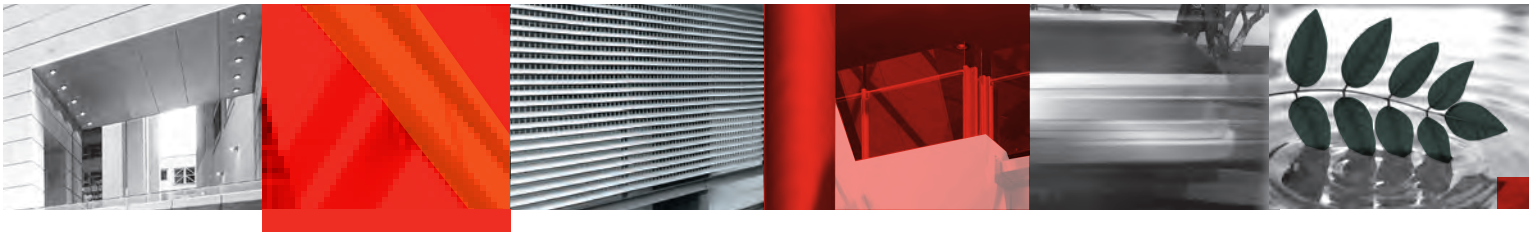
Environmental Assessment Report

Concept Plan and Stage 1 Project Application



110 - 114 Herring Road, Macquarie Park

Residential Mixed Use Development

Submitted to Department of Planning & Infrastructure
On Behalf of Stamford Property Services Pty Ltd

June 2011 ▪ 10345

JBA Planning Pty Ltd ABN 84 060 735 104 ACN 060 735 104 w jbaplanning.com.au
Level 7, 77 Berry Street North Sydney NSW 2060 t +61 2 9956 6962 ▪ 29 Beach Street Wollongong NSW 2500 t +612 4225 7680

JBA Urban Planning Consultants Pty Ltd operates under a Quality Management System. This report has been prepared and reviewed in accordance with that system. If the report is not signed below, it is a preliminary draft.

This report has been prepared by: Name
Kate Tudehope

Signature  Date 23/06/2011

This report has been reviewed by: Name
Clare Swan

Signature  Date 23/06/2011

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Statement of Validity

Prepared under Part 3A of the Environmental Planning and Assessment Act, 1979 (as amended)

Environmental Assessment prepared by		
Name	Clare Swan	Kate Tudehope
Position	Associate	Urban Planner
Qualifications	BA MEnvPl CPP	BPlan
Address	Level 7, 77 Berry Street, North Sydney	
In respect of	Concept Plan and Stage 1 Project Application	
Concept Plan		
Applicant name	Stamford Property Services Pty Ltd	
Applicant address	Suite 2, Level 10 139 Macquarie Street, Sydney NSW 2000	
Land to be developed	110 – 118 Herring Road Macquarie Park NSW 2113	
Proposed development	Residential, Mixed Use Development	
Environmental Assessment	An Environmental Assessment (EA) is attached.	
Certificate	I certify that I have prepared the content of this Environmental Assessment and to the best of my knowledge: ▪ It is in accordance with the Environmental Planning and Assessment Act and Regulation. ▪ It is true in all material particulars and does not, by its presentation or omission of information, materially mislead.	
Signature		
Name	Clare Swan	
Date	23 June 2011	
Signature		
Name	Kate Tudehope	
Date	23 June 2011	

Executive Summary

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Purpose of this Report

This submission to the Department of Planning comprises an Environmental Assessment for a Concept Plan application under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). It relates to the redevelopment of the Stamford Grand North Ryde site, at 110 – 114 Herring Road for residential and mixed uses.

A request for consideration of the proposal under Part 3A was made to the Department on 16 July 2010. The opinion was formed by the Minister that the project was a project to which Part 3A applied, and he authorised a Concept Plan application on 2 September 2010. The Director General's Requirements were provided to the proponent, Stamford Property Services Pty Ltd, on 25 November 2010.

This submission is in accordance with the Department's guidelines for Concept Plan applications lodged under Part 3A, and addresses the issues raised in the Director General's Requirements.

The Site and Locality

The Stamford Grand North Ryde site is located at 110 – 114 Herring Road, Macquarie Park in the City of Ryde local government area (LGA). The site lies approximately 13km north-west of the Sydney CBD, and 18km north-west of Sydney Airport.

The site is currently occupied by the Stamford Grand North Ryde hotel. It has an area of approximately 22,433m^2, with frontages of approximately 175m and 75m to the Epping and Herring Road frontages respectively.

The surrounding area is currently undergoing transition from a low-medium density residential area, to a high density mixed use precinct, with a number of approved and proposed Part 3A projects in the locality. These include the approved Macquarie University Concept Plan (MP06_0016), and the proposed redevelopment of the Morling College site (MP09_0218 and MP09_0195). Future plans for the redevelopment of the Department of Housing land on the opposite side of Herring Road have been mooted, however no detail is available.

The site is generally unconstrained, with no significant barriers to development on the site, as it is an existing built-up site consisting of hotel, parking and paved areas. The only potential constraints include the proximity to Epping Road and associated noise impacts, and the challenges associated with integrating the proposed built form with the existing and transitioning locality. The opportunities presented by the site include its size and the proximity to Macquarie University, Macquarie University Railway Station, the Macquarie Shopping Centre (Macquarie Centre) and the Macquarie Park Corridor employment area. The site is also generally free of environmental constraints that would hamper redevelopment.

The site has significant motorway, state and regional road access, and is located between the M2 Motorway and Epping Road. The M2 motorway is situated to the north-east of the site, providing access to the north western suburbs. Epping Road is a state road which provides access to Epping and the CBD via the Lane Cove Tunnel.

The site is also within close proximity of a range of public transport facilities including the Macquarie University Railway Station and the bus interchange at the Macquarie Centre.

The Proponent, Land Ownership and Opportunities

HSH (Australia) Trust, as Trustee for SNR Trust, owns the site which comprises one allotment. The lot is in single ownership, and is legally described as Lots 1 in DP 780314. The site is currently occupied by the Stamford Grand North Ryde Hotel.

Being in single ownership, the site represents an important opportunity to allow planning and future development to proceed without the requirement to coordinate multiple site owners, or conflicting development designs. This is particularly significant as there is a limited availability of sites in single ownership for residential development in the Macquarie Park corridor, with the opposite side of Herring Road dominated by strata title apartments. The site also provides the opportunity for a residential development of a substantial scale, which will alleviate pressures faced by established residential areas to accommodate in-fill development.

Background

This Environmental Assessment Report (EAR) seeks approval for a Concept Plan and Stage 1 Project Application for a residential mixed use development at 110 – 114 Herring Road, Macquarie Park. The design of the proposal has been subject to a peer review process, conducted by architect Ken Woolley. Several options for the site have been considered during this iterative process, with the proposed design representing the best architectural and urban design outcome.

Concept Plan Vision and Objectives

The vision is to create a residential mixed use development that contributes to the street network of the Macquarie Park Corridor and improves the spatial legibility of the Corridor by providing a 'gateway' building on Epping Road. The proposal provides a residential density that is commensurate with its proximate location to transport and the business park. At the same time, the development maintains the landscape character along Epping Road by retaining existing mature trees within a landscaped setback.

