloped for medium density residential buildings and associated services.

The Concept Plan approval seeks approval for the following attributes for development of the site.

Building Form

The overall Concept Plan built form comprises 5 residential apartment buildings situated on individual allotments, as illustrated in the subdivision description in **Section 3.3**.

Each building will comprise 12-residential storeys with three levels of basement car parking. The total built form will accommodate the following:

- approximately 45,718sqm of total GFA
- approximately 557 apartments
- ground floor retail space (where appropriate)
- approximately 768 parking spaces within the basement levels.

The composition of the land use and built form across the Development Site is summarised in **Table 2** below:

Table 2 – Summary of Proposed Concept Plan Built Form

Building	Gross Floor Area* (sqm)	Height	Dwellings (indicative)	Parking Spaces (indicative)
Building A	10,357	RL 65.3 ground RL 103.0 parapet RL 104.9 plant	123	174
Building B	7,303	RL 65.6 ground RL 103.1 parapet RL 105.9 plant	90	124
Building C	7,341	RL 63.3 ground RL 100.8 parapet RL 103.6 plant	90	124
Building D	10,241	RL 60.1 ground RL 97.6 parapet RL 100.4 plant	125	171
Building E	10,467	RL 65.6 ground RL 106.1 parapet RL 108.9 plant	129	175
Total	**45,718**	**-**	**557**	**768**

** Calculations are based on the following definition:*

***gross floor area** means the sum of the floor area of each floor of a building measured from the internal face of external walls, or from the internal face of walls separating the building from any other building, measured at a height of 1.4 metres above the floor, and includes:*

(a) the area of a mezzanine, and

(b) habitable rooms in a basement or an attic, and

(c) any shop, auditorium, cinema, and the like, in a basement or attic,

but excludes:

(d) any area for common vertical circulation, such as lifts and stairs, and

(e) any basement:

(i) storage, and

(ii) vehicular access, loading areas, garbage and services, and

(f) plant rooms, lift towers and other areas used exclusively for mechanical services or ducting, and

(g) car parking to meet any requirements of the consent authority (including access to that car parking), and

(h) any space used for the loading or unloading of goods (including access to it), and

(i) terraces and balconies with outer walls less than 1.4 metres high, and

(j) voids above a floor at the level of a storey or storey above.

Building Orientation

Building A has been designed and orientated to address the Herring Road streetscape with its primary pedestrian access directly from Herring Road. This building will have a secondary street frontage to the new boulevard, which will be utilised for vehicle access to the basement car parking and vehicles servicing the building.

Building E has also been designed and orientated to address Herring Road, with its pedestrian access and car park access from the boulevard. Buildings B, C and D have been designed and orientated to address the boulevard and have their pedestrian and vehicle access directly from the boulevard.

The buildings have been orientated to maximise solar access to the maximum number of dwellings.

Land Use and Apartment Mix

The five residential apartment buildings will comprise a mix of one, two, three and four bedroom dwellings, with the final mix of units being determined by market demand.

At the ground floor of Building A, 95.6sqm retail space is proposed, which has been designed to cater for a café, restaurant, local convenience store, and / or building management office.

The design for additional non-residential ground floor uses in the remaining buildings (Buildings B, C, D and E) will be considered as part of future Project Applications and will be responsive to market demand, however any further retail space will be a minor and ancillary component to the residential development.

3.2.2 Landscape and Open Space

There are three key components of the landscaping strategy:

Riparian Corridor

The Concept Plan includes the regeneration of the riparian corridor of University Creek at the rear of the Development Site. These works will include planting of native and locally endemic plants, and preserving existing vegetation where possible and appropriate for the long-term vegetation management of the wider riparian corridor. The regeneration works have been designed for adjoining properties to connect to this corridor and create a linear open space network along the creek.

The details of the regeneration works and the on-going management of the riparian corridor will be in accordance with the Vegetation Management Plan (VMP) prepared by Total Earth Care (TEC) attached in **Appendix P**.

Public Open Space

A landscape strategy for the proposed public domain has been prepared concurrently with a landscaped strategy for the private open space.

The public open space includes street planting along the Development Site's Herring Road frontage, which incorporates existing trees were appropriate, and a tree-planting scheme which will intensify the landscaped contribution of the site to the Herring Road streetscape.

Street trees are proposed within the verge of the new local access road, to be planted at 6 metre intervals. Additionally, ornamental trees will be incorporated within the verge to punctuate key locations, such as pedestrian entries to buildings. The balance of the verge will accommodate a footpath and groundcover planting.

Private Open Space

Landscaping within each of the proposed allotments will combine existing vegetation where possible with new local planting. Private open space is proposed for each dwelling on ground floor, and all dwellings will have access to common landscaped open space at ground level. These common open space areas will include both landscaped areas and recreational amenities including swimming pools, change rooms and amenities, gym and barbeque facilities. These facilities are anticipated to be shared between Building A and B, and Buildings C and D.

3.2.3 Access, road infrastructure and parking

The Concept Plan proposes new site access, a new local access road and three levels of basement car parking in each of the proposed residential apartment buildings. Details of these key elements of the Concept Plan are discussed below.

Access

The Concept Plan includes new access arrangements to the Development Site from Herring Road. The key features include:

- Creation of a single access point centrally along the Development Site's Herring Road frontage, and removal of existing driveway to the property at 128 Herring Road.
- A left-in, left-out intersection with Herring Road.
- Any residential traffic will access their carpark off the proposed new Boulevard.

Road Infrastructure

The public road reserve has been designed to service the single access point to the site. The road reserve will have the following features:

- A 16.1 metre wide road reserve, comprising:
  - Two 3 metre wide travelling lanes,
  - A single 2.5 metre wide parking land on the northern side of the road,
  - A 3.8 metre wide verge with footpath and landscaping on each side of the road,
- A cul-de-sac with a roundabout at the north-western end is proposed to facilitate vehicle turning and to create a possible connection point for a future road extension.
- The new local access road will provide the street address for Buildings B, C and D, and secondary street address for Buildings A and E, which have been orientated to address Herring Road as their principle street frontage.
- Direct vehicle access to the basement carparks of each of the residential buildings will be provided via the new boulevard.
- Street tree planting and a co-ordinated landscaping strategy within the road reserve will create a public domain precinct responsive to the pedestrian and vehicle scale of the local context.
- The new access boulevard will be constructed in two stages and located on two allotments which will be dedicated to Council as public road at completion of the project.

Pedestrian and Bicycle Network

The new local access road reserve will include a 3.8 metre wide verge on each side of the carriageway which will connect to the existing footpath on Herring Road. The new footpath will service both pedestrian and bicycle movements within the Development Site.

The new footpath will:

- Connect with the existing footpath in Herring Road and run along each side of the new road.
- Extend beyond the road terminus as walkway providing scope for future pedestrian connection to the north-west into the University along University Creek and towards Macquarie University Train Station.

Parking

Parking for each building is provided in three levels of basement parking situated under each of the apartment buildings accessed via the new local access road. Parking will be provided in accordance with the Ryde DCP 2006 rates and will be determined by the final mix of apartments in each building. The Concept Plan indicates the development will provide approximately 768 parking spaces within the basement carparks which is a rate of 1 space per 60sqm GFA.

Table 3 indicates the approximate number of parking spaces proposed for each building:

Table 3 – Indicative parking spaces per buildings

Building	Residential Parking (Accessible)	Visitor Parking (Accessible)	Total
Building A	143 (14) (inclusive of 3 spaces for retail)	31 (1)	174 (15)
Building B	101(9)	23 (1)	124 (10)
Building C	101 (9)	23 (1)	124 (10)
Building D	140 (13)	31 (1)	171 (14)
Building E	143 (13)	32 (1)	175 (14)
Total	**628 (53)**	**140 (6)**	**768 (59)**

Additional on-street parking will also be provided in the northern parking lane along the new local access road. These spaces will service visitors of residents and users of retailing facilities within the development.

3.2.4 Drainage and Stormwater Management

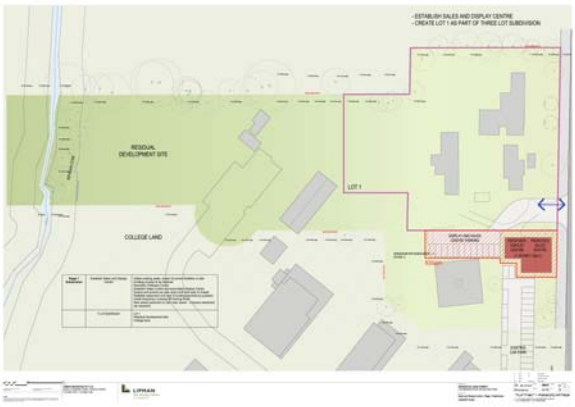
A Drainage and Stormwater Strategy has been designed for the whole Development Site. For Building A the stormwater runoff will be collected and drained into the existing Herring Road stormwater system. For Buildings B, C and D, stormwater runoff will be collected and gravity fed through a drainage pipe in the access road reserve into a bisowale for filtration and then discharges into University Creek.

The staged drainage and stormwater management works are discussed in **Section 5.8**.

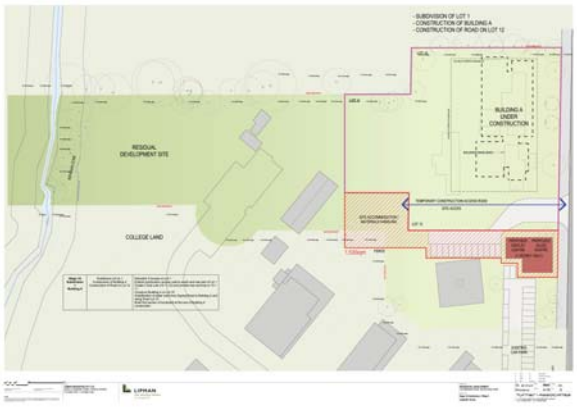
3.2.5 Project Construction

The Concept Plan incorporating Buildings A, B, C, D and E, local access road and associated works are proposed to be constructed in a number of stages as illustrated in the plans prepared by *Turner + Associates* numbered A171-A177 which are illustrated in **Figure 13** below:

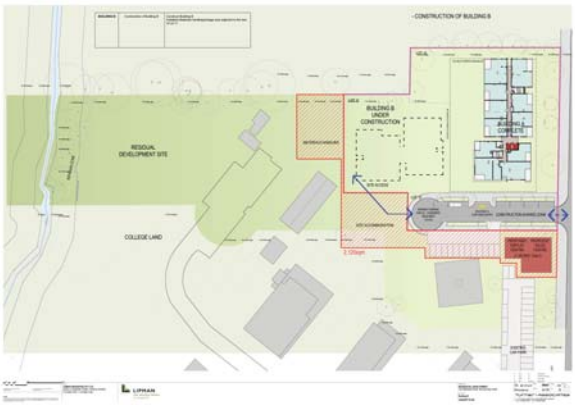
Figure 13 – Indicative Project Construction Staging



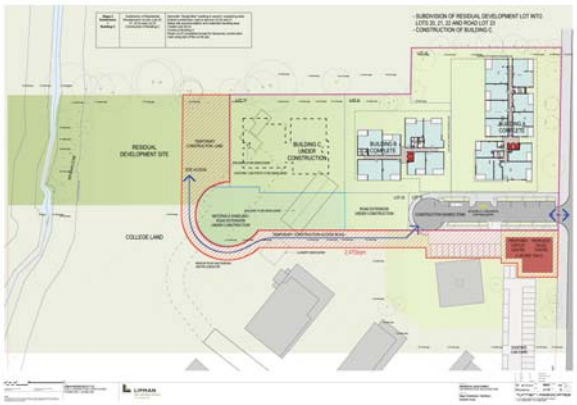
Picture 1 Stage 1 subdivision – Establish sales and Display centre ad create Lot 1 as part of 3 lot subdivision



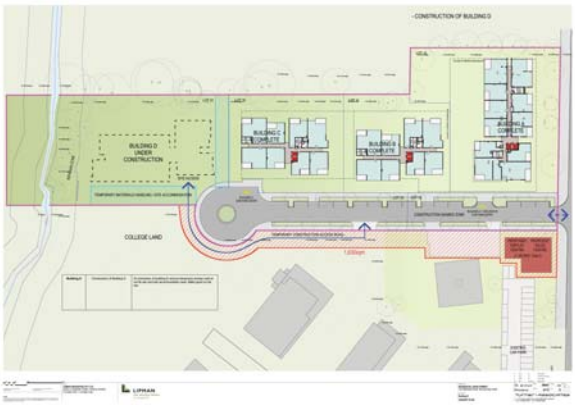
Picture 2 –Stage 1A Subdivision - Construction of Building A on Lot 1 and road construction on Lot 12.



Picture 3 – Construction of Building B.



Picture 4 –Subdivision of residual development lot into Lots 20, 21, 22 and road lot 23. Construction of Building C..



Picture 5 – Construction of Building D.

Picture 6 – Construction of Building E

Picture 7 –Construction completion including decommissioning construction zone.