The objectives of the Concept Plan have been driven by economic, community, environmental and design considerations. The objectives are to provide:

- a high quality residential space in the Macquarie Park Corridor;
- complementary non-residential uses on the site's Herring Road frontage that are supportable by the incoming resident population, and do not compete with the Macquarie Centre or Macquarie Business Park;
- a new road link and a fine-grained internal road network within the site and Macquarie Park Corridor;
- communal meeting facilities and speciality retail facilities for use by local residents;
- a commitment to public art that will enhance the public domain;
- buildings which rely heavily on passive environmental design elements;
- buildings which incorporate ESD features that will reduce the use of water and energy and commit to a 4 Green Star rating under the Green Building Council of Australia;
- a 'bookend' for future development at the corner of Herring and Waterloo Roads under the approved Macquarie University Concept Plan;

- a high level of pedestrian amenity and permeability at ground level with high quality public domain and landscaping treatments; and
- buildings and building envelopes capable of achieving design excellence with minimum impact on the adjoining land uses.

Overview of Project

The Concept Plan seeks approval for:

- the layout of the development for seven buildings, areas of open space and street network / layout;
- building envelopes in RLs (maximum height of RL144.65);
- a maximum total gross floor area (GFA) across the site of 56,892 m^2;
- maximum car parking numbers of 790 spaces; and
- minimum GFA of 1,110m^2 for non-residential uses.

Approval is also sought for a Project Application for Stage 1 of the Concept Plan, which comprises:

- demolition of all existing structures and improvements on the site;
- construction of the basement car parking for all stages;
- construction of Buildings H, W, C and Y accommodating a total of 310 residential units;
- an apartment mix comprising: 52% 1 bedroom, 38% 2 bedroom and 10% 3 bedroom;
- landscaping and public domain works; and
- internal roads and services connections.

The Concept Plan and Project Application incorporate a number of benefits to residents and the wider community. These include:

- a meeting room to be made available for wider community use;
- a commitment to achieving a 4 Star Green Star rating for both Stages of development;
- the provision of lift / stair access from the site to the bus stop on Epping Road;
- the provision of bicycle vouchers, offering 50% off a range of bicycles approved by Stamford, for residents of the development, as well as one voucher per 100m^2 of non-residential GFA, to reduce car dependence;
- the provision of wider public access to the central areas of communal open space;
- a contribution to the future fine-grained road network of the Macquarie Park Corridor through the construction and proposed dedication of Type 3 (Council standard) roads;
- commitment to preparing a Public Art Strategy for the site;
- commitment to provide a herb / vegetable garden for residential use; and
- provision of significant landscape embellishment, particularly of the Type 3 roads.

Environmental Assessment

Compliance with Acts, EPIs, Guidelines and Planning Strategies

The proposal is generally consistent with the objectives of the following Acts, EPIs, Guidelines and Planning Strategies applying to the site, including:

- Objects of the NSW *Environmental Planning and Assessment Act 1979*;
- NSW State Plan;
- Sydney Metropolitan Strategy;
- Draft Inner North Sub-regional Strategy;
- Metropolitan Transport Plan 2010;
- NSW Planning Guidelines for Walking and Cycling;
- Healthy Urban Development Checklist 2010 (NSW Health);
- Ryde LEP 2010 and, as per the DGRs, consideration is given to Draft Ryde LEP 2010 (Amendment 1: Macquarie Park Corridor);
- Ryde DCP 2010, and other relevant Development Control Plans;
- SEPP (Building Sustainability Index: BASIX) 2004;
- SEPP 55 – Remediation of Land;
- SEPP 65 – Design Quality of Residential Flat Development and the Residential Flat Design Code (RFDC); and
- SEPP (Infrastructure) 2007.

The Concept Plan varies the controls set out in Council's LEP and foreshadowed draft Amendment no. 1. However, the site is capable of accommodating the proposed height and floor space ratios (FSR), and is reflective of the changing nature of the locality. Development on the site under its current controls would not fulfill the development potential of the site, and would be inconsistent with the broader strategic aims. Macquarie Park is undergoing significant change, with a number of projects approved, planned or proposed that will substantially alter the built form of the area. Many approved or proposed buildings incorporate heights and FSRs that are much greater than those of the existing developments and controls.

The suitability of the proposal is justified below, and in detail in the EAR. The EAR demonstrates the suitability of the Concept Plan and Stage 1 Project Application from an economic, social, environmental and urban design perspective.

Peer Review

In response to consultation feedback regarding the bulk and scale of the Concept Plan, a peer review of the scheme was engaged by Stamford Property Services. Mr Ken Woolley, an eminent architect, was engaged to review the scheme. The key findings of the review are as follows:

- the highest urban density should be adopted to take advantage of the site's attributes, which include the absence of any significant cultural, landscape, wildlife or environmental effects;
- the proposal is of a medium height by normal standards for this density, and could be higher, as long as requirements for separation distances, solar access and open space are maintained;
- the proposal will take population pressure off more sensitive locations, such as the suburbs on the Northshore line;

- the separation distance created by Epping Road ensure that there will be no significant overshadowing or visual intrusion on areas to the south, avoiding impacts associated with the contrast in the scale of adjoining properties, an issue which confronts other infill development areas; and
- the site's location on the edge of the Macquarie Park Corridor is appropriate for predominantly residential development, located on the edge of a mixed use area, and within walking distance of the Macquarie Centre and railway station.

Urban Design and Built Form

The Concept Plan proposes a built form that considers the context of the site, including the transitional nature of the local area and the close proximity to public transport via the Macquarie University Train Station. The following design measures have been implemented to achieve an overall high quality built form environment:

- The proposed heights and densities:
  - are in line with Council's desire to situate prominent buildings at major entrances to Macquarie Park;
  - through the situation of the landmark corner building on Epping Road, provides a sense of address for the business park as people travel along Epping Road. A slender gateway building on the primary arterial road is considered a better response than on the narrower, secondary frontage of Herring Road. This landmark building has a proposed height of 20 habitable storeys (where it addresses Epping Road and the public domain) and 22 storeys when viewed from within the site due to the site's topography. As well as providing a more slender form, the modified building massing will also break up the massing compared to the scheme presented in the preliminary assessment.
  - will complement the Macquarie University Concept Plan with the creation of a strong corner element, creating a 'book end' to the taller buildings approved at the northern end of Herring Road;
  - are varied within the site, to provide differentiation in built form, preventing the repetitive orientation of buildings which can result in a perception of greater density or a monolithic appearance of a wall of buildings. The diversity of heights, in conjunction with sufficient spatial separation between buildings, creates the perception of openness to the site which reduces the perception and appearance of density; and
  - will not result in significant overshadowing. The orientation of the site and the positioning of the buildings is such that the majority of overshadowing will fall across Epping Road rather than residential uses, with sufficient daylight access to adjoining properties maintained during the critical winter solstice.
- The building framework:
  - provides good separation and maximises solar access and views to and from future apartments;
  - provides an alignment of the buildings on Herring Road that will activate this frontage;
  - maintains the landscape setback to Epping Road, softening the appearance of the development; and
  - creates a series of outdoor spaces for use by residents of the development as well as the general public through the siting of the buildings.

Visual Impact

A number of view analysis photomontages are presented in this EAR to demonstrate the impact of the proposed built form within the locality. Whilst the development will undoubtedly alter the Epping Road streetscape, it will activate the Epping Road frontage, and will clearly denote the entry to the Macquarie Park Corridor. The apparent visual impact of the development for motorists, other passersby and surrounding residents will be reduced through the provision of an articulated frontage, and by maintaining the existing landscaped setback to Epping Road.

Distant views to the site are generally obscured by vegetation and the topography, of the locality, as illustrated in the photomontages.

Landscaping and Streetscape

The Concept Plan and Stage 1 Project Application provide for significant open space areas, including the retention of the existing landscape setback to Epping Road. The proposal also includes the construction of Type 3 roads for dedication, internal access streets and a shared street which will be embellished with landscaping. The Concept Plan also proposes an entry plaza, children's play space and three garden spaces including the Pool Garden, Village Green and Garden of Earthly Delights, providing the concept of 'outdoor rooms' for residents within the development.

Social Issues

A Social Impact Assessment has been prepared for the Concept Plan, which concludes that the development provides a number of key social benefits including housing stock in an area of low supply, affordable housing options in the form of more 1 bedroom units, non-residential space to service the needs of the incoming population as well as provision of a communal meeting space. The only potential negative social aspects associated with the development are short term construction impacts which can be suitably managed.

The Stage 1 Project Application seeks approval for a housing mix as follows:

- maximum 52% 1 bedroom apartments;
- minimum 38% 2 bedroom apartments; and
- minimum 10% 3 bedroom apartments.

A similar assumed mix for Stage 2 has been utilised for traffic modelling purposes and to obtain a maximum car parking number. However, the detailed unit mix for Stage 2 will be responsive to market conditions at the time of lodging the Stage 2 application. As the overall number of parking spaces sought for approval (based on the assumed apartment mix) is below DCP requirements, it is not anticipated that excess parking will occur at Stage 2, notwithstanding any marginal adjustments to unit mix at the time of lodging Stage 2 application.

The housing mix proposed within the site is suitable given the demographic trends and realities of the housing market in Macquarie Park, the Ryde LGA and the wider Sydney region. More specifically, the housing mix is suitable as it adds to the diversity in housing choice. The proposed dwelling sizes will also ensure more affordable housing options are provided in the locality, and will contribute to the current undersupply of housing stock.

Economic Issues

The Concept Plan is supported by an Economic Impact Assessment that has determine the appropriate quantum of non-residential uses (retail / commercial) that can be supported by the incoming residential population. As a result, the Concept Plan proposes a minimum of 1,110m^2 of non-residential floor space, to be detailed at Stage 2 DA stage. The quantum of non-residential floor space proposed within the Concept Plan is considered appropriate given the established retail hierarchy in the area, with the Macquarie Centre providing a Specialised Centre of sub-regional importance, and the needs of local residents. Similarly, the site is not considered appropriate for commercial use, as the forecast growth in commercial floorspace can be absorbed within the existing business park without the need to redevelop peripheral sites.

The range of uses proposed on the site is enhanced by the provision of 35 Small Office / Home Office (SOHO) apartments, which will provide the opportunity for people to work near, or from, their homes.

Consideration of Uses Across the Zone

As detailed above, it is considered that the proposal will make a positive contribution to the B4 Mixed Use zone, enhancing the range of uses provided across the zone. Within the broader zoning of Macquarie Park, the B4 Mixed Use zoning is the only zone which permits residential development. However, much of the B4 zone is occupied by non-residential uses, including part of the Macquarie University Grounds and the Macquarie Shopping Centre. In addition, many of the existing residential developments in the zone along Herring Road are strata titled and are therefore unlikely to be redeveloped in the current statutory climate. This significantly limits the opportunity for increased residential densities within walking distance of the Macquarie University Train Station, and within close proximity to employment opportunities offered by the business park. The proposed development represents an important opportunity to provide residential accommodation near transport infrastructure and employment opportunities as well as entertainment and retail facilities, and will ease pressure on established residential areas to accommodate state government targets for infill residential development. The location of residential uses on the periphery of the mixed use spine is entirely appropriate with the core of the spine in proximity to the station dominated by retail, office and University uses, and the edges of the spine providing complementary residential uses.

Whilst only a small amount of non-residential floor space is proposed, the objectives of the zone are still upheld, with the development contributing to the mix of uses provided across the zone.

Access, Traffic and Transport

The site is highly accessible to public transport, with the Macquarie University Train Station located within walking distance of the site, providing access to the CBD. A range of bus services are also available within walking distance of the site.

The proposed parking rates are below Council's DCP controls, however exceed the requirements of the RTA's Guide to Traffic Generating Development. The provision of 790 parking spaces is considered appropriate, as it recognises the site's proximity to transport linkages and will encourage the use of sustainable transport modes. Further, an assessment of the proposal using Council's Paramics model has found that the development will only result in a very minor increase in traffic volumes, which will have no measurable impact on the existing operation of key intersections.

The internal road network proposed by the Concept Plan and Stage 1 Project Application seeks to modify Council's Network Structure Plan. The proposed road structure takes into consideration the existing lot boundary locations and alignments, and will ensure greater safety and efficiency. The internal road network will also provide for an extensive footpath systems, providing access opportunities for cyclist and pedestrians and a new lift / stair access from connections within the development to the existing bus stop on Epping Road.

Other Key Issues

The other key environmental assessment issues identified on the site relate to wind impact, noise, environmentally sustainable development, soil and water management, structural adequacy and geotechnical issues. It is considered that any potential impacts of the Concept Plan will be effectively mitigated by the draft Statement of Commitments, which supplements the findings of the Environmental Assessment.

Conclusion

This Environmental Assessment demonstrates that the matters for which Concept Plan and Project Application approval are sought are generally consistent with the relevant planning strategies applying to the site. Where variations are proposed to the relevant environmental planning instrument, they are considered appropriate given the absence of any environmental or amenity impacts, and the changing nature of the locality. We have no hesitation in recommending the Concept Plan and Stage 1 Project Application for approval.

1.0 Introduction

This Concept Plan and Environmental Assessment Report (EAR) is submitted to the Minister for Planning pursuant to Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This is to fulfil the Environmental Assessment Requirements issued by the Director General for the preparation of an Environmental Assessment of a Concept Plan and Stage 1 Project Application for a residential, mixed use development at 110 – 114 Herring Road, Macquarie Park.

The report has been prepared by JBA Planning, for the proponent, Stamford Property Services Pty Ltd. It is based on Concept Plan and Stage 1 drawings prepared by Allen, Jack + Cottier Architects (AJ+C) (refer to **Appendix A**) and supporting technical documents provided by the expert consultant team.

This EAR describes the site, its environs and the proposed development, and includes an assessment of the proposal in accordance with the requirements issued by the Director-General of the Department of Planning (the Department) dated 25 November 2010. This EAR should be read in conjunction with the information contained within and appended to this report.

These studies address the Director General's Requirements (DGRs) for the environmental assessment. They provide a technical assessment of the environmental impact of the proposed development, and recommend proposed mitigation measures to manage potential environmental impacts associated with the proposal.

1.1 Overview of Approval Sought

The Concept Plan seeks approval for:

- the layout of the development for seven (7) buildings, areas of open space and street network / layout;
- building envelopes (maximum height of RL144.65);
- a maximum total gross floor area (GFA) across the site of 56,892 m^2 (FSR 2.54:1);
- maximum car parking numbers of 790 spaces; and
- minimum GFA of 1,110m^2 for non-residential uses.