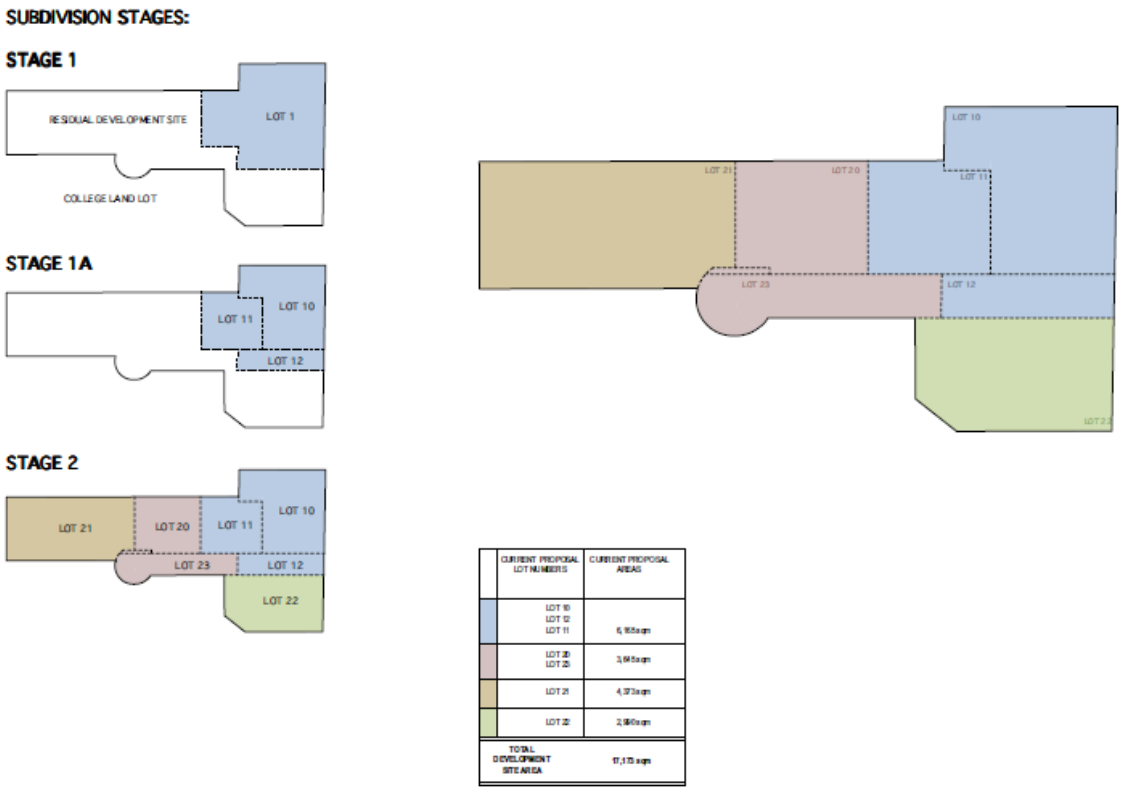
3.3 Project Application – Subdivision

Project Application approval is sought for the complete staged-subdivision of the Development Site.

A complete set of the plans are included in the separate **Volume of Plans, Part 2 (ii) Project Application – Staged Subdivision.**

An extract of the subdivision staging plan prepared by *Turner + Associates* is shown below in **Figure 14**.

Figure 14 – Project Application – Subdivision Staging



The staging of the subdivision is to occur to support each subsequent construction stage. The completed staged subdivision will result in the Development Site comprising 7 allotments, with each of the five proposed residential apartment buildings being located on a separate allotment, and the access road being across two allotments to be dedicated to Council as public road.

The staged subdivision is anticipated to comprise the following stages.

3.3.1 Stage 1 – Subdivision of the Development Site from Morling College (Initial 3-Lot Subdivision)

The initial subdivision stage is to subdivide the Development Site from the larger Morling College land. The Development Site will comprise the entirety of Lot B in DP 368446 and the north-east of Lot 1 in DP 876482. The initial stage of subdivision will result in a Development Site area of 17,173sqm, and a total Morling College land holding of 30,560sqm

The Stage 1 subdivision proposes a 3 lot subdivision of the Morling College Land which will result in the creation of three allotments:

- "Lot 1" being an allotment of 6,165sqm supporting the Stage 1 development works fronting Herring Road.
- "Residual Development Site" being an allotment of 11,008sqm being the balance of the Development Site allotment.
- The remaining Morling College Land Lot of 30,517sqm (Note: A separate non-affected lot of 43sqm exists which forms part of the Morling College Lands).

3.3.2 Stage 1A – Subdivision of Stage 1 allotment into three allotments

The following stage of subdivision is for the Stage 1 allotment. Lot 1 will support the Stage 1A (Building A) construction works proposed in the Project Application for the construction of Building A, including the construction work zone.

Lot 1, to be further subdivided into three allotments. These allotments will comprise the following:

- "Lot 10" being an allotment of 3,283sqm which will be occupied by Building A which will be constructed in accordance with Building A Project Application.
- "Lot 11" being an allotment of 1,852sqm which will be occupied by Building B to be constructed after Building A has been commenced.
- "Lot 12" being an allotment of 1,030sqm which will be accommodate the first portion of roadworks which will have been constructed in accordance with the Building A Project Application.

These allotments will be subdivided during construction of Building A and the first portion of the roadworks, and prior to construction of Building B commencing.

3.3.3 Stage 2 – Subdivision of the Residual Development Site into four allotments

Stage 2 of the subdivision is to divide the Residual Development Site into four allotments to support the further three residential apartment buildings on individual allotments and the construction of the final section of road.

The Stage 2 subdivision will comprise the following:

- "Lot 20" being an allotment of 2,027sqm which will accommodate Building C.
- "Lot 23" being an allotment of 1,618sqm which will accommodate the final portion of the new local access road construction.
- "Lot 21" being an allotment of 4,373sqm at the rear of the Development Site which will accommodate Building D and the riparian corridor area.

- "Lot 22" being an allotment of 2,990sqm which will accommodate building E on the southern side of the two road allotments with a frontage to Herring Road.

The Stage 2 allotments will be created concurrently to support the construction of Buildings C, D and E (anticipated to be delivered in sequential order).

It should be noted that the subdivision layout has been designed for each residential apartment building to be on separate strata plans. The two road allotments are intended to be dedicated to Council to be incorporated in the public road network as part of the Concept Plan proposal.

3.4 Project Application – Building A

A complete set of the Building A drawings are included in the separate **Volume of Plans – Part 2 (iii) Project Application – Building A.**

Project Application approval is sought for the construction works for Building A. Each of the elements of the Building A Project Application works are detailed below.

3.4.1 Subdivision

The Project Application (Building A) works include the subdivision of the Morling College land into three allotments:

- Morling College allotment to be retained by Morling College ("College Land Lot").
- "Lot 1" which will comprise the north-east corner of the Development Site fronting Herring Road.
- The "Residual Development Site" allotment which will be further subdivided to support each subsequent stage of the Concept Plan development and to be retained by Morling College in the interim.

The Project Application (Building A) works will be confined to Lot 1. The allotment will support the development of the first portion of the new local access road, Building A, the basement parking associated with Building A and the extension of the basement parking podium to connect to the subsequent Building B basement car park.

Further subdivision of "Lot 1" is proposed to occur in the form of 3 sub-lots created in Stage 1A to support Building A (on Lot 10), Building B (on Lot 11) and the first component of the new local access road (on Lot 12) on separate individual allotments. The subsequent subdivision stages form part of the Project Application for Staged Subdivision for the entire Development Site as outlined in **Section 3.3** above.

3.4.2 Demolition

The proposed development of Building A on Lot 1 will require the demolition of three existing one-storey single dwellings with two associated garages and one carport, and the single storey childcare centre adjacent to the chapel. The associated driveways connecting the existing buildings will also be removed.

Separate demolition approval will be sought to remove the remaining structures on each of the allotments for subsequent stages of development on an 'as needs' basis.

3.4.3 Construction of Building A on Lot 10 (within Lot 1)

Building A will be situated in the north-eastern corner of the Development Site fronting Herring Road.

Building A is proposed to be the first of five 12residential storey apartment buildings incorporating an additional 3 levels of basement car parking. Building A will be a contemporary building form comprising a dual tower form with a modulated façade providing articulation, façade relief and employing a range of materials and finishes.

The orientation of Building A will run lengthwise along Herring Road, with the building's primary address to Herring Road. Pedestrian access to the lift lobby will be directly from the Herring Road frontage, while vehicle access to the basement carpark will be from the new boulevard.

At ground level the building will comprise a mix of 1 and 2 bedroom apartments, main lobby, a retail space of approximately 96sqm and service areas including mailboxes, waste storage area, pump room, gas room, fire control room and fire hydrants.

The apartment composition of Building A is summarised below in **Table 4**.

Table 4 – Building A - Apartment Composition

	Number of Apartments				
Building floor	**1 Bedroom**	**2 Bedroom**	**3 Bedroom**	**4 Bedroom**	**Total**
Ground	1	5	-	-	6
First	11	2	-	-	13
Second	11	2	-	-	13
Third	9	3	-	-	12
Fourth	6	5	-	-	11
Fifth	6	5	-	-	11
Sixth	6	5	-	-	11
Seventh	6	5	-	-	11
Eighth	5	6	-	-	11
Ninth	6	5	-	-	11
Tenth	-	4	3	-	7
Eleventh	-	1	4	1	6
Total	**74**	**41**	**7**	**1**	**123**

The building proposes 3 metre floor to floor levels, which will provide a minimum of 2.7 metre floor to ceiling clearances, except within the proposed retail space which will have a floor-to-ceiling clearance of 3 metres.

The basement levels include the following:

- 174 car parking spaces, comprising:
  - 140 resident parking spaces, including 13 accessible resident parking spaces.
  - 31 visitor parking spaces, including 1 accessible visitor parking space.
  - 3 retail parking spaces, including 1 accessible parking space.
- A carwash bay.
- Electrical switch room.
- Exhaust plant.
- Storage areas.
- Bicycle storage areas / racks.

The built form is a modulated architectural form comprising two tower elements connected by a central lift core. The building façade is broken down vertically into a base middle and top using different façade panels, materials, and incorporating articulated balcony spaces. The façade is further articulated horizontally with the use of 'slots' such including a glazed air-lock which runs the height of the building providing visual interest to the building form as well as increasing cross-ventilation for apartments.

Further details of the Building A design are contained within the Architectural Design Statement prepared by Turner + Associates attached in **Appendix D**.

3.4.4 Construction of Sales and Display Centre

As part of the works for the Project Application for Building A, a temporary sales and marketing office will be constructed. The office will be located at the south-eastern corner of the site. A copy of the plan is included in the **Volume of Plans, Part 2 (iii) Building A Plans (Drawing No.A281**.)

As shown on the plan, the building will be single level structure with a building height of 3.6mertres. The building will have a reception and meeting room area, office space and a two bedroom display suite. Once disabled access toilet will be provided within the building. Car parking will be provided alongside the building and separated from the construction traffic.

Finally, external signage will be mounted to the wall to signal the location of the display suite to guide prospective purchasers.

3.4.5 Vehicle Access

The Project Application (Building A) proposal includes construction of the access from Herring Road and first part of the new 'Type 3' local access road which is to run along the southern boundary of proposed "Lot 1" connecting with Herring Road. The new road will service the vehicle entry to the three-level basement car park proposed for Building A, as well as service the future stages of the subsequent residential development.

The new local access road is proposed to be designed in accordance with Council's DCP controls for a Type 3 road, with appropriate width, on-street parking, and verge creating a tree-lined boulevard running east-west through the site.

The road has been designed to a scale appropriate to support the subsequent stages of development of the Concept Plan, as well as vehicle, bicycle and pedestrian movements associated with the estate.

3.4.6 Physical Infrastructure

Preliminary infrastructure investigations have revealed that the Morling College site is currently serviced by electricity, gas, sewer, water and telecommunications.

The Project Application (Building A) works include securing the necessary service provisions to support Building A. This will include upgrading the existing servicing infrastructure for electricity, gas, sewer, water and telecommunications to support the proposed increase in intensity of use due to the up-lift in land use density.

The following service upgrades are proposed as part of the Project Application (Building A) works:

Stormwater Management

The Project Application (Building A) stormwater management works are illustrated on the Stormwater Concept Plans prepared by Taylor Thomson Whitting included in the separate **Volume of Plans, Part 4 – Road and Stormwater Civil Plans**,. It includes construction of a stormwater management system for Building A comprising:

- A design strategy to drain the site in a staged manner through the construction of stormwater pipe within the new access road reserve to connect through the site to the University Creek and allow low-flow / first flush stormwater to be filtered through the bio-swale before being discharged into the creek. Detention and reuse tanks for water reuse irrigation for landscaping.
- Stormwater management system for Building A including detention and reuse tanks for landscaping irrigation.
- Stormwater drainage of Building A and the first 30 metres of the new boulevard existing stormwater system within Herring Road.

Utility Infrastructure

- Electricity and Telecommunications – Electricity and telecommunication servicing will be installed in three stages as illustrated on the utility servicing plans attached in **Appendix G.** Key elements include:
  - Requirement for Z(1000GVA) kiosk type substation for the entire site.
  - The initial stage will be installed during construction of Building A and will include implemented during installation of a substation to service Building A. The same kiosk substation will service Buildings B and E in the future. Conduits with in the new road reserve will service Buildings C and D.
  - The next stage will be installed during construction of Building C and will include extending the conduits within the new Boulevard reserve to a second substation to service Buildings C and D.
  - The final stage will be installed during construction of Building E and will include the extension of the telecommunication conduits from Herring Road to Building E.
- Natural Gas –Gas services will be provided in accordance with the Natural Gas Main Infrastructure Staging Plan prepared by Harris Page and Associates, dated February 2010 and attached in **Appendix H**.
- Water and Sewer – Greg Houston Plumbing has undertaken preliminary investigations of the adequacy of the existing water and sewer infrastructure. The investigations identified possible amplification of water servicing infrastructure from Epping Road to 1 metre past the northern side of the new boulevard to service Building A. All subsequent buildings will be serviced from infrastructure within the new boulevard. A copy of the plans is included at **Appendix I.**

4 Policy Assessment

4.1 Summary of Policy Assessment

A summary of the consistency with the strategic and statutory policies relevant to the project are summarised in the table below.