Approval is concurrently sought for the construction and use of Stage 1 of the Concept Plan. Stage 1 seeks consent for:

- demolition of all existing structures and improvements on the site;
- construction of basement parking for both stages[1];
- construction of four (4) buildings (as detailed in **Table 1**);
- landscaping and public domain works; and
- internal roads and services connections.

[1] It is noted that information supplied with the Preliminary Environmental Assessment Report (PEAR) indicated that Stage 1 would include part of the overall basement parking for the site. This EAR includes the full basement structure as discussed at Section 3.8.3.

Table 1 – Overview of Stage 1

Building	Maximum Height	Dwellings	Parking (spaces)	GFA (m2)
Hunter (H)	RL99.55	54		5,187
Woodward (W)	RL132.85	128		12,223
Cutler (C)	RL 110.45	84		7,876
Young (Y)	RL 100.20	45		4,238
Total		**310**	**332**	**29,524**

Stage 2 of the Concept Plan will be the subject of subsequent Development Application(s) for the detailed design of the various components of the development.

1.2 Approval Process

State Environmental Planning Policy (Major Development) 2005 (the Major Development SEPP) identifies development to which Part 3A of the EP&A Act applies, and for which the Minister is the consent authority.

Clause 6 of the MD SEPP states that development, which in the opinion of the Minister is development of a kind referred to in Schedule 1 of the SEPP, is declared to be a project to which Part 3A of the Act applies. The project falls into the class of development described in clause 13 of Schedule 1 - Residential, commercial or retail projects namely *"(1) Development for the purpose of residential, commercial or retail projects with a capital investment of more than $100 million"*.

The Concept Plan has an estimated Capital Investment Value of $175,549,891, as detailed in the Quantity Surveyors Statement prepared by Altus Page Kirkland (**Appendix B**). A separate Quantity Surveyors Statement has been prepared for the Stage 1 Project Application (refer to **Appendix B**). The Stage 1 works have a CIV of $129 697 229, and so is also well in excess of the $100 million threshold.

Therefore, in accordance with section 75B of the EP&A Act, and clause 6 of the Major Development SEPP, JBA Planning on behalf of Stamford Property Services Pty Ltd requested that the Minister:

- declare the residential and mixed use project at 110 – 114 Herring Road, Macquarie Park to be a Major Project subject to Part 3A of the EP&A Act;
- authorise the preparation and lodgement of a Concept Plan and Stage 1 Project Application for the site; and
- issue environmental assessment requirements for the Concept Plan and concurrent Stage 1 Project Application.

On 2 September 2010, the Minister declared the project to be a Major Project and authorised the preparation and lodgement of a Concept Plan and Stage 1 Project Application. On 25 November 2011, in accordance with section 75F of the EP&A Act, the Director-General of the Department of Planning issued the requirements for the preparation of an Environmental Assessment to accompany a Concept Plan and Stage 1 Project Application for the project.

A copy of the DGRs and authorisation to lodge a Concept Plan is included in **Appendix C**.

This report constitutes the EAR for a Concept Plan and Stage 1 Project Application for the site.

1.3 Project Team

An expert project team has been formed to deliver the project and includes:

Proponent	Stamford Property Services Pty Ltd
Urban Planning	JBA Planning
Architecture	Allen Jack + Cottier
Urban Design	Allen Jack + Cottier
Landscape Architect	Oculus Landscape Architects
Quantity Surveyors	Altus Page Kirkland
Geotechnical	Douglas Partners Pty Ltd
Civil Engineering	Meinhardt (NSW) Pty Ltd
Fire Services	AECOM
Hydraulics Engineer	AECOM
Environmentally Sustainable Design	Inhabit Group
BASIX Assessor	AECOM
Mechanical Engineer	Shelmerdines Consulting Engineers
Electrical Engineer	Shelmerdines Consulting Engineers
Traffic	Traffix
Surveyor	Denny Linker and Co.
Acoustic	Acoustic Logic
Wind	Vipac Engineers and Scientists Ltd
Building Regulations Consultant	Advance Building Approvals
Access Consultants	Accessible Building Solutions
Arborist	Earthscape Horticultural Services
Flora and Fauna	Total Earth Care
Economic and Social	Hill PDA

2.0 Site Context and Analysis

2.1 Site Location and Context

Regional Context

The Stamford Grand North Ryde site (the site) is known as 110 – 114 Herring Road, Macquarie Park. The site is located within the north-west portion of the Macquarie Park Corridor and within the north-eastern portion of the City of Ryde LGA. The site is approximately 13km north-west of the Sydney CBD and approximately 18km north-west of Sydney Airport.

The site has significant motorway, state and regional road access, and is located between the M2 Motorway and Epping Road. The M2 motorway is situated to the north-east of the site, with access to the north bound carriageway situated approximately 1 kilometre away via Herring Road, providing access to the north western suburbs. Epping Road is a state road which provides access to Epping and the CBD via the Lane Cove Tunnel.

Macquarie Park itself is nominated as a 'Specialised Centre' under the State Government's Metropolitan Strategy and the northern anchor of the Global Economic Corridor, which stretches from Sydney Airport and Port Botany to Macquarie Park. Specialised Centres are expected to perform a vital economic and employment role which will generate metropolitan-wide benefits.

In the urban hierarchy within the Inner North Subregion, Macquarie Park sits below North Sydney (Global City) and Chatswood (Major Centre) and alongside St Leonards as a Specialised Centre.

Macquarie Park is situated 6.5km to the west of Chatswood and is surrounded by a number of town centres, including Epping, Eastwood, Ryde, West Ryde and Lane Cove.

Local Context

The site has an area of approximately 22,433m^2 and is currently occupied by the Stamford Grand Hotel. It is bounded by Herring Road to the south east, Epping Road to the south west, with medium density residential development to the north-east and a retirement village to the north-west. Macquarie University is situated approximately 200m north of the site.

The site is situated within the Macquarie Park Corridor, which is a major component of Sydney's Global Economic Corridor and includes Macquarie University and Research Park, Macquarie Park Shopping Centre, residential precincts and business park uses.

The Epping to Chatswood railway line runs through the locality, with Macquarie University Station located at the corner of Herring and Waterloo Roads, approximately 650m to the north east of the site..

Macquarie Park is undergoing significant change, with a number of projects approved, planned or proposed that will substantially alter the built form of the area. Many approved or proposed buildings incorporate heights and FSRs that are much greater than those of existing developments.

The site's locational context is shown at **Figure 1**.