Instrument/Strategy	Applicability	Comments
NSW State Plan	Concept Plan	Consistent. Refer to **Section 4.2.1**
Sydney Metropolitan Strategy	Concept Plan	Consistent. Refer to **Section 4.2.2**
Inner North Subregion Draft Subregional Strategy	Concept Plan	Consistent. Refer to **Section 4.2.3**
SEPP 65 – Design Quality of Residential Apartment Development	Concept Plan & Building A Project Application Building	Consistent. Refer to **Section 4.3.1 & Appendix D**
SEPP BASIX (2004)	Project Application (Building A)	Complies. Refer to **Section 4.3.2 & Appendix F**
SEPP Infrastructure (2007)	Concept Plan	RTA referral required. Refer to **Section 4.3.3**
SEPP 55 - Remediation of Land	Concept Plan	Satisfies requirements. Refer to **Section 4.3.4 & Appendix R**
Ryde Planning Scheme Ordinance 1979	Concept Plan & Project Application (Building A)	Permissible. Departs from development standards, consistent with objectives. Refer to **Section 4.3.5 & 5.1**
Draft Ryde Comprehensive LEP 2008	Concept Plan & Project Application (Building A)	Permissible. Departs from development standards, consistent with objectives. Refer to **Section 4.3.6 & 5.1**
DCP 2006	Concept Plan & Project Application (Building A)	Consistent. Refer to **Section 4.4.1** & **Appendix E**
Draft DCP 2006	Concept Plan & Project Application (Building A)	Consistent. Refer to **Section 4.4.2**

4.2 Consistency with Strategic Planning Policy

The Concept Plan proposal and proposed stages of development are consistent with the strategic targets and directions for development within the regional, subregional and local context.

4.2.1 NSW State Plan

The NSW State Plan 2010 provides targets for creating a 'better transport and liveable cities'. The relevant priorities and targets are outlined below.

- ***Improve Public Transport System*** *- Increase share of commuter trips made by public transport to and from the Sydney CBD within peak hours to 80% by 2016.*
  - By providing for approximately 557 dwellings within close walking distance to the Macquarie Park train station and regional bus services, this project will positively contribute to the governments target.

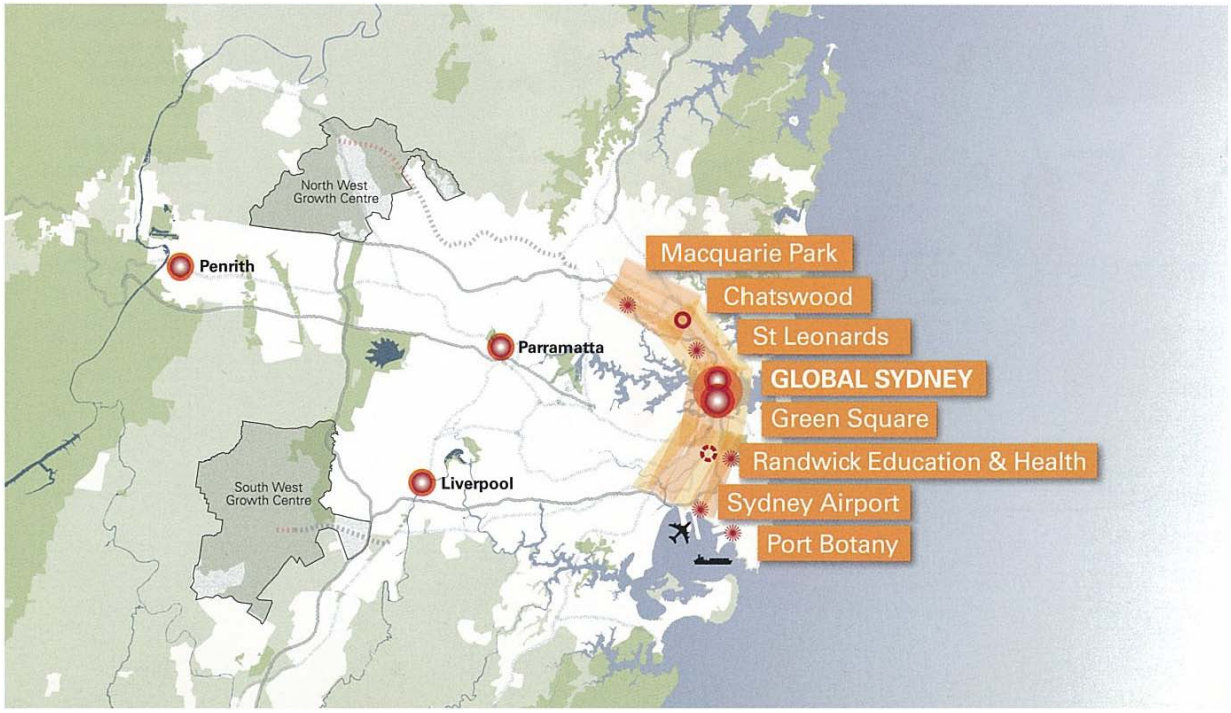
- ***Increase the number of jobs closer to home*** – *Increase the percentage of population living within 30 minutes by public transport of a city or major centre.*
  - The proposal satisfies this target given its proximity to the Macquarie Park Business Park and the metropolitan rail services linking the site to Chatswood and the CBD within 30min travel time.
- ***Grow cities and centres as functional and attractive places to live, work and visit***
  - The proposal is entirely consistent with this priority as the proposal provides for housing within the Macquarie Park Corridor, where future additional housing growth opportunities are limited. The inclusion of new residents in the locality will add to the vibrancy of the area and help foster Macquarie Park as a true multi-functional destination for work, study and living.

4.2.2 Sydney Metropolitan Strategy

The Sydney Metropolitan Strategy (Metro Strategy) (2005) is the state government strategic policy for planning future development across Greater Metropolitan Sydney over the next 25 years.

The Metro Strategy identifies Macquarie Park as part of the **Global Economic Corridor** that extends from Port Botany through the city CBD, North Sydney, Chatswood and ending at Macquarie Park, as shown in **Figure 15** below.

Figure 15 – The Global Economic Corridor



Source: Metropolitan Strategy (2005), page 108

In 2001, the global economic corridor accommodated approximately 700,000 jobs, of which approximately 32,000 were situated in the Macquarie Park corridor. The strategy seeks to increase jobs within the Macquarie Park Corridor to 55,000 jobs in Macquarie Park by 2031.

Macquarie Park also accommodates approximately 31,000 students and 800,000sqm of commercial floor space, which contributes to it being identified as a *'Specialised Centre'* in the Metro Strategy, which has been strengthened by the expansion of the northern train line through Macquarie Park.

The Metro Strategy's housing vision is to provide three-quarters of new housing within strategic centres, small centres and corridors within walking distance of shops, jobs, services and transport nodes.

The Development Site's strategic position within the Macquarie Park Corridor and within walking distance of a wide range of services and infrastructure indicate that housing on this strategically located site is consistent with the vision and aims of the Metro Strategy.

4.2.3 Inner North Subregion Draft Subregional Strategy

The *Inner North Subregion Draft Subregional Strategy* targets to increase employment within the Inner North subregion by 60,000 jobs and accommodate more than 30,000 new dwellings by 2031.

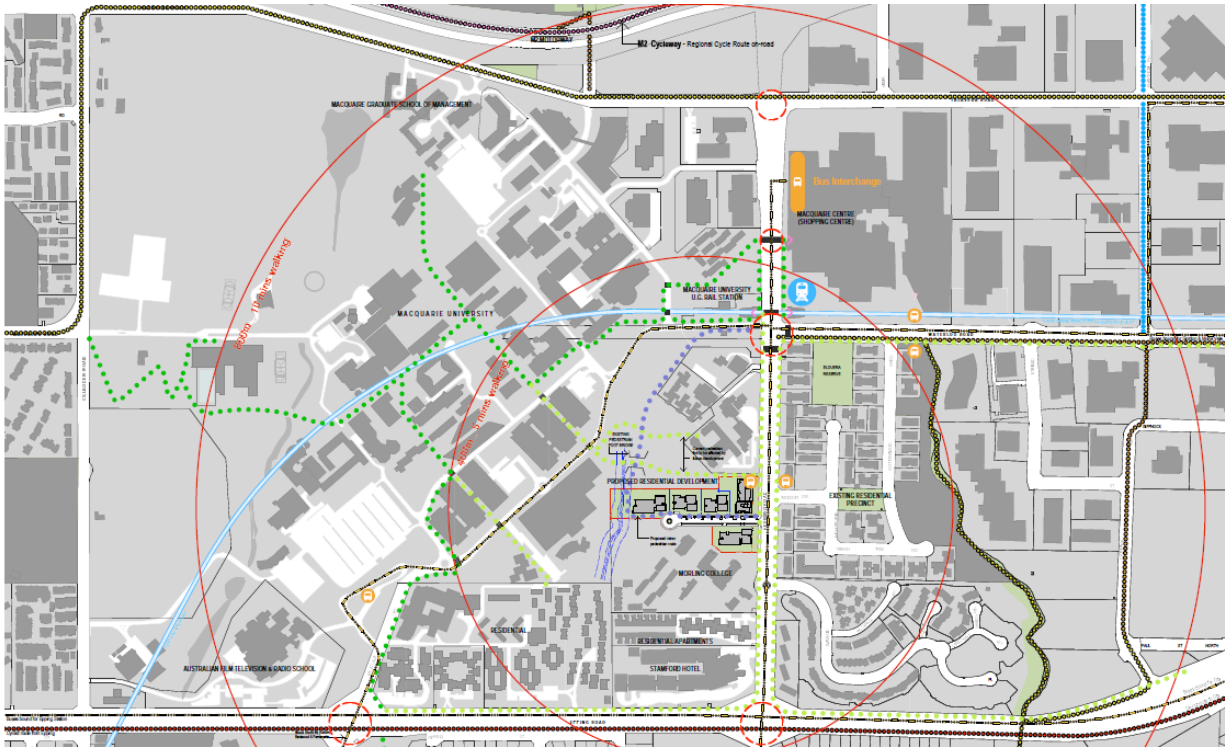
Macquarie Park is identified as a *'Specialised Centre'* which has a target to increase employment by 23,000 jobs and commercial floorspace by 900,000sqm by 2031. Student numbers at the University are also planned to increase significantly through the approved expansion of the campus. The future expansion of the Macquarie Park Corridor will continue to strengthen the state and regional significance of this major multi-faceted centre to the NSW Economy.

The Draft Subregional Strategy identifies the key assets and drivers of the centre as:

- Macquarie University
- Business Parks
- Research Parks, CSIRO
- Shopping Centre
- New Rail Link

The Development Site's strategic location within the Macquarie Park centre places it within walking distance of each of these key assets as illustrated in **Figure 16**, providing a highly accessible and highly serviced development. The strategic importance of the location of the Development Site lends itself to a high-density development to maximise the sites serviceability.

Figure 16 – Strategic Location of Development Site



(refer to Drawing No. A106 by Turner and Associates in the Volume of Plans for a larger scale plan)

The recent opening of the three railway stations serving the Macquarie Park Corridor represents a substantial public infrastructure investment that has significantly improved linkages to Macquarie Park. This new infrastructure has stimulated development within the Macquarie Park Corridor. The Corridor is therefore in the early phases of transforming into the government's vision as a major multi-functional centre of technology, enterprise and education.

The Subregional Strategy outlines a range of key directions and actions with respect to housing. The four key directions to the housing strategy are summarised as follows:

- To provide more housing opportunities to support a diverse workforce and population.
- To increase housing choice as part of the housing targets
- Plan for 30,000 new dwellings
- Enable communities to 'age in place'.

The Concept Plan proposal seeks to add approximately 557 new dwellings to the residential dwelling supply within the Macquarie Park. The new dwellings will contribute to achieving the following actions for the Housing Strategy as outlined in *Inner North Subregion Draft Subregional Strategy*:

- C1 – Ensure adequate supply of land and sites for residential development through:
  - Providing residential development within an existing serviced area directly adjacent to other residential land.
  - Maximising the potential for the site to contribute to the housing supply within the subregion and assist Council in identifying appropriate sites to achieve its target dwelling growth of 12,000 new dwellings by 2031.
  - Providing new housing products within the Macquarie Park corridor which benefit from the sites environmental features through integration into the developments open space.
- C2 – Plan for a housing mix near jobs, transport and services by:
  - Providing a range of dwelling types offering between 1 and 4 bedroom dwellings responding to the average household size.
  - Responding to the Development Site's close proximity to major new rail infrastructure.
  - Expanding the housing supply within a walkable distance form the train station, university, and shopping centre.
- C5 – Improve the quality of new development and urban renewal through:
  - Providing high-quality architectural design with high-quality materials and finishes.
  - Incorporating a cohesive landscape strategy for the development as a whole, that is individualised for each allotment to give each building a separate identity.
  - Designing each residential apartment building in accordance with the *SEPP 65 Design Quality of Residential Flat Development* design quality principles and rules of thumb.
  - Redevelops a currently underdeveloped infill site located within a highly serviced existing urban area.

Additionally, the provision of quality apartments within the Corridor will create opportunities for workers, students and local residents to enjoy the benefits of the range of services and transport infrastructure available and strengthen the vitality of the place.

4.3 Consistency with Statutory Planning Instruments

4.3.1 State Environmental Planning Policy 65 – Design Quality of Residential Apartment Development

SEPP 65 contains ten design principles aimed to ensure a high quality of residential apartment development across the state is achieved. In addition the Residential Apartment Design Code that accompanies SEPP 65 provides more detailed guidelines and 'rules of thumb' that require consideration.

Turner + Associates has prepared a Design Statement and Residential Apartment Design Code compliance assessment for Building A, as part of the Project Application (Building A) documentation, attached in **Appendix D**.

Overall, the assessment concludes that the proposal satisfies the requirements of SEPP 65 for the following reasons:

- Provides a injection of modern medium-density residential accommodation to support the expanding Macquarie Park employment corridor, and responding to the expansion of the Macquarie University educational facilities within the approved Macquarie University 25 year Masterplan (the University Concept Plan).
- Scale and height will provide a transition between the height anticipated in the residential areas on the eastern side of Herring Road and the University buildings under the approved University Concept Plan for the land to the north and west.
- Buildings with frontage to Herring Road being designed and orientated towards Herring Road, responding to the existing street-network, while also providing street definition to the proposed new local access road through the site.
- Provides a density and scale responsive to the Development Sites walkability to the new train station.
- Energy efficient design has been incorporated in the building design in accordance with BASIX standards. Approximately 72.4% of dwellings will be cross-ventilated.
- 10% of apartments have been designed as adaptable as detailed in the Access Report prepared by Accessibility Solutions attached in **Appendix M**.
- Each of the proposed dwellings has private open space which optimises capturing solar access where available, while the building design incorporates articulation to maximise natural ventilation by capturing cross-breeze through articulating the built form.
- Building security has been provided through providing a secure lobby access for residential dwellings, while the building design addresses Herring Road and the proposed new local access road providing high-level passive surveillance to these public spaces.
- Provides a mix of 1 to 4 bedroom modern residential dwellings which supplement the older-style residential units on the eastern side of Herring Road. The mix of dwelling size will cater for both students of the university and workers within the Macquarie Park corridor.
- The buildings will differ in appearance with their own individual identities however will be tied together through similar colours, materials and finishes.

4.3.2 State Environmental Planning Policy (BASIX) 2004

The Project Application (Building A) includes a BASIX Certificate which demonstrated that the proposed mixed use residential apartment building complies with the water and energy savings targets for new developments within NSW.

A copy of the BASIX Summary Report by Cundall is attached in **Appendix F**.

4.3.3 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure 2007) aims to facilitate the effective delivery of infrastructure across the State, including consultation with public authorities during the assessment process.

The Infrastructure SEPP applies to the Concept Plan proposal, the Subdivision Project Application and the Project Application for Building A.

Section 104 prescribes the types of traffic generating activities that need to be referred to the NSW Roads & Traffic Authority for comment prior to determination. The project is a type of development described in Column 1 in Schedule 3, as the Concept Plan proposes approximately 557 apartments. As such, the RTA will need to be consulted during the Concept Plan assessment process.

The Concept Plan proposal has been considered by Colston Budd Hunt & Kafes (CBHK) traffic consultants. Details of their assessment of the traffic implication of the Concept Plan are within **Section 5.2**.

4.3.4 State Environmental Planning Policy 55 – Remediation of Land

State Environmental Planning Policy No 55 states that land must not be rezoned or developed unless contamination has been considered and, where relevant, land has been appropriately remediated.

The Phase 1 Contamination Assessment undertaken by Douglas Partners attached in **Appendix R** is based on information complied from limited soil sampling of the site, however concludes that the site is suitable for the proposed residential concept plan proposal.

The findings and conclusions of the Douglas Partners investigations are discussed in more detail below in **Section 5.12**.

4.3.5 Ryde Planning Scheme Ordinance

As the Concept Plan and Project Applications are being considered under Part 3A of the *EP&A Act*, strict compliance with the applicable EPI's is not mandatory. That said, the DGEAR's require the EA to address the relevant planning provisions applicable to the Development Site.

The site is currently zoned 3(h) Business Special (Mixed Activity) under the Ryde Planning Scheme Ordinance (Ryde PSO), within the Macquarie Park Corridor controls adopted in Part 10 of the Ryde PSO (also known as Ryde LEP 137).

The 3(h) zone permits all development with development consent, unless expressly excluded within the land use table. The proposed use of the site for medium density residential purposes is permissible in the zone.

The objectives of the Macquarie Park Corridor are:

(a) to promote Macquarie Park Corridor as a premium location for globally competitive businesses with strong links to the university and research institutions and an enhanced sense of identity, and

(b) to implement the State Government's strategic objectives of integrating land use and transport, reducing car dependency and creating opportunities for employment in areas supported by public transport, and

(c) to guide the quality of future development in the Corridor, and

(d) to ensure that the Corridor is characterised by a high-quality, well designed and safe environment that reflects the natural setting, with three accessible and vibrant railway station areas providing focal points, and

(e) to ensure that residential and business areas are better integrated and an improved lifestyle is created for all those who live, work and study in the area.

The Concept Plan proposal satisfies the Macquarie Park Corridor in the following manner:

- It provides modern residential housing stock to service the expanding business park precinct and future growth of Macquarie University.

- Creating residential development within a walkable distance from key public transport network and transport interchange hub which will reduce car dependency and create opportunities for people to live close to work.
- Increase the range and stock residential accommodation available to works within the Macquarie Park Corridor, and for international students at Macquarie University.
- The design responds to the landscaped local context of the Development Site, where developments are on large allotments with large floor plates and surrounded by landscaped grounds.
- The Concept Plan positively contributes towards providing a precinct where people can live, work and study within the same area.

Clause 93 of the Ryde PSO requires that a consent authority must not grant consent to development within the Macquarie Park Corridor unless it has considered whether the development complies with the Built Form matters outlined in **Table 5** below.

Table 5 – Clause 93 of Ryde PSO Consideration of Built Form Development Controls

Consideration	Consideration in Environmental Assessment
*(a) the **planning principles** and objectives for the Corridor set out in Schedule 18 and clause 94, and*	Refer to **Appendix E**.
*(b) the objectives and development standards for **floor space ratios** set out in clause 96, and*	Refer to **Section 5.1**.
*(c) the objectives and development standards for **building height** set out in clause 97, and*	Refer to **Section 5.1.**
*(d) the objectives and development standards for **off-street parking** set out in clause 98.*	Refer to **Section 5.1**.

Planning Principles

The planning principles to be considered under Clause 93 of the Ryde PSO for the Macquarie Park Corridor address environmental, social and economic factors the development should positively contribute to. An assessment of the project against the planning principles is included in the Compliance Tables in **Appendix E**.

4.3.6 Draft Comprehensive Ryde Local Environmental Plan 2008

Draft Ryde Local Environmental Plan 2008 (draft LEP 2008) has been publicly exhibited and is currently awaiting Ministerial gazettal. The Section 68 request for the Minister to make the plan was forwarded to the Department of Planning in August 2009 and to date remains unresolved.

Under draft LEP 2008, the site is proposed to be zoned B4 Mixed Use. The proposed development is permissible within the B4 zone.

The exhibited draft LEP 2008 includes the following key development standards for the Development Site:

- A maximum Floor Space Ratio of 2:1.
- Maximum height of 27.5 metres along the land fronting Herring Road, and 21.5 metres for the balance of the Development Site.

The Draft LEP 2008 controls for the Development Site did not increase the maximum FSR or maximum height permissible on the Development Site.

It is noted that a supplementary Amendment 1 to Draft LEP 2008 was prepared by Council but not formally exhibited.

This included incentive height controls of 36.8m to Herring Road, and 27.5 metres for balance of the site. Amendment 1 is currently being reconsidered by Council as evidenced in their correspondence to the Department of Planning (dated 21 January 2010) that:

> *"Council is currently preparing a LEP amendment that includes revised Floor Space Ratio (FSR) and Height controls. Whilst this LEP amendment has not yet been finalised or approved for exhibition, it may in time provide revised controls that allow for greater height and increased FSR."*

Building A will have an FSR of 2.4:1 and a height of 39.6 metres. **Section 5.1** of this report provides an assessment of the Concept Plan (incorporating Building A) having regard to the current and draft exhibited statutory controls, together with the future prospect of greater height and FSR controls being proposed by Council in the near feature and the implications of the Macquarie University Concept Plan approval that significantly exceeded Council's controls.

4.3.7 Ryde Development Contributions Plan 2007

The methodology for the payment of Development Contributions for the overall Concept Plan and for the Building A Project Application are contained within the Draft Statement of Commitments table attached in **Appendix C**.

4.4 Consistency with Non-Statutory Guidelines

4.4.1 Ryde Development Control Plan 2006

Ryde Development Control Plan (DCP) 2006 contains general controls for development within the Macquarie Park Corridor as well as specific controls for Special Precincts.

Under the DCP, the Development Site falls within the "Macquarie University Station Precinct" which encompasses the railway station, Macquarie University and Macquarie Centre shopping complex.

A detailed compliance table addressing the relevant provisions of the Ryde DCP 2006 is attached in **Appendix E** which demonstrates that the Concept Plan and Project Application (Building A) are generally consistent with the key objectives of the DCP controls.

In summary, the Concept Plan satisfies the DCP objectives of the Macquarie University Station Precinct because:

- It will provide housing stock that will support the surrounding education and commercial lands population.
- The scale and form of development will positively contribute to the public domain, and increase the intensity of use of local services and public transport infrastructure.
- The development will contribute to the provision of public infrastructure, by expanding public open space and improving the riparian corridor of University Creek.
- The Concept Plan has had regard to the approved Macquarie University Concept Plan and provides a responsive scale and form, and consistent density presentation to Herring Road.

4.4.2 Draft Ryde Development Control Plan 2008

To ensure that the Ryde DCP is consistent with the aims and objectives of the Draft Ryde LEP 2008, on 16 June 2009 Ryde Council resolved to adopt a number of amendments to DCP 2006 which are to come into effect upon gazettal of the Draft Ryde LEP 2008. These changes have minimal impact on the Concept Plan proposal, with the key change relating to modifying the numerical standards within the DCP to be in line with the definitions within the Draft Ryde LEP 2008.

5 Environmental Assessment

5.1 Built Form Urban Design & Public Domain

5.1.1 Rationale for Concept Plan Design

The state government has a clear vision to promote Macquarie Park as Australia's leading Business Park.

Macquarie Park is recognised in the Inner North Subregional Strategy as a "Specialised Centre" for technology, enterprise and education. A key aim of the Subregional Strategy is to strengthen the role of Macquarie Park as the northern anchor of the Global Economic Corridor of Sydney and improve access to Macquarie Park.

The following action plans within the Subregional Strategy seek to achieve these strategic aims:

- A1 - Increase jobs (by 23,100) within the Macquarie Park Corridor to total 55,000 by 2031.
- B2 - Increase density in centres whilst improving liveability.
- B3 - Cluster business and knowledge-based activities in strategic centres.
- B4 – Concentrate activities near public transport.
- C2 - Plan for housing mix near jobs, transport and services.

The recent opening of the three train stations serving the Macquarie Park Corridor represents a substantial public infrastructure investment that has significantly improved linkages to and from Macquarie Park.

The new rail infrastructure together with a clear state planning direction has, and will, continue to act as a catalyst for continued investment and development within the Macquarie Park Corridor. In addition to the Private Hospital to be constructed within the new Macquarie Research Park, the Macquarie University Concept Plan approved by the Department of Planning in August 2009 for the following educational expansion, is future evidence of this change:

- 61,200sqm of academic GFA within the Academic Core.
- 400,000sqm of commercial GFA and parking outside the Academic Core.
- 3,450 beds within the University Housing Precinct for University purposes only.

The exhibited version of Draft LEP 2008 proposed only a one storey height increase but no increase to FSR controls for the site from the current controls within the Ryde PSO. We understand that Ryde Council are now currently reviewing the height and FSR controls in the Draft LEP 2008 to align them to meet the strategic direction of State planning strategies.

The physical scale of development approved within the adjacent university site coupled with the limitation to facilitate housing growth around the three new railway nodes, necessitates a more thorough consideration of the urban form to determine the most appropriate development response for the site.

The current (and exhibited draft) local planning controls that apply to the site do not provide adequate scope to accommodate a scale of development that recognises its strategic importance within Macquarie Park nor do they enable the achievement of an appropriate contextual height and form relationship with the future university buildings.

The Concept Plan therefore proposes a built form outcome that will achieve an appropriate contextual building scale and form outcome for the site given its strategic location within the Macquarie Park Corridor. The following section outlines our justification for the proposed density, height and building form.

5.1.2 Design Considerations

The building height, form and overall scale of the Concept Plan have been derived having regard to the following considerations:

- The existing site conditions – including the prevailing slope, street frontage presentation, pedestrian networks and environmental constraints.
- The current and planned applicable local statutory controls.
- The state strategic planning directions – including the relevant actions and targets within the State Plan and Subregional Strategy.
- The current and future local urban context – focusing on the Macquarie University Concept Plan approval and future intensification of surrounding development arising from the gazettal of the Draft Ryde LEP 2008.
- The resultant implications of the Concept Plan for the future resident and public domain amenity in and surrounding the site.

5.1.3 Justification for Concept Plan (including Building A)

1. Constitutes a site responsive design

- *The Concept Plan achieves a positive site responsive outcome for the following reasons:*
  - The plan allows for the retention of trees along the north-east boundary which is defined by University Creek and establishes a 20 metre building setback from the centreline of the creek to preserve a riparian buffer. The Statement of Commitments includes measures to rehabilitate the riparian zone to enhance its biodiversity quality, from its current disturbed condition.
  - The site slopes down to the north-west away from Herring Road. The Concept Plan has utilised this slope to achieve a varied ground level presentation for each building and an overall 'stepped' appearance of the buildings.
  - The new street boulevard has been positioned to offer a scenic view from Herring Road down to the riparian zone in the background. The shared pedestrian and cycle path will connect directly with the pathway on Herring Road and provide a link through the riparian zone to the University land in order to provide a continuous path of travel.
  - The natural site slope has been utilised to allow for the car parks to be easily accessed, while being hidden within the hillside.
  - Building A has been designed to directly front Herring Road which will create a strong and active streetscape presence.
  - The communal open space areas have been located to the north and north-west of the building forms to maximise solar penetration to ensure these spaces are attractive and functional to use.