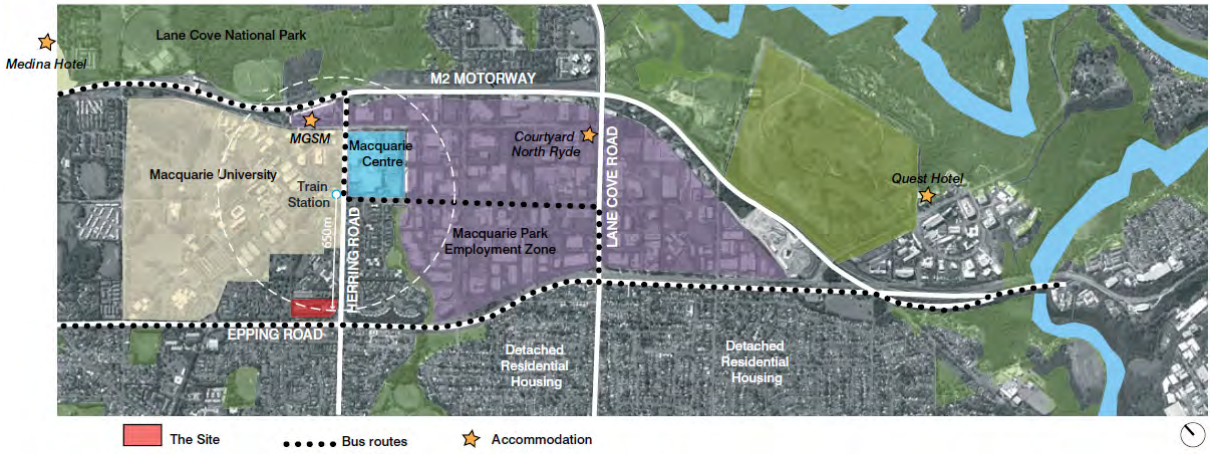

Figure 1 – Context Plan
Source: AJ+C

2.2 Site Description

110 – 114 Herring Road is situated on the corner of Epping and Herring Roads, Macquarie Park. A locality plan of the site is shown at **Figure 2** and a Site Analysis Plan, which visually demonstrates the key characteristics of the development site, is provided at **Figure 3**.

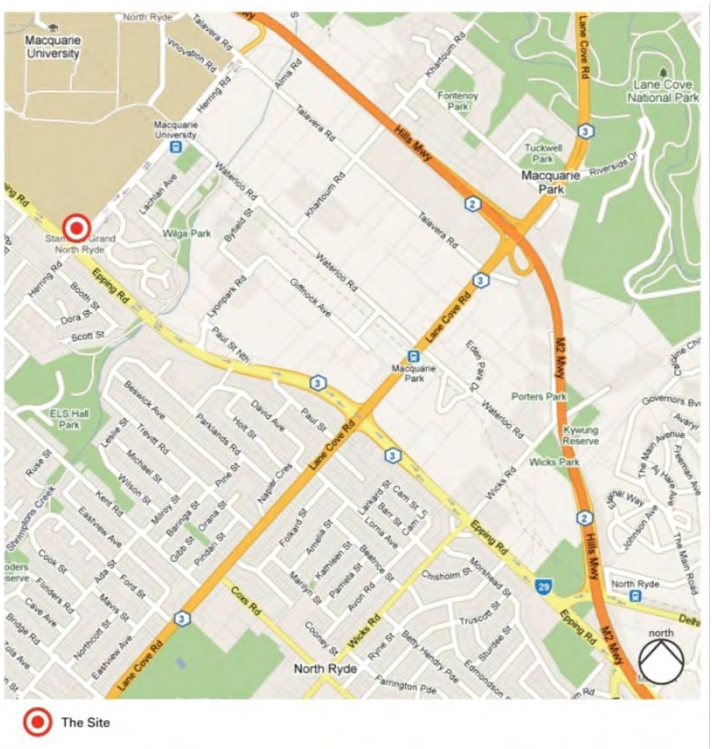

Figure 2 – Locality Plan
Source: JBA Planning

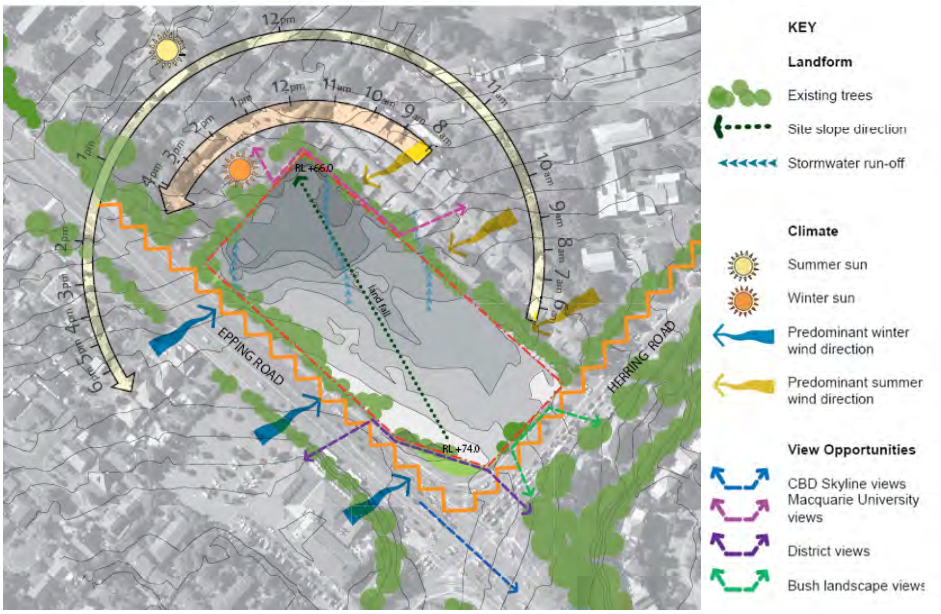

Figure 3 – Site Analysis Plan
Source: AJ+C

2.2.1 Existing Development

The site is currently occupied by the Stamford Grand North Ryde Hotel. The two storey hotel comprises 256 suites, with additional space for function and conference rooms. The hotel comprises a number of buildings which cover the majority of the site. In addition, there is a tennis court in the northern corner of the site, as well as a large internal courtyard area incorporating a pool, ornamental ponds and garden areas. A strip of at-grade parking extends along the south-western side of the complex on the site's Epping Road frontage.

The site's only vehicular access point is located off Herring Road, which provides access to the porte cochere. Photographs of the site are located at **Figures 4 - 6**.

Figure 4 – Hotel reception area viewed from the access point on Herring Road

Figure 5 – The southern corner of the site viewed from the intersection of Epping and Herring Roads

Figure 6 – The south-western boundary of the site, viewed from the west on Epping Road

Source: JBA Planning

2.2.2 Land Ownership and Legal Description

The land is owned by HSH (Australia) Trust as Trustee for SNR Trust. The site is legally described as Lot 1 in DP 780314. A Survey Plan has been prepared by Denny Linker & Co. and is located at **Appendix D**.

The proposed development is on a generally unconstrained site in single ownership. As outlined in the subsequent sections of this report, there is a limited availability of sites in single ownership for residential development in the Macquarie Park Corridor, with the opposite side of Herring Road dominated by strata titled apartments.

2.2.3 Landform, Soils and Topography

The site is located 40 degrees from magnetic north, and has good solar access to the north-western frontages of buildings. The topography of the site is characterised by a slight slope, which falls to the north-west, from RL74.0 to RL66.

Given the site's previous uses, most recently as a hotel, the site is unlikely to be contaminated. A Preliminary Contamination Assessment has been prepared by Douglas Partners (refer to **Appendix R**) which confirms that likelihood for contamination is low, and the site is suitable for the proposed development.

The site is not identified on RLEP 2010 maps as being affected by Acid Sulfate Soils.

2.2.4 Utilities and Infrastructure

All services, (i.e. sewer, water, electricity and telecommunications) are available to the site, and can be connected in accordance with the requirements of the relevant service providers.