2. **Satisfies the objectives of local policy controls**

- *Satisfies the objectives for the Macquarie Park Corridor (Clause 94 of PSO) for the following reasons:*
  - It provides modern residential housing stock to service the expanding business park precinct and future growth of Macquarie University.
  - It will create residential development within a walkable distance from key public transport network and transport interchange hub which will reduce car dependency and create opportunities for people to live close to work.
  - Increase the range and stock of residential accommodation available to workers within the Macquarie Park Corridor, and for students of Macquarie University.

- The design responds to the landscaped local context of the Development Site, where developments are on large allotments with large floor plates and surrounded by landscaped grounds.
- The Concept Plan positively contributes towards enhancing the Macquarie University Station Precinct as a place where people can live, work and study.
- The height and orientation to the street of Building A will contribute to framing Herring Road as a key corridor that leads to a major active public transport and retail node.

- *Satisfies the floor space, height and off-street parking objectives (clauses 96 to 98) of the Ryde PSO for the following reasons:*
  - The Concept Plan has comparatively lower building heights and density relative to the approved University Concept Plan which upholds the objective of achieving the greatest density and building height around the rail station nodes (refer to **Figure 19**).
  - The Concept Plan provides a new local road that will encourage future connections.
  - The future buildings will positively contribute to the objective of creating a focal node around the railway station through their scale and streetscape presentation.
  - The height and FSR of Building A, while departing from the numeric control, will achieve the objective of consolidating development around stations, providing a focal node that clearly highlights the role of the station.
  - Furthermore, in order to achieve an acceptable height and scale to the future buildings along Herring Road (within the Macquarie university site) a contextual approach to determining the most suitable height and scale was required which has necessitated departing from the controls. As outlined in this section, the proposed height and scale is appropriate for the site and is considered an important outcome in the local context due to the limited opportunities for residential development to be established within walking distance to the 3 new railway stations within Macquarie Park.
- *Satisfies the planning principles for the Macquarie Park Corridor (Schedule 18 of Ryde PSO)*
  - As outlined in the Compliance Table in **Appendix E**, the Concept Plan will positively contribute to Council's objectives for new development to achieve a transition between the corridor development and surrounding areas as well as maximising the public domain outcomes.
- *Satisfies the Macquarie University Station Precinct Controls (DCP 2006 Part 4.5)*
  - As outlined in the Compliance Table in **Appendix E**, the Concept Plan will positively contribute to the Herring Road streetscape and overall quality of development and local amenity sought by Council's controls.
  - The development will read as a contextually harmonious building form with the future development within University. And together, both sites will portray a well-defined active street presence that is entirely appropriate to proximity to a major nodal point being the Macquarie university railway station.

3. Entirely consistent with state planning strategy

From a strategic planning perspective the Concept Plan is appropriate for the following reasons:

- *It satisfies the priorities of the "better transport and liveable cities" actions within the NSW State Plan 2010.*
  - It will contribute to the target of increasing the share of commuter trips made by public transport to and from the Sydney CBD within peak hours to 80% by 2016, by establishing 557 dwellings (or some 1,000 people) within walking distance to a railway station and regional bus services.

- It will increase the percentage of population living within 30 minutes by public transport of a city or major centre through the ready access to bus and rail services to Chatswood, North Sydney and the CBD.
- The Macquarie Park corridor is dominated by the commercial office and University developments. The inclusion of approximately 1,000 new residents on the Development Site will positively add to the vibrancy of the area and help foster Macquarie Park as a true multi-functional destination for work, study and living.

- *It satisfies the Subregional Strategy **Action C1** – ensure adequate supply of land and sites for residential development*
  - Maximising the Development Site's potential to contribute some 557 dwellings towards Ryde Council's target of 12,000 additional dwellings to be delivered by 2031.
  - The provision of 557 dwellings over the life of the staged development of the Concept Plan will therefore deliver approximately 5% of the new housing stock targeted for Ryde Council by 2031 on a single site.
  - Providing residential development within an existing serviced area directly adjacent to other residential land.
  - Maximising the potential for the site to contribute to the housing supply within the subregion and assist Council in identifying appropriate sites to achieve its target dwelling growth of 12,000 new dwellings by 2031.
  - Providing new housing products within the Macquarie Park corridor which benefit from the sites environmental features through integration into the developments open space.
- *It satisfies the Subregional Strategy **Action C2** – plan for a housing mix near jobs, transport and services by the following:*
  - Providing a range of dwelling types offering between 1 and 4 bedroom dwellings responding to the average household size.
  - Responding to the Development Site's close proximity to major new rail infrastructure.
  - Expanding the housing supply within a walkable distance form the train station, university, and shopping centre.
- *It satisfies the Subregional Strategy **Action C5** – improve the quality of new development and urban renewal by the following:*
  - Providing high-quality architectural design with high-quality materials and finishes.
  - Incorporating a cohesive landscape strategy for the development as a whole, that is individualised for each allotment to give each building a separate identity.
  - Designing each residential apartment building in accordance with the *SEPP 65 Design Quality of Residential Flat Development* design quality principles and rules of thumb.
  - Redevelops a currently underdeveloped infill site located within a highly serviced existing urban area.
- *It satisfies the Subregional Strategy **Action B2** – increase densities in centres whilst improving liveability by the following:*
  - The site efficiently utilises land for residential development that is strategically located within easy walking distance to public transport services to encourage greater proportion of non-car transport movements. It is also in close proximity to Macquarie Shopping Centre that will further encourage walking or cycling trips to retail services. The scale of development proposed (with ground level retailing in Building A) will positively contribute to the vibrancy of the public domain areas in and around the key facilities in the centre strengthening the 'sense of place'.

- As illustrated in **Figures 17** to **19** below, the opportunities for future high quality residential apartment developments within close walking distance to the new train stations are very limited. This further highlights the strategic importance of this site in seeking to establish more residential living within Macquarie Park.
- **Figures 17-19** below identify the land area within 400 metres and 5 minutes walking distance to the railway stations within Macquarie Park, which is widely considered as the most desirable location for targeting increased residential densities.
- **Figure 17 –** Illustrates the Development Site and its proximity to the rail station. The only other residential development opportunities within this radius are within the existing multi-unit developments on the southern side of Herring Road. Development of this land into higher density residential could only be reasonably considered as a medium to longer term proposition.
- **Figure 18 –** Is the 'core' business park area with Macquarie Park. There is no existing residential development within this area and given the value of this land, the prospect of use for future housing is remote. Furthermore, Council's current and draft statutory controls prohibit residential apartments with the 400 metre radius and wider locality.
- **Figure 19 –** This radius around the station services the workforce within the Riverside Corporate Park. A small amount of the established residential area of North Ryde falls within the radius however the road and motorway act as significant barriers. Thus there is limited opportunity for future housing to occur within this node.

Figure 17 – Macquarie University Station 400m radius

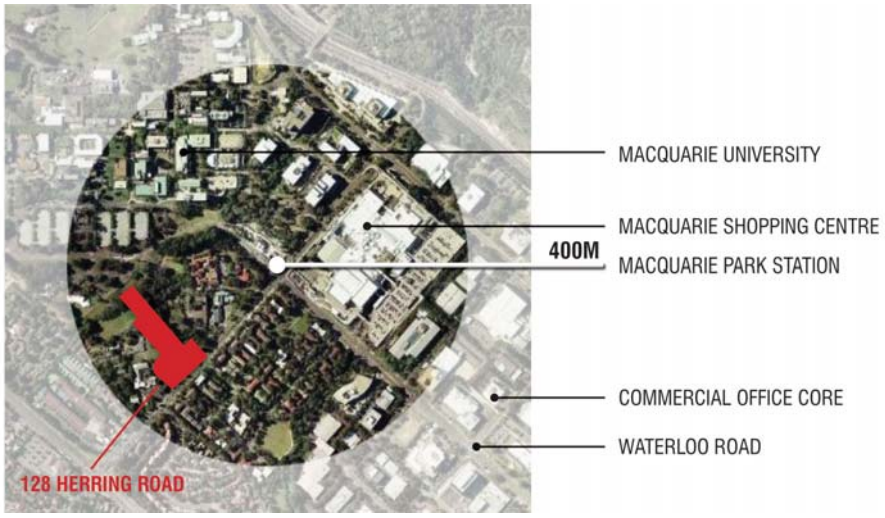


Figure 18 – Macquarie Park Station 400m radius

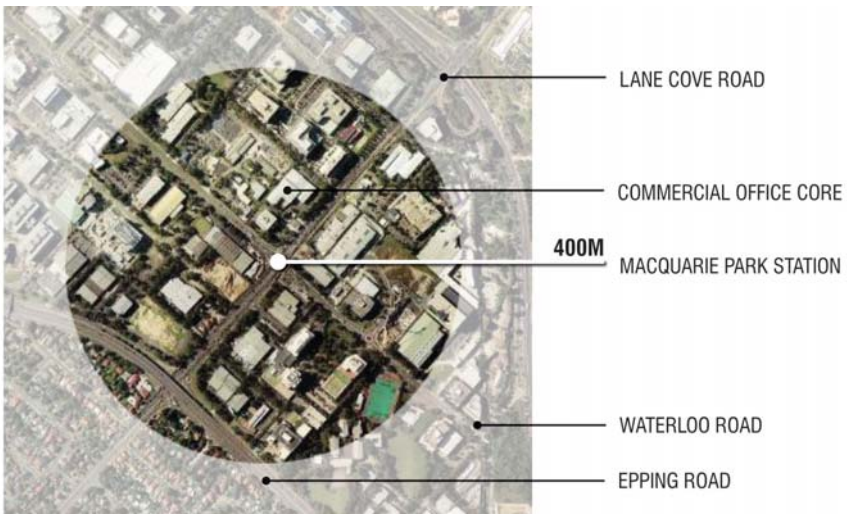
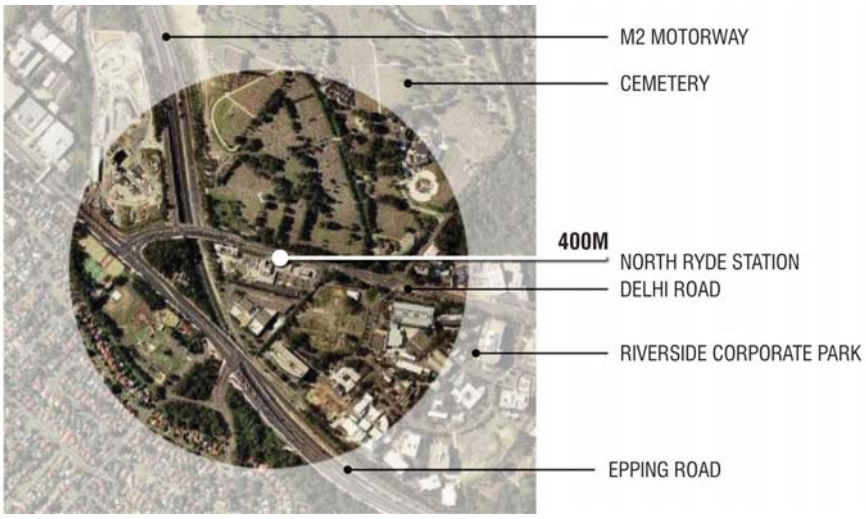


Figure 19 – North Ryde station 400m radius



4. **Achieves a contextually appropriate response to the future surrounding urban form**

From a local context perspective, the Concept Plan is considered appropriate for the following reasons:

- *The height is complementary to the future form of development along Herring Road*
  - The height study prepared by Turner + Associates (as shown in **Figures 20-22**) illustrates that the height is commensurate with the building height and skyline of the western side of Herring Road when viewed from the northern, southern and eastern approach.

Figure 20 – Height Study Analysis Section Parallel to Herring Road (eastern section)

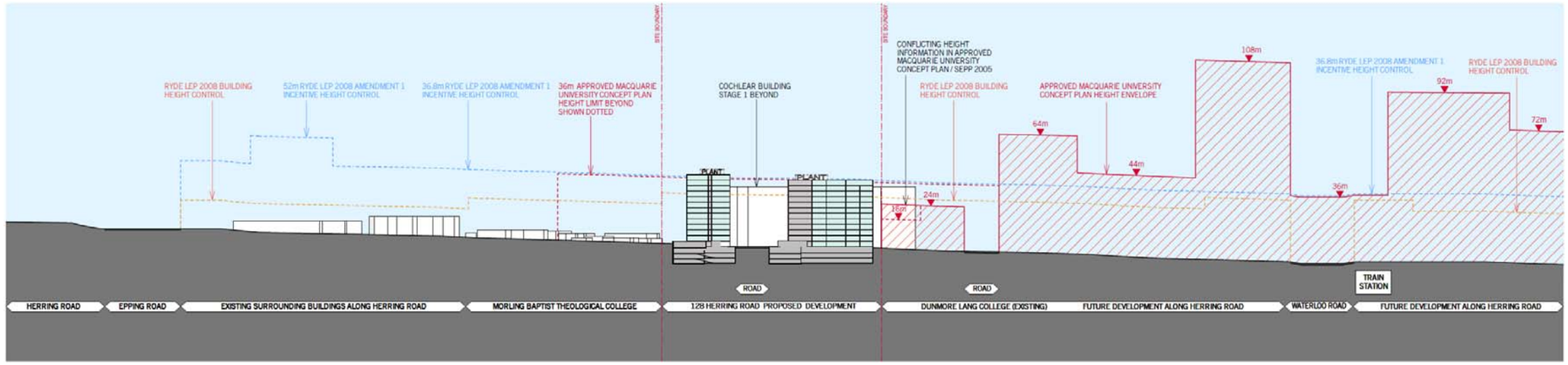


Figure 21 – Height Study Analysis Section Parallel to Proposed New Boulevard (southern section)

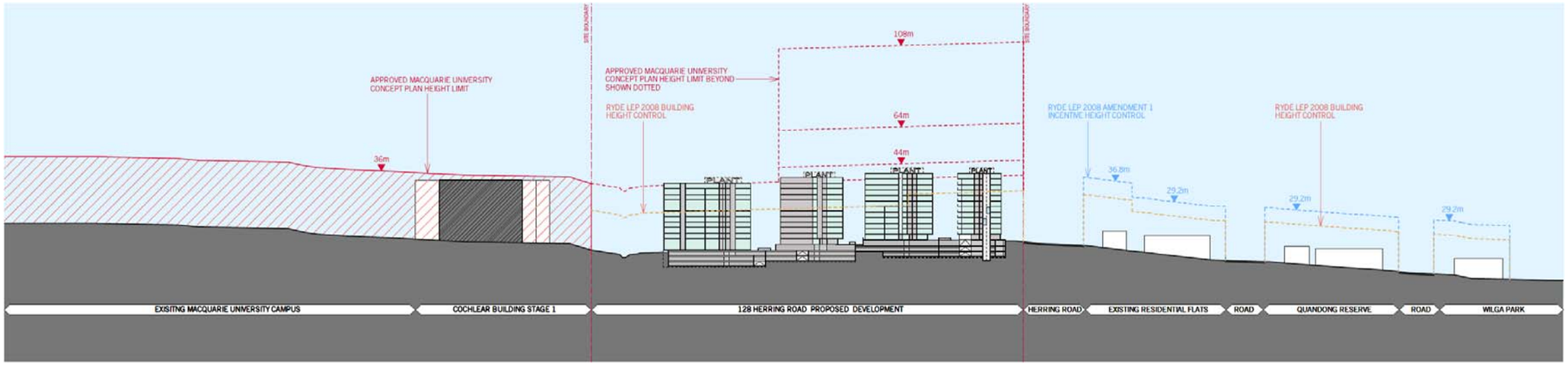
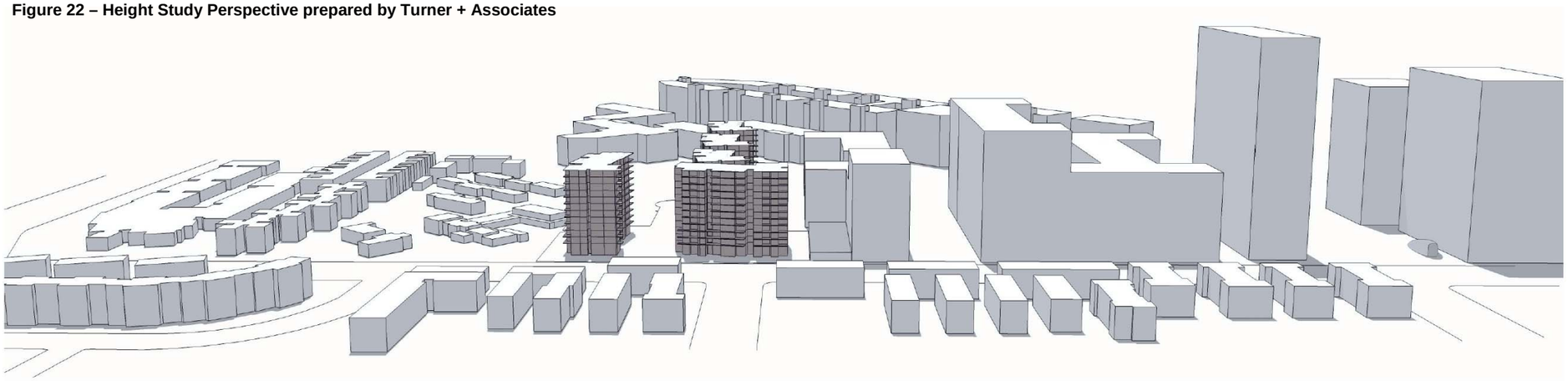


Figure 22 – Height Study Perspective prepared by Turner + Associates



- As shown in **Figures 20-22** the current and future building forms along Herring Road will vary with no consistent height pattern. That said it is evident that the building heights will generally shift from a two-storey built form at the Epping Road intersection towards a high-rise scale at the Waterloo Road intersection. This transformation of building heights (signalled by high rise development) will reinforce the DCP objective to create a 'sense of arrival' to the Macquarie University Station Precinct by contributing to the number of taller buildings towards the "precinct centre" at the intersection of Herring Road and Waterloo Road.
- The recently approved building heights within the University (Herring Road frontage) range from 16 metes above ground level (adjacent to the site) to 100 metres above ground level. While the buildings heights generally rise towards the rail station, the approved height pattern on the University land is varied as the highest building is not the corner building to Herring and Waterloo Roads. Within this urban context, the stepping up of the buildings on the Development Site from the approved University building on the north-eastern boundary, will still achieve a compatible relationship with the future urban form along Herring Road.
- **Figures 23** and **24** below illustrate the future scale of buildings along Herring Road and the relationship that Building A will have in the streetscape.

Figure 23 – Photomontage of Building A, approved envelopes of within the University in foreground and Building E outline in background

Figure 24 – Northern Perspective of Building A and approved 'block' building envelopes within the University site

- The southern (opposite) side of Herring Road currently comprises 4 storey (12 metre high) walk-up residential buildings. Under the draft Ryde LEP 2008, the maximum building height will increase to 27.5 metres. The new LEP controls will reinforce the transformation of the Macquarie Park Precinct into a higher density mixed use precinct around the rail and major retail node. The proposed building heights within the Concept Plan will have a complementary relationship with the future residential flat buildings on the southern side of Herring Road.

- *The massing is complementary to the future form of development along Herring Road*

  - The approved building forms within the Macquarie University Concept Plan constitute large floor plate 'institutional-style' buildings that rise in height towards the railway station. The forms of the five proposed residential buildings will have a less bulky and more articulated form than these institutional buildings which will act to reduce the visual mass and bulk of the buildings relative to the University buildings.

  - The Concept Plan building envelopes and floorplans are characterised by two tower forms connected by a common lift core. The dual tower floorplates allow for taller and narrower building forms which have the following key benefits:

    - The modulated built form with connected tower elements breaks the floorplates and building planes give the appearance of smaller buildings when viewed externally.

    - Minimise impacts on the amenity of surrounding properties, with narrower building forms casting thinner shadows which move more quickly.

    - Provide landscaped areas within each residential apartment building allotment for residential use.

    - Provide landscaped setbacks, which soften the visual impact of the built form at street-level.

  - Increase natural light and solar access for dwellings and improve solar access to communal open space areas through providing gaps between buildings.
  - Provides articulation along all building elevations which create visual interest and reduce the length of horizontal wall-planes.
  - The Project Application (Building A) details illustrate the finished outcome with high-quality materials and finishes. Future stages of the Concept Plan development will incorporate similar quality materials and finishes.
- The building forms have therefore been designed to respond to the changing character of development along Herring Road and the wider Macquarie University Station Precinct. The building forms will have a complementary and compatible relationship with the future development within the Macquarie Park University Precinct in terms of scale, height and orientation.
- Similarly, the development will be clearly distinguishable as a residential development juxtaposed to the future development within Macquarie University. With highly articulated building forms and a mix of finishes and materials the development will achieve a sympathetic relationship with surrounding residential flat buildings as well as act as a transitional site to the taller and larger form buildings recently approved within the Macquarie University.

- *The additional residential density will add to the vibrancy and vitality of the centre*
  - The proposed density will contribute to the vitality of the area and strengthening the residential sense of community.
  - Additional residential population will provide economic benefits through demand for services that will support local businesses.

5. **The amenity and public domain outcomes will be acceptable**

From an amenity and public domain perspective, the Concept Plan is considered appropriate for the following reasons:

- *It achieves the on-site residential amenity requirements*
  - The apartment layouts are efficient and maximise the amenity for residents and contain well proportioned rooms with an appropriate relationship to one another. Furniture layouts have been considered to ensure that occupants can reasonably use the spaces in the manner intended.
  - Apartments have a high degree of cross-ventilation with dual aspect orientation. 72% of apartments in Building A are cross ventilated, exceeding the SEPP 65 control of 60%.
  - All units have primary living areas facing the distant views or new communal open space.
  - Privacy is well maintained between apartments through orientation, internal layouts and separation of balconies amongst all 5 buildings.
  - All apartments will comprise balcony areas that meet or exceed the minimum area requirements to ensure adequate levels of private open space are provided.
  - 10% of apartments in Building A are provided as adaptable to meet the needs of the wider population.
- *It does not create any additional adverse off-site amenity impacts*
  - The bulk of the shadows from the development for the 'worst case scenario' (June 21 at 9am) will extend over the new local road onto the adjoining property. This shadow affectation will be minimal and by 1pm on 21 June, all shadows will fall either onto the subject site or across Herring Road ensuring adequate levels of direct sunlight access to adjoining properties will still be maintained. During 21st March, September and December, there will be no demonstrable off-site shadow impact arising from the proposed development.

- In terms of privacy, the concept plan achieves sufficient physical separation will avoid an unreasonable privacy intrusion upon the planned future development on the University land, as well as to existing development on Morling College.

- *It incorporates a number of public domain improvements for the site and surrounds*
  - Construction of a new Local Access Road as a "Boulevard" – The new local access road will includes a 3.8 metre wide pedestrian/cycle zone verge running along either side of the road. The verge will incorporate a unified landscaping treatment include street trees to create a boulevard presentation. Additionally, each individual allotment will include landscaping forward of the front building line, which will complement the verge planting, however provide an individual identity to each building.
  - Riparian Corridor Regeneration – The riparian corridor of University Creek will be regenerated as discussed in **Section 5.7.2** as part of the Concept Plan proposal. Existing trees within this zone will be retained, particularly locally endemic species. The riparian corridor will contribute to the creation of a linear open space network running parallel to University Creek, and provides scope for adjacent properties to regenerate the riparian corridor within their properties.
  - Pedestrian and Bicycle Network – The new road and riparian corridor regeneration will provide scope for pedestrian and bicycle connection from Herring Road to University Road and they university grounds through the Development Site. The footpath running along the new local access road will be extended through the site to connect with the riparian corridor providing the opportunity for adjoining landowners to provide similar connections to increase pedestrian and bicycle permeability within the precinct, and minimise pedestrian and vehicle conflict points by providing a pedestrian and bicycle path removed from vehicle movements.
  - Active Frontage to Herring Road – The Buildings fronting Herring Road (Buildings A and E) have been designed and orientated to Herring Road to provide activation and passive surveillance to this frontage. Building A, located on the north-east corner of the intersection of Herring Road and the new local access road, will have its pedestrian access point addressing Herring Road. The building will also include a minor amount of retail space at the south-eastern corner, of the building, stimulating pedestrian activity and vibrancy along the Herring Road frontage. The retail space is anticipated to be occupied by a café / restaurant, which will include an alfresco dining area on the front setback zone, enhancing the legibility of this space, providing an 'entrance' to the residential precinct, while also providing support services to existing residential developments where private open spaces are limited.
  - Public Art will form part of the proposal which will contribute to the identity of the residential precinct. The artwork will portray the contemporary development character of the site as well as being utilised to individualise the residential address for each of the five buildings.

These improvements positively contribute to the public domain and provide for an improved social environment for existing local land uses, and will attract future development to Macquarie Park.

5.2 Transport and Accessibility

An assessment of the transport implications of the Concept Plan has been undertaken by Colston Budd Hunt & Kafes (CBHK) which is attached in **Appendix K**. The transport assessment makes the following findings with regards to the Concept Plan.

5.2.1 Access and internal road design

The new boulevard will be designed in accordance with the Type 3 Road design details contained within the DCP 2006 and Council's Public Domain Manual.

The road design accommodates sufficient verge width to support street-tree and other landscaping within the road reserve to create a landscaped streetscape with a 'boulevard' appearance. The road design provides scope for future development of properties to the south and west of the Development Site to include road connections which will promote a higher level of permeability within the Macquarie University Station Precinct and promote a fine grain intra-block network.

The basement carparks of each of the 5 residential apartment buildings are accessed via the new boulevard road, which will accommodate 160 vehicle movements during morning and afternoon peak hours. These traffic volumes have been taken into consideration in the Concept Plan and the local access road has been designed to cater for these peak use periods.

The design of the intersection of Herring Road and the new boulevard will be left-in, left-out due to the existing median running along Herring Road preventing right-turns in and out of the new local access road. The traffic assessment states that there is sufficient capacity within the existing off-site local road network to absorb the traffic generated by the Concept Plan, and for these roads to continue to operate with satisfactory levels of service.

The new road will accommodate service vehicle movements, including emergency vehicles and garbage truck servicing.

5.2.2 Public Transport

The Development Site has a high level of public transport servicing. The new Macquarie University train station and bus interchange are located within 250 metres of the Development Site, and provide a regular and reliable public transport service within the subregion and greater Sydney. The increase of residential population generated from the Concept Plan will strengthen existing demand for public transport servicing within the precinct.

Additionally, as the Development Site is situated within close proximity to the university, regional shopping centre and a major employment area, providing high density residential development within a walkable distance to key employment and education infrastructure, and the achievement of the NSW State Plan objective of providing *'jobs [and education]) closer to home'*.