2.2.5 Acoustic Environment

The site is currently affected by external noise sources, in particular noise from Epping Road which is identified as having traffic volumes in excess of 40,000 vehicles per day (RTA Traffic Volume Maps). Residential developments that are proposed next to busy roads are required to implement measures that will ensure prescribed noise levels are not exceeded, pursuant to clause 102 of *State Environmental Planning Policy (Infrastructure) 2007.*

2.2.6 Heritage and Archaeology

The only listed heritage items within the vicinity of the site are locally listed ruins on the Macquarie University site. An extensive search through the Aboriginal Heritage Information Management System (AHIMS) has revealed that there are no Aboriginal objects that have been reported to the Director General of the Department of Environment, Climate Change and Water within 200m of the subject site.

2.2.7 Vegetation

An Arborists Report prepared by Earthscape Horticultural Services (**Appendix E**) indicates that there are 243 trees located within, or immediately adjacent to the site. The vegetation is a combination of locally-indigenous, non-local native and exotic tree and palm species. The Flora and Fauna Assessment prepared by Total Earth Care Pty Ltd (**Appendix F**) adds that a significant proportion of the site lacks vegetation due to the site currently being dominated by the hotel and associated parking.

Approximately 90 of the trees on site are classified as nuisance or environmental weed species and as such, are not subject to a Tree Preservation Order. The remaining trees on site are subject to a Tree Preservation Order.

Several trees have been identified as being species of the Sydney Turpentine Ironbark Forest, a Critically Endangered Ecological Community under the *Threatened Species and Conservation Act*, which originally occupied the area. Whilst one of these trees, a *Syncarpia glomulifera* (Turpentine), appears to be a remnant tree, the majority appear to be planted. The single remnant tree is considered to be of limited conservation value due to its current condition, the lack of continuity with any bushland area or larger stand of trees, and the lack of native understorey within the site.

Aside from this, no other trees are threatened or vulnerable species, or form part of an Endangered Ecological Community under the provisions of the *Threatened Species Conservation Act 1995* (NSW) or the *Environmental Protection and Biodiversity Conservation Act 1999.*

2.2.8 Flooding

The site does not contain any part of the Macquarie University Creek nor is the site shown as being flood affected on the Ryde City Council 1984 and 1990 flood simulation maps.

2.3 Context Analysis

2.3.1 Planning Context

The site is currently zoned B4 (Mixed Use) under Ryde LEP 2010 (See **Figure 7**). Under the Ryde LEP 2010, the current development controls shown in **Figures 8** and **9**, include:

- a 15.5 metre height limit for the site (approximately 3 storeys); and
- an FSR of 1:1.

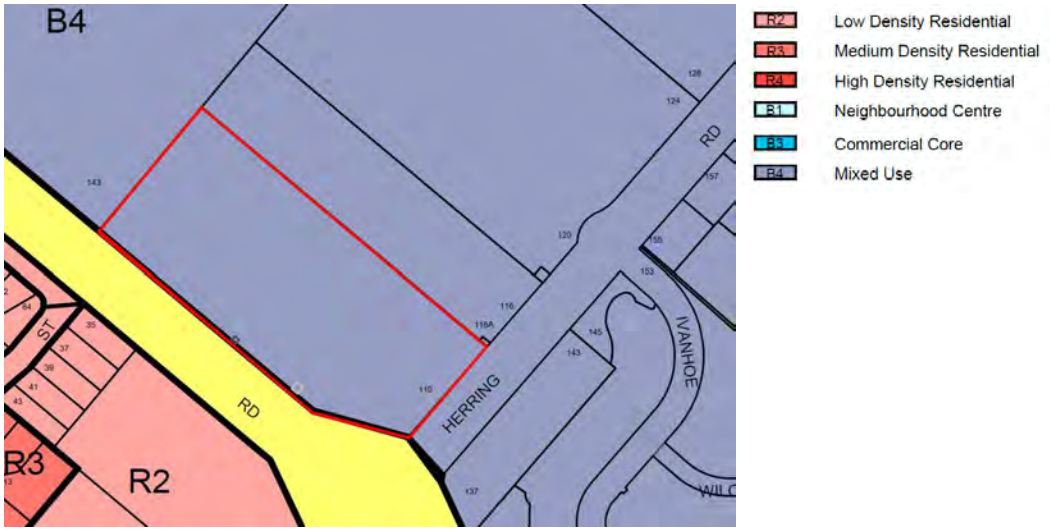

Figure 7 – Current zoning of the site (Ryde LEP 2010)
Source: City of Ryde Council

Figure 8 – Current Height Controls of the site (Ryde LEP 2010)
Source: City of Ryde Council

Figure 9 – Current FSR Controls of the site (Ryde LEP 2010)
Source: City of Ryde Council

Whilst the proposal is permitted in terms of land use, development of a scale and standard commensurate with meeting the relevant strategic planning objectives (including the Metropolitan and Sub-regional Strategies) cannot be achieved under the development controls applicable to the site, thus preventing any viable redevelopment option.

The site is included in the current draft Ryde LEP 2008 (Amendment 1) which deals with the Macquarie Park Corridor. Ryde Council and the Department of Planning are still in the process of resolving issues with the LEP Amendment which is yet to be formally publicly exhibited. The draft Amendment 1 was, however, informally exhibited at the time of the exhibition of the then draft City of Ryde Macquarie Park Corridor DCP in early 2008. Whilst the DCP was adopted in June 2008 and came into effect on 1 July 2010, LEP Amendment 1 remained unresolved. The Macquarie Park DCP references controls reliant on Amendment No. 1, without the parent draft LEP Amendment having been gazetted.

The version of Amendment No. 1 that is publicly available foreshadows increased height and FSR controls on the site. The relevant draft controls are shown in **Figures 10** and **11**. These controls are drawn from the draft version that was informally exhibited with the draft comprehensive LEP and include:

- a part 29.2m, part 36.8m and part 52m height limit across the site; and
- an FSR of 2:1.

Figure 10 – Potential height controls (draft Ryde LEP 2008 (Amendment 1) February 2008 version)
Source: City of Ryde Council

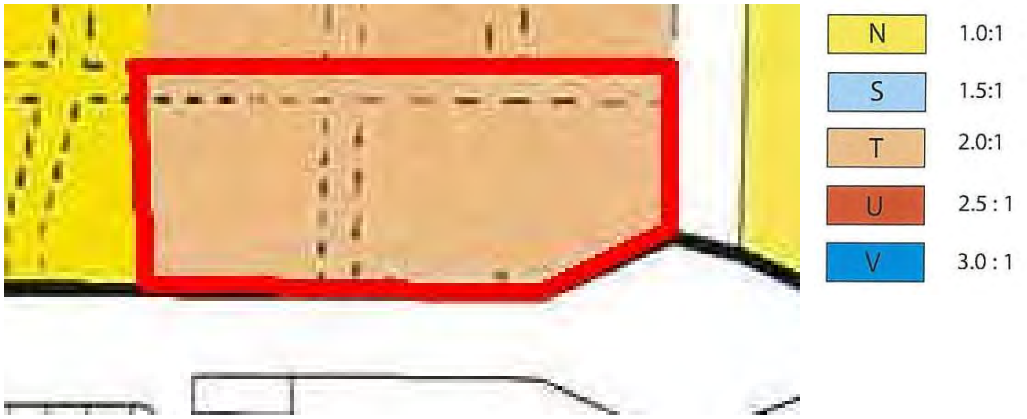

Figure 11 – Potential FSR controls (draft Ryde LEP 2008 (Amendment 1) February 2008 version)
Source: City of Ryde Council

Development on the site under its current controls would not fulfil the development potential of the site and would be inconsistent with the broader strategic aims. This would result in an under-development of the site which would, relative to land values, render it economically unviable. The proposed planning controls would also fail to provide a development that would achieve a desired built form in proximity to the station, transport interchange and regional shopping facilities.

With respect to the broader zoning of Macquarie Park it is only the B4 Mixed Use zoning which permits residential development. As shown in **Figure 12**, much of the B4 zoning is occupied by non-residential uses, including part of the Macquarie University Grounds and the Macquarie Shopping Centre. In addition, many of the existing residential developments in the zone along Herring Road are within strata title and are therefore unlikely to be redeveloped in the current statutory climate. This significantly limits the opportunity for increased residential densities within walking distance of the Macquarie University Train Station. The proposed development represents an important opportunity to provide residential accommodation near transport infrastructure and employment opportunities, as well as entertainment and retail facilities, and will ease pressure on established residential areas to accommodate infill development.

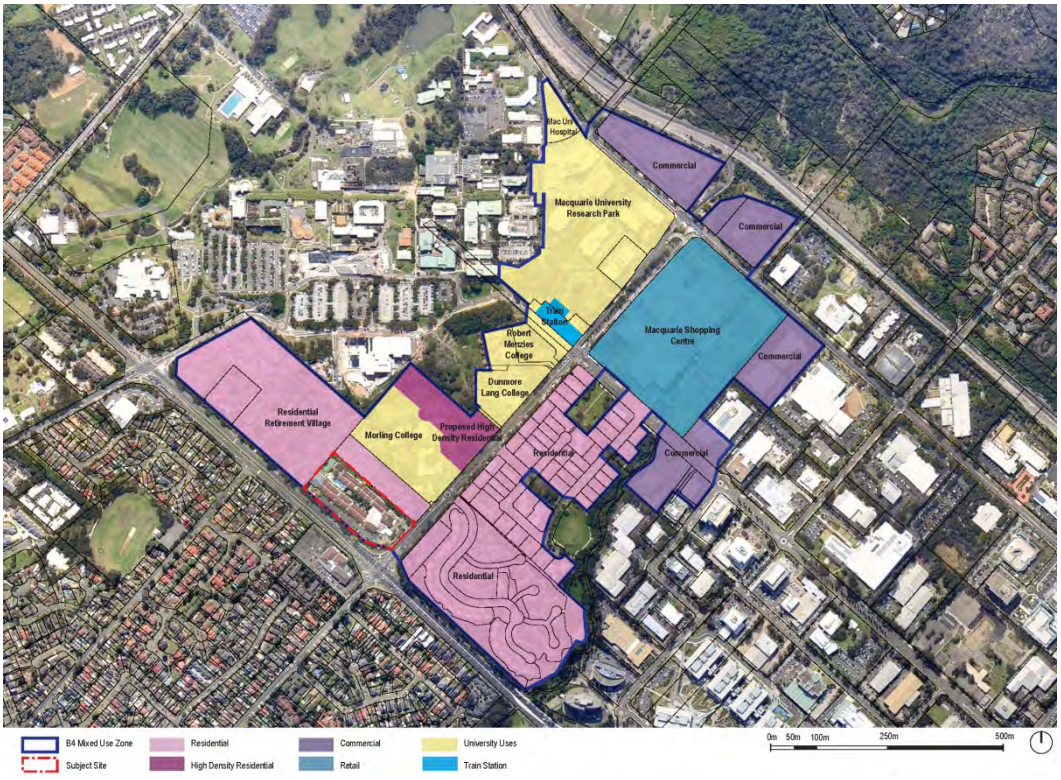

Figure 12 – Existing land uses within the B4 Mixed Use zone
Source: JBA Planning

2.3.2 Existing Building Types and Heights

As discussed above in Section 2.3.1 and demonstrated in **Figure 12**, the surrounding context comprises a diverse range of building types of varying heights, with the following key features:

- the Macquarie University Buildings to the north range in height from 1 to 8 storeys. The approved Macquarie University Concept Plan envisages the development of buildings up to 108m and approximately 460,000m^2 of GFA;
- the Macquarie Shopping Centre is a multi-level building of approximately 5 storeys;
- commercial buildings in the Macquarie Park corridor are generally 6-10 commercial storeys in height on large campus style allotments;
- the Morling College site is situated 150m to the north-east of the site at 120 – 128 Herring Road. A Preferred Project Report for a part 3A Concept Plan and Stage 1 Project Application has been submitted to the Department, which seeks to redevelop that site into 5 residential mixed use towers ranging in height from nine to 15 storeys. The development comprises approximately 561 apartments and car parking for 667 vehicles within the basement levels;
- to the south and south-west on the opposite side of Epping Road, outside of the Macquarie Park corridor, the building typologies relate predominantly to one or two storey residential buildings;
- The residential areas on the opposite side of Herring Road generally comprise strata title residential flat buildings ranging from three to four storeys in height and offer medium density residential housing in proximity to the station and Macquarie Centre;

- Directly adjoining the site are the following:
  - to the north-east of the site is 116 Herring Road. This site incorporates a four storey, medium density residential development known as Camden Place (**Figure 13**);
  - to the south-east of the site is 137 Herring Road. This residential complex comprises four, 3 storey residential flat buildings and is part of the broader Department of Housing Land on the south east side of Herring Road (**Figure 14**);
  - to the south of the site, on the opposite side of the intersection of Epping and Herring Road, are 2 storey dwelling houses and the Marsfield Ararat Medical Centre (**Figure 15**);
  - to the south-west of the site at 108 Herring Road is a hotel development known as 'The Ranch'. This facility incorporates a bar and outdoor terrace area, function rooms, restaurant area and fourteen guestrooms and associated car parking (**Figure 16**);
  - to the west of the site are low density residential developments on Waring Street, Marsfield (**Figure 17**); and
  - to the north-west of the site is the Willandra Village aged care facility run by Baptist Community Services and comprising one and two bedroom apartments and cottages within a landscape setting.

Figure 13 – 116 Herring Road, viewed from the South of Herring Road

Figure 14 – 137 Herring Road, viewed from the north-west

Figure 15 – Development on the opposite side of the Epping and Herring Road intersection, viewed from the north

Figure 16 – 'The Ranch' at 108 Herring Road, viewed from the north-east

Figure 17 – Low density residential development at Waring Street, Marsfield, viewed from the north-east

Source: JBA Planning

The diversity of building types reflects the areas transition to a Specialised Business Park centre indentified as part of the Metropolitan Strategy Global Economic Corridor. The area is emerging as an employment and education hub of state significance, assisted by the recent investments in rail infrastructure.

The availability for residential uplift and the ability to achieve the objectives of the State Plan by providing more jobs closer to home is limited by this existing context. The Macquarie Park Business Park prohibits commercial uses, whilst Herring Road, which has been identified by Ryde Council for uplift, is predominantly within strata title ownership.