5.2.3 Traffic Generation

The Development Site is currently serviced by an efficiently functioning local road network, which connects to the M2 Freeway to the north and Epping Road to the south. These road connections have been considered by CBHK traffic consultants, who have identified that the road networks operate at satisfactory levels, with intersections immediately adjacent to the Development Site such as the signalised intersection of Herring Road and Waterloo Road, and the roundabout controlled intersection of Herring Road and Ivanhoe Place having satisfactory levels of capacity, and in some instances, spare capacity.

While the Concept Plan proposes approximately 768 parking spaces to service the overall development, the Development Site is serviced by a range of public transport networks including:

- University Train Station which runs between Chatswood and Epping every 15 minutes.
- Approximately a dozen public bus services which run as far as Parramatta, Chatswood, Rozelle, Manly and the City.
- Private Bus operators which service local communities and shopping centres on the north shore and inner north.

In addition to being highly serviced by public transport, the Development Site is accessible to a wide range of services including a university, regional shopping centre and major employment corridor by foot, which minimises the demand the development will place on the local access road network.

Modelling based on RTA surveying data and traffic counts undertaken in morning and afternoon peak periods by CBHK have indicated that the development is likely to generate 150 to 160 vehicle movements per hour two-way during peak hours, of which 70% will be outbound during morning peaks and 70% will be inbound during afternoon peak periods.

The analysis of the impacts of the Concept Plan development on surrounding intersections undertaken by CBHK concludes:

- *The signalised intersection of Herring Road with Waterloo Road would operate with average delays of less than 42 seconds per vehicle during morning peak periods and less than 50 seconds per vehicle during afternoon peak periods. This represents levels of service C and D respectively, which are satisfactory levels of service.*
- *The roundabout-controlled intersection of Herring Road with Ivanhoe Place and the Morling College access would continue to operate with average delays, for the highest delayed movement, of less than 20 seconds per vehicle during peak periods. This represents level of service B, a good level of service.*

Based on the assessment of the proposal undertaken by CBHK, the existing road and public transport network has capacity to support the 557 apartment Concept Plan development. This is discussed in more detail in the Traffic Report attached in **Appendix K**.

5.2.4 Pedestrian and Cycle Connections

The Ryde Bicycle Strategy and Masterplan 2007 provides a comprehensive plan for a cycleway network within the Ryde LGA. The Bicycle Masterplan does not indicate any specific cycleway on the Development Site, however seeks to ensure that all roads are able to accommodate bicycle movements. The new local access road has been designed to Type 3 Road specifications, which can accommodate vehicle and bicycle movements, and could potentially facilitate a north-south connection although this would require adjoining landowners to connect to the Concept Plan pedestrian network beyond the boundaries of the Development Site. The north-south connection is proposed to be provided along the riparian zone to connect into the existing “green space” connection to the University Train Station.

The Concept Plan has been designed to incorporate bicycle racks and bicycle storage areas in each of the residential apartment building car parks to support the use of bicycles by residents. Details of the location of bicycle racks will be included in the detailed documentation of each Project Application.

5.2.5 Off-Street Parking

As the Concept Plan proposes residential development, the parking rates on the Parking Restrictions Map are not strictly applicable to the development. However, parking rates proposed have been determined for each building to cater for the particular stage of development based on an indicative mix of apartment types known to date and having regard to the Council’s DCP parking requirements.

Project Application (Building A) proposes 174 parking spaces to service the 123 apartments. This equates to 1 space per 60sqm of Gross Floor Area. This is greater than the number of spaces indicated on the Parking Restrictions Map, however Clause 98 of the PSO does not apply to residential developments, and therefore the proposed parking rate has been primarily based on the application of the DCP 2006 parking requirements, with some recognition of the few over-size 3-bedroom and 4-bedroom apartments.

It is anticipated that all future Project Applications for the subsequent development stages will provide parking in accordance with the proposed parking rates, and these rates have been adopted as part of the Statement of Commitments attached in **Appendix C**.

5.2.6 Construction Management

Construction for the Concept Plan will take place in the several stages as previously in **Section 3.2.5**.

Details of the Construction Management process are provided in the Construction Management Plan attached in **Appendix U**.

5.3 Environmental and Residential Amenity

An assessment of the residential and environmental amenity has been undertaken for Building A against the SEPP 65 and *Residential Flat Design Code* provisions by Turner + Associates and is attached in **Appendix D**.

The assessment concludes that the Building A design satisfies the SEPP 65 controls and rules of thumb, providing an appropriate level of amenity to all proposed apartments.

5.4 Social and Economic Considerations

5.4.1 Economic Benefits

The project will deliver substantial economic benefits to the local economy through direction job creation and the resultant multiplier effects generated throughout the local economy.

Given the scale of the project, it will be constructed over five separate stages. The construction of each building will create approximately 200 full time equivalent construction jobs, therefore totalling 1,000 construction jobs over the life of the project.

Post completion, it is estimated that the project will create 10-20 ongoing jobs for the maintenance and management of the development as well as employment within the ground floor retail tenancies.

5.4.2 Social Considerations

The project will have a positive social impact for the following reasons:

- It will provide new housing choices and opportunities within Macquarie Park when current and future new housing opportunities are limited.
- The location of the site is highly desirable given its convenient access by a short walk to major rail, bus and retail shopping facilities.
- The site is conveniently located adjacent to the Macquarie university and therefore presents as a potential place for students to reside, as well as university staff.
- The site is well located to the Macquarie Business Park and presents as a convenient location for workers wishing to reside close to their workplace.
- Finally, the Concept Plan incorporates a new local road and pedestrian/cycle paths that will provide direct connections into Macquarie University, and therefore will constitute an improvement to the current accessibility to the University from herring Road.

In addition to considering the social benefits, in accordance with the Department's guideline - *Crime prevention and the assessment of development applications* – the following Crime Prevention Through Environmental Design (CPTED) principles have been considered in the Concept Plan design for the site:

Situational crime prevention involves changing various aspects of the environment so that the efforts and risks required to commit crime are increased, and offender's perceived rewards are reduced. Crimes such as vandalism, assault, break and enter, theft, trespassing, and motor vehicle theft tend to be more responsive to situational crime prevention strategies. These are the types of crimes that most commonly occur in public spaces.

This knowledge has been applied through the CPTED principles to inform the planning and design stages of buildings and public spaces.

The key CPTED principles are:

- **Natural surveillance** – maximising opportunities for passers-by or residents to observe what happens in an area (the 'safety in numbers' concept). This may be achieved through, for instance, the placement of physical features, activities and people.

- **Access control** – control of who enters an area so that unauthorised people are excluded, for instance, via physical barriers such as fences and grills.
- **Territorial reinforcement/ownership** – people are more likely to protect territory they feel they own and have a certain respect for the territory of others. This can be expressed through installation of fences, paving, signs, good maintenance and landscaping.
- **Space management** – ensures that space is appropriately utilised and cared for. Space management strategies include; activity coordination, site cleanliness, rapid repair of vandalism and graffiti, the replacement of burned out lighting and the removal or refurbishment of decayed physical elements.

The design and operational measures that will be implemented for the site are outlined below.

1. Lighting

- All street entries to residential buildings will have appropriate levels of lighting to avoid poorly lit dark spaces.
- Lighting will be provided along the shared pedestrian/cycleway through the riparian zone adjacent to the creek.
- Where required, the Australian Standard AS1158.3.1:1999 “Road Lighting. Part 3.1: Pedestrian area (Category P) lighting – performance and installation design requirements” will be complied with.

2. Designing for casual surveillance

- All buildings have been designed to ensure that living spaces and private balconies overlook the public domain to achieve ‘eyes on the street’.
- Balconies off Building D will reinforce the casual surveillance along the shared pedestrian/cycleway through the creek corridor.
- Buildings A and E have been positioned and designed to achieve a strong street presence to Herring Road. Both buildings will incorporate units that look out to Herring Road.
- The ground level retail use in Building A and space dedicated for outdoor seating will encourage increased casual surveillance of both the public domain and internal ground floor area.

3. Landscaping

- The building entrances will be visible from the street and will not be obscured by landscaping which will be low and controlled around entries.
- The landscaping of the site has been designed to minimise opportunities for entrapment or the concealment of intruders in the public domain with all plantings are either low in height or have clear trunks to facilitate clear view lines across the site.

4. Fencing

- Construction fencing will be erected along the south-western side of the new internal street to secure the site in accordance with workplace safety requirements.
- A boundary fence will be erected along the shared boundary with Macquarie University to ensure there is a clear delineation of space between the properties as well as to provide secure private domain areas for residents on-site.

5. Access

- The Concept Plan has incorporated clear vehicle entry and exit points for each building down into the basement car park.
- Access into the basement car parks will be controlled by installing physical barriers such as security access gate devices to control vehicles entering and exiting the car park.

- Pedestrian access to the building will be a clearly defined direct pathway from the street to the foyer. Access into each building will be controlled by voice operated security and electronic pass security devices.

6. Delineation of public and private space

- The Concept Plan incorporating a new public street and footpath will be clearly defined for the private space of the residential areas through a range of measures including landscaping, commencement of access pathways to buildings and the building setbacks.
- The private open space for residents will be secured from the public domain through a combination of landscape treatments and fencing that will create a clear sense of ownership and territorial reinforcement.

7. Materials and Maintenance

- Regular maintenance of the buildings will promote an image of a well cared for development which discourages vandalism. A Strata management body will be formed for each building to ensure the buildings have a regular maintenance program.
- Hardwearing materials will be utilised where appropriate in all buildings to minimise opportunities for vandalism.

5.5 Noise Assessment

A noise assessment has been prepared by Renzo Tonin & Associates to assess the noise intrusion into and the operational noise from the Concept Plan development. The noise assessment specifically addresses the noise impacts to and from the Building A residential building.

The assessment identified that the residential development will be effected by:

- Traffic noise from vehicles moving along Herring Road.
- Noise associated with buses moving along Herring Road.

The acoustic assessment considered the noise criteria in SEPP (Infrastructure) 2007, AS2107:2000 (Recommended Design Sound Levels and Reverberation Times for Building Interiors), the Draft Ryde LEP 2008, and Ryde DCP 2006.

The acoustic assessment identifies maximum internal noise levels from road traffic for residential dwellings within Building A, which are summarised in Table 1 of the Acoustic Assessment Report prepared by Renzo Tonin & Associates attached in **Appendix L**.

The assessment concludes the development will have satisfactory acoustic amenity, through the inclusion of the following acoustic mitigation measures:

- Habitable rooms on the eastern façade facing Herring Road will have an acoustic rating of Rw 35.
- Bedrooms and living areas on the western facades with an acoustic rating of Rw 32.
- Acoustic grade seals are to be installed on windows and perimeter doors exposed to road traffic noise.
- Undertaking a quantitative assessment of the construction noise for major construction works.

These recommended acoustic mitigation measures have been incorporated into the Building A design.

5.6 ESD – Sustainability

A BASIX Certificate and Summary Report have been prepared by Cundall attached in **Appendix F** which concludes that the development satisfies the BASIX 20% water and 40% energy reduction targets.

At this stage achieving the energy reduction standards, the following measures are likely to be included:

- A number of ventilation and lighting efficiency controls within common areas and retail spaces.
- Installing energy efficient fittings such as air-conditioning units, cooktops, hot water systems, clothes dryers and light fittings in individual dwellings.

The current proposed water reduction measures likely to be employed in the building design include:

- 4 star tapware and washing machines,
- Water reuse irrigation for landscaping.
- 4 star taps & toilets, 3 star showerheads and 4.5 star dishwashers to be installed in all apartments.

The final water and energy saving measures will be determined at the detailed design stage and confirmed in the final statement of commitments for the Building A Project Application.

5.7 Flora and Fauna

An assessment of the flora and fauna has been undertaken by Total Earth Care (TEC), which considers the current flora and fauna on the Development Site and the impacts of the Concept Plan.

The Fauna and Flora Report assesses that the proposed construction within the subject site does not impose "a significant effect" on the STIF endangered ecological community in the adjacent site. In summary the following assumptions were made;

- The proposal does not include the direct clearing or construction works within STIF, possible impacts will be managed and include the revegetation of the Core Riparian Zone and removal of the weed infestation.
- The construction footprints will not adversely reduce the dimensions of the current STIF coverage therefore; will not further fragment the community.
- Construction works will be managed for minimal impacts on the primary root system for STIF canopy trees.
- A Vegetation Management Plan will be adopted as a key guideline for construction works and management of the riparian corridor and potential impacts on STIF.

The Concept Plan will be undertaken in accordance with the recommendations contained within Section 8 of the Flora and Fauna Assessment report prepared by TEC attached in **Appendix O**. The recommendations of the Flora and Fauna Assessment have been adopted in the Draft Statement of Commitments for the Concept Plan.

5.7.1 Tree Removal and Revegetation

The development has been designed to maximise the number of trees to be retained along the property boundaries. Notwithstanding this, a number of trees will be required to be removed from the Development Site to accommodate the building footprints of the Concept Plan. .

Treescan have undertaken an Arborist Assessment, attached in **Appendix J**), of the trees on the Development Site and identified the native species indigenous to the area. The removal of these trees is to be offset with the regeneration works of the riparian corridor, which is considered to be a more comprehensive ecological outcome for the site and recommended by Total Earth Care in the Flora and Fauna Assessment attached in **Appendix O**.

5.7.2 Riparian Corridor

The Concept Plan includes regeneration works to the University Creek riparian corridor. The Flora and Fauna Assessment prepared by TEC makes the following recommendation for the riparian corridor regeneration works:

- *Creation of a riparian corridor along University Creek, setout 20 metres from the centreline of the creek. This vegetation buffer zone includes a core riparian zone (CRZ) of 10 metres off-set from the top of bank on either side of the creek.*
- *The design indicates that the setback of Building D will be 20 metres from the centre line of the creek, and this area will include the core riparian zone (10 metres) and vegetation buffer.*
- *The proposed shared pedestrian/cycle path within the riparian zone is proposed to be located outside of the core riparian zone, within the vegetation buffer.*

The TEC assessment concludes that the works will be more locally beneficial than undertaking a replanting strategy to replace the trees to be removed to accommodate the Concept Plan building footprints. Details of the riparian regeneration works are detailed below in **Section 5.7.3** and the VMP prepared by Total Earth Care attached in **Appendix Q**. The recommendations of the VMP have been adopted in the Draft Statement of Commitments for the Concept Plan attached in **Appendix C**.

5.7.3 Vegetation Management

A Vegetation Management Plan (VMP) has been prepared by Total Earth Care (TEC) to address the key biodiversity issues on the Development Site. A copy of the Vegetation Management Plan prepared by TEC is attached at **Appendix P.**

The VMP has been prepared in accordance with the DWE guidelines for preparing VMPs and proposes a number of vegetation management measures to be implemented over the duration of the development and on-going operations of the Development Site to rehabilitate and revegetate key areas, specifically the University Creek riparian corridor.

The VMP proposes four vegetation management measures for the vegetation on the Development Site:

- *weed removal and control;*
- *bush regeneration techniques in the Riparian community;*
- *erosion control; and*
- *revegetation.*

The long-term management of the vegetation on the Development Site comprises four management strategies:

- ***Construction Activities** – incorporating the construction of permanent and temporary flood mitigation, stormwater control infrastructure, sediment and erosion control devices;*
- ***Restoration and Revegetation** - incorporating weed control, bush regeneration techniques, revegetation and erosion control;*
- ***Monitoring** – actions required to ensure the vegetation management measures of this VMP are being met and remain appropriate; and*
- ***Roles, Responsibilities and Timing** – recommending the staging of vegetation management works and assigning responsibilities.*

The VMP will ensure the vegetation along University Creek during the construction and on-going operation of the Development Site will be appropriately managed and maintained.

5.8 Stormwater Management

5.8.1 Drainage and Stormwater Management

The Concept Plan proposes an integrated drainage and stormwater management system, with each allotment containing its own detention tank and separate re-use tank. Building A will be gravity fed into the existing stormwater infrastructure in Herring Road.

The tanks for Buildings B, C, D and E will be gravity fed to the kerb-side pits in the new Boulevard road reserve, and then gravity fed to the rear of the development site where they drain into a bioswale for nutrient and pollution cleansing. The bioswale then discharges stormwater into University Creek.

The stormwater management system includes gross pollution traps on each allotment for initial purification of stormwater prior to it feeding into the stormwater management system. The bioswale will provide a plant-based nutrient management process for the whole Development Site.

The stormwater management system is to be established as required for each stage of development. A detailed stormwater management plan has been prepared for Project Application (Building A) which includes stormwater detention and reuse tanks on Lot 10, and the extension of the stormwater piping to connect to the existing Council stormwater pits on Herring Road.

For further details regarding the drainage, stormwater and sediment control management for the Concept Plan, refer to the Drainage and Stormwater Plans prepared by Taylor Thomson Whitting attached in the separate **Volume of Plans, Part 4**.

5.8.2 Flooding

The rear of the site (proposed Lot 21) is identified as being effected by 1:100yr flood events along the University Creek riverbed. The development of the Development Site will not result in an increase in the flood level along University Creek, and as such no creek channel modification will be required for flood mitigation.

Further details of flood management for the Development Site are contained within the Taylor Thomson Whitting Flood Assessment Report attached in **Appendix Q**.

5.9 Groundwater Management

The geotechnical investigations undertaken by Douglas Partners included borehole drilling to a maximum depth of 4.7 metres, and no groundwater was observed. Further testing to 5.0 metres and 7.2 metres identified water welling at levels likely to be associated with groundwater table levels at the interface of the residual clay and bedrock. A copy of the report is included in **Appendix S**.

Douglas Partners investigations concluded that groundwater seepage should be controlled appropriately through perimeter drains connected to a “sump-and-pump” dewatering system. The report also makes the following recommendations which will be considered in the detailed design of each residential apartment building at the Project Application stage:

- *The need for ongoing dewatering after construction will depend on whether the basement is designed as a drained basement or water tight (tanked) basement.*
- *A drained basement will require permanent subfloor drainage below the basement floor slab connected to a sump and pump dewatering system.*
- *A tanked basement will avoid the need for dewatering after construction, however the tanked basement may be considerably more expensive than the drained basement and is probably not warranted for this site.*
- *A tanked basement would need to be designed to resist uplift forces associated with groundwater pressure, for which preliminary design could be based on a groundwater level at the clay / rock interface.*

5.10 Geotechnical Investigations

The Geotechnical Investigation undertaken up Douglas Partners based on the Concept Plan layout. The investigations include borehole drilling to a depth appropriate to support the excavation required lowest basement levels of the car parking (8 to 9 metres). The borehole investigations comprised 8 boreholes and the installation of two groundwater monitoring wells. The findings of the borehole samples indicated:

- Topsoil – silty / clayey matter topsoil of 100mm to 300mm thick across the Development Site.
- Fill – silty clay fill to a depth of 1.4 metres at the rear of the site.
- Clay – stiff to very stiff natural clay between 0.5 – 1.3 metres at the site frontage to Herring Road, and 2.5 – 4.7 metres under the Building D floorplate.
- Sandstone / Laminite – fine grained sandstone and siltstone below the clay layer between 5 – 9 metres.
- Sandstone – uniform sandstone bedrock between 5 – 9 metres, with a medium to high strength of 1 – 3 metres thick. Pockets of high to very high strength sandstone were found between 10.3 – 11 metres, and a very low to low strength sandstone patch (possibly a fault) was found in one spot at 9.8 metres.

The investigations indicate that the geotechnical conditions of the Development Site appear to sufficient to support the development, however recommends all footings be inspected by a geotechnical engineer to confirm that foundations are suitable for the design parameters. This recommendation is adopted in the Draft Statement of Commitments for the Concept Plan attached in **Appendix C**.

Further details of the findings of the geotechnical investigations are provided in the Report on Geotechnical Investigations prepared by Douglas Partners attached at **Appendix S**.

5.11 Contamination

A Phase 1 Contamination Assessment was undertaken by Douglas Partners to identify whether the site was suitable for the proposed residential development. The findings of the Douglas Partner investigations concluded that:

> *The findings of this phase 1 contamination assessment indicate that the site, in general, is not likely to present a significant risk of hazard to human health or the environment and is basically environmentally suitable for the proposed staged residential development, subject to the following:*
>
> - *Disposal of the soils in the earth mound at the south-eastern boundary of the site at a licensed landfill facility as Asbestos Waste. Note that further assessment of the earth mound may delineate a smaller volume of impacted soils requiring this classification and disposal;*
> - *Further, more detailed investigations into soil contamination must be carried out in the vicinity of the UST location, as indicated on Drawing 1. The investigations should be aimed at assessing any soil contamination resulting from past leaks from the UST;*
> - *Validation of existing building footprints upon completion of demolition and removal from the site. This will entail a visual assessment of the ground surface for evidence of asbestos containing materials complimented with appropriate sampling and testing;*
> - *Validation of the UST pit once the UST is removed and disposed off site;*
> - *Additional ex situ assessment of excavated soils (particularly filling and topsoil) to confirm or otherwise the preliminary waste classifications provided in this report;*
> - *Additional sampling and testing of soils to be retained on site, such that sample numbers comply with the NSW EPA Sampling Design Guidelines; and*
> - *A ground water assessment, particularly given the presence of an UST and the depth of basement excavation proposed, which may require dewatering. The assessment should include groundwater monitoring wells positioned both hydraulically up-gradient and down-gradient of the UST.*

In addition to these conclusions the Douglas Partner investigations provide the following recommendations:

- *Prior to demolition, all existing buildings should be surveyed by an experienced occupational hygienist or environmental consultant to identify any hazardous materials which need to be appropriately managed during demolition works. All handling of hazardous building materials must be carried out by a contractor with the appropriate licenses; and*
- *The decommissioning and removal of the UST must be carried out by an appropriately qualified and licensed contractor in accordance with WorkCover guidelines.*

For further details regarding the environmental suitability of the Development Site for residential development, refer to the Phase 1 Contamination Assessment prepared by Douglas Partners attached in **Appendix R**.

5.12 Waste Management

A Waste Management Plan has been prepared for the servicing Building A, which estimates 14,400L to 21,600L of waste being generated by the residential apartment development per week. The split of waste is anticipated to be approximately 13,200L of general waste and 7,200L of recycling.

The waste separation will occur at the waste rooms provided on each level of the building, which will have one chute for general waste and one to two 240L comingling recycle bin. The general waste chute will feed into a 1,100L bin in the main waste room at ground floor. Recycling bins will be collected and transported to the main waste room for emptying by the building manager.

General waste collection is to be provided by Ryde Council, whom have advised service will occur three times per week (Monday, Wednesday and Friday). Recycling waste collections will also be undertaken by Council on a weekly basis of 30 x 240L recycling bins, or a twice weekly basis of 15 x 240L recycling bins, the latter preferred by Ryde Council.

For further details regarding waste management for the Project Application (Building A), refer to the Waste Management Plan prepared by Waste Audit attached in **Appendix N**.

5.13 Cultural Heritage

A Preliminary Aboriginal Archaeology Assessment was prepared by Mary Dallas & Associates attached in **Appendix T**. The assessment included site investigations and Aboriginal community consultation which identified that the Development Site has been *'comprehensively disturbed'* by previous land uses and that it is unlikely to have been intensively used by Aboriginal people in the past. The assessment concludes no further Aboriginal heritage investigations or earthworks monitoring are required for the Concept Plan development.

5.14 BCA Capability

A BCA Capability Assessment for Building A has been undertaken by Vic Lilli and is attached in **Appendix V**. The report has addressed the key matters of consideration contained in the Building Code of Australia and concludes that the proposed Building A will comply with the adopted standards in the BCA.

5.15 Draft Statement of Commitments

A copy of the Draft Statement of Commitment tables has been prepared and is attached in **Appendix C**.

6 Summary and Conclusion

Macquarie Park is a Specialised Centre undergoing significant transformation

- The Macquarie Park Corridor is the northern anchor of the "Global Economic Corridor" and accordingly has a state directed vision to transform Macquarie Park into a major multi-functional centre of employment, technology, enterprise and education.
- Macquarie Park is identified in the Inner North Subregional Strategy as a "Specialised Centre" which has a target to increase employment by 23,000 jobs and commercial floorspace by 900,000sqm by 2031. Student numbers at the University are also planned to increase significantly through the approved expansion of the campus. Thus future expansion of the Macquarie Park Corridor will continue to strengthen the state and regional significance of this major multi-faceted centre to the NSW Economy.
- The University Concept Plan includes approval is evidence of the transformation which will translate into an additional:
  - 61,200sqm of academic GFA within the Academic Core.
  - 400,000sqm of commercial GFA and parking outside the Academic Core.
  - 3,450 beds within the University Housing Precinct for University purposes only.
  - Building heights from 16 to 108 metres along Herring Road frontage.

Development Site is ideal for quality residential apartment living

- The assessment has demonstrated that the site is highly suitable for residential apartment living, given it is only 250 metres walking distance to the Macquarie university train station, metropolitan business services and regional shopping facilities.

The Concept Plan positively responds to the site conditions and future urban morphology

- The design has been derived having regard to:
  - The existing site conditions – including the prevailing slope, street frontage presentation, pedestrian networks and environmental constraints.
  - The current and planned applicable local statutory controls.
  - The state strategic planning directions – including the relevant actions and targets within the State Plan and Subregional Strategy.
  - The current and future local urban context – focusing on the Macquarie University Concept Plan approval and future intensification of surrounding development arising from the gazettal of the Draft Ryde LEP 2008.
  - The resultant implications of the Concept Plan for the future resident and public domain amenity in and surrounding the site.

The overall development outcomes align with local and state policy

- The assessment concludes that the proposal positively responds to the Development Site's strategic location and will result in positive economic, environmental and social benefits to the community.
- It responds to the development up-lift anticipated across the Macquarie Park Corridor, particularly within close proximity to the 'special precincts' which surround each of the new train stations, including the Macquarie University Train Station.
- Increases the provision of future housing stock to achieve the State Plan objective of providing *'jobs closer to home'* within the Macquarie Park Corridor.

- It will accommodate building mass without adversely impacting on amenity of surrounding land uses.
- It will provide approximately 557 new residential dwellings to assist in the achievement subregional housing stock targets of an additional 30,000 dwellings within the Inner North Subregion by 2031, including 12,000 dwellings within the Ryde LGA.
- It positively responds to the existing and future building heights addressing Herring Road which dramatically fluctuated while tapering upwards between Epping Road and Waterloo Road, and frames the Herring Road vista approach to the Macquarie University Train Station precinct centre.
- It will contribute to creating of a strong streetscape along Herring Road which is the major north-south axis to the Macquarie University Station Precinct, framing the entry to punctuate the 'sense of arrival' by increasing the height of buildings towards the precinct centre.
- Contributes to a range of public domain improvements including:
  - Construction of a new boulevard which will contribute to achieving a finer grain vehicle, bicycle and pedestrian connection through the Macquarie Park Corridor.
  - Regeneration of the riparian corridor along University Creek which will contribute to the creation of a linear open space network running parallel to the creek, and provides scope for adjacent properties to regenerate the riparian corridor within their properties.
  - Providing scope to expand the pedestrian and bicycle network through the Development Site to connect with existing and future pedestrian and bicycle paths.

For these reasons, the Concept Plan represents an appropriate development outcome for the Development Site, and therefore it is requested that the Minister approve the Concept Plan, Project Application for Staged-Subdivision and Project Application for Building A.

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