The site at 110-114 Herring Road offers the opportunity of a site in single ownership, allowing planning and future development to proceed without the requirement for the coordination of multiple site owners or conflicting development designs (**Figure 18**).

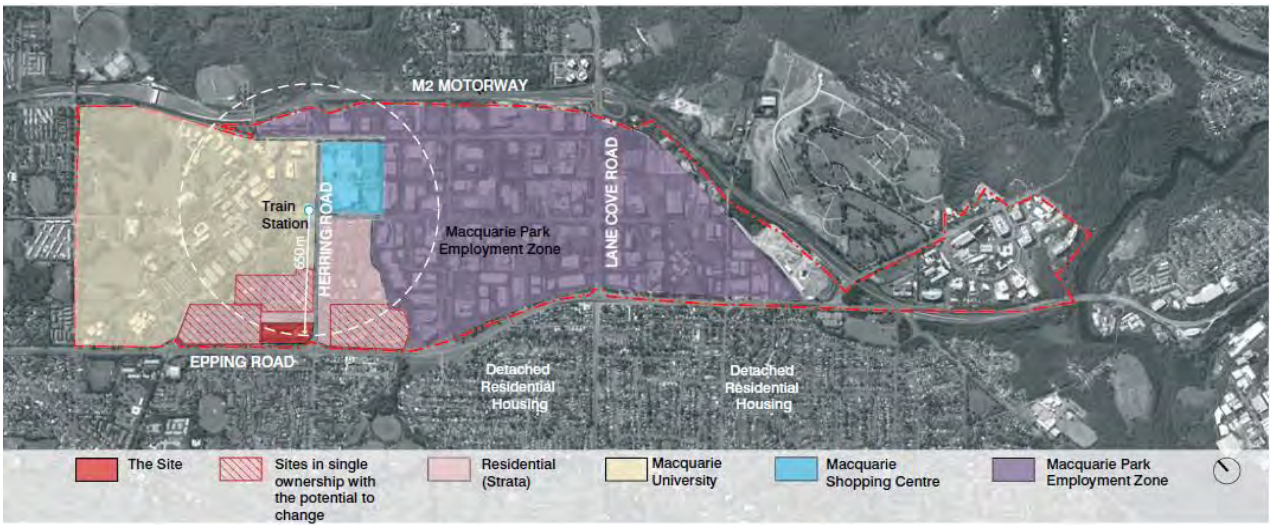

Figure 18 – Surrounding residential sites, capacity for change
Source: AJ+C

2.4 Future Building Context

The future urban form and building typology within the Macquarie Park Corridor projected by state strategic planning documents, local planning policy and approved and proposed Part 3A Concept Plans indicates that future developments within the corridor will accommodate greater building densities and heights, and more substantial built form. **Figure 19** demonstrates the potential and approved urban form along Herring Road, and the appearance of the proposed development within the future context.

A discussion of the appropriateness of the proposed development within the existing and future building context is provided at Section 6.8.

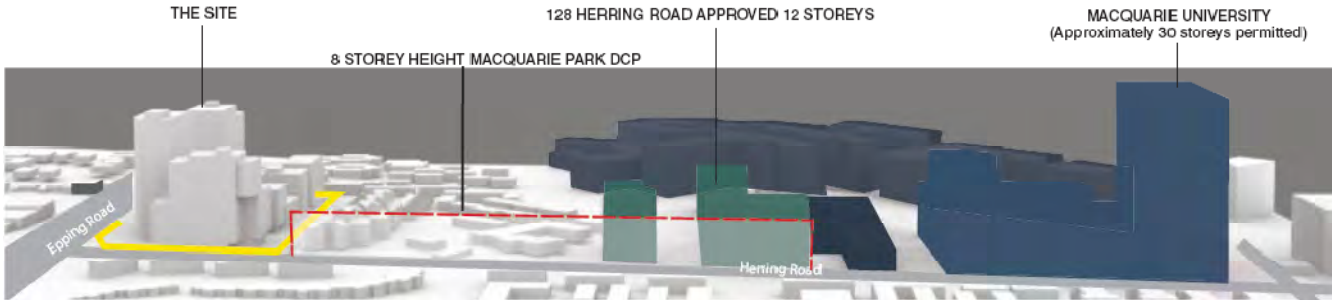

Figure 19 – Approved building heights along Herring Road
Source: AJ+C

2.4.1 Macquarie University Concept Plan

The Macquarie University Concept Plan and State Significant Site listing sets the planning and development framework for the Campus for the next 25 to 40 years. In summary, the Concept Plan has gained approval for:

- 400,000m^2 of commercial GFA;
- 61,200m^2 of academic GFA; and
- 3,450 beds for student housing.

The site lies in close proximity to Precinct E of the Concept Plan, which will ultimately be developed for high rise and high density commercial uses. Under the Concept Plan, building heights ranging between 16m and 108m are permissible along Herring Road (refer to **Figures 20** and **21**). Notably, heights of up to 108m above ground have been approved at the corner of Herring Road and Waterloo Road, in recognition of its proximity to infrastructure including the train station and bus interchange, as well as retail and entertainment facilities at the Macquarie Centre.

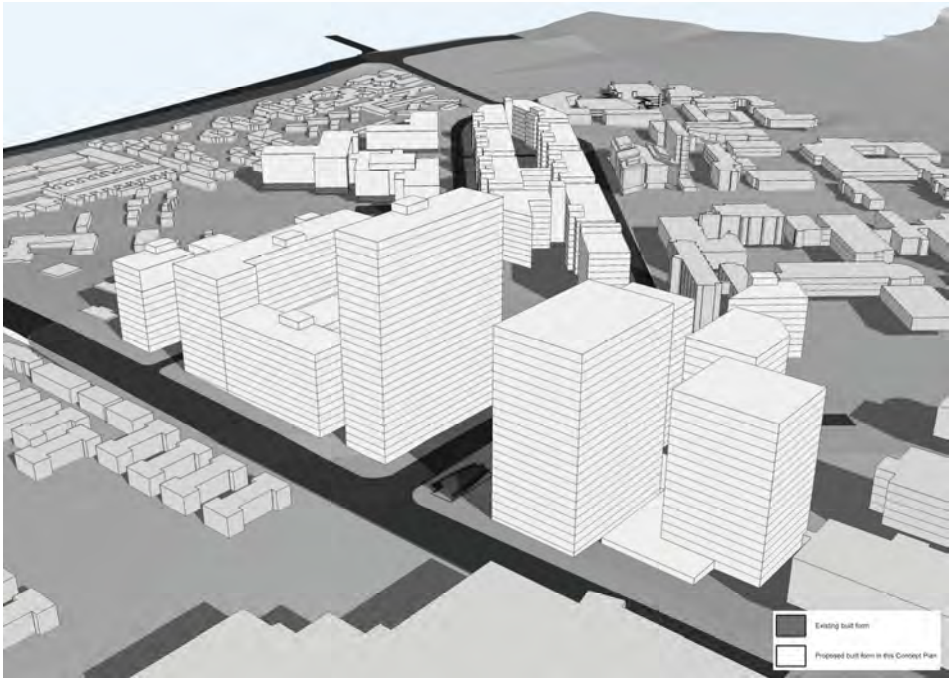

Figure 20 – Macquarie University Concept Plan indicative built form perspective (looking west from the corner of Herring Road and Waterloo Road)

Source: Macquarie University Concept Plan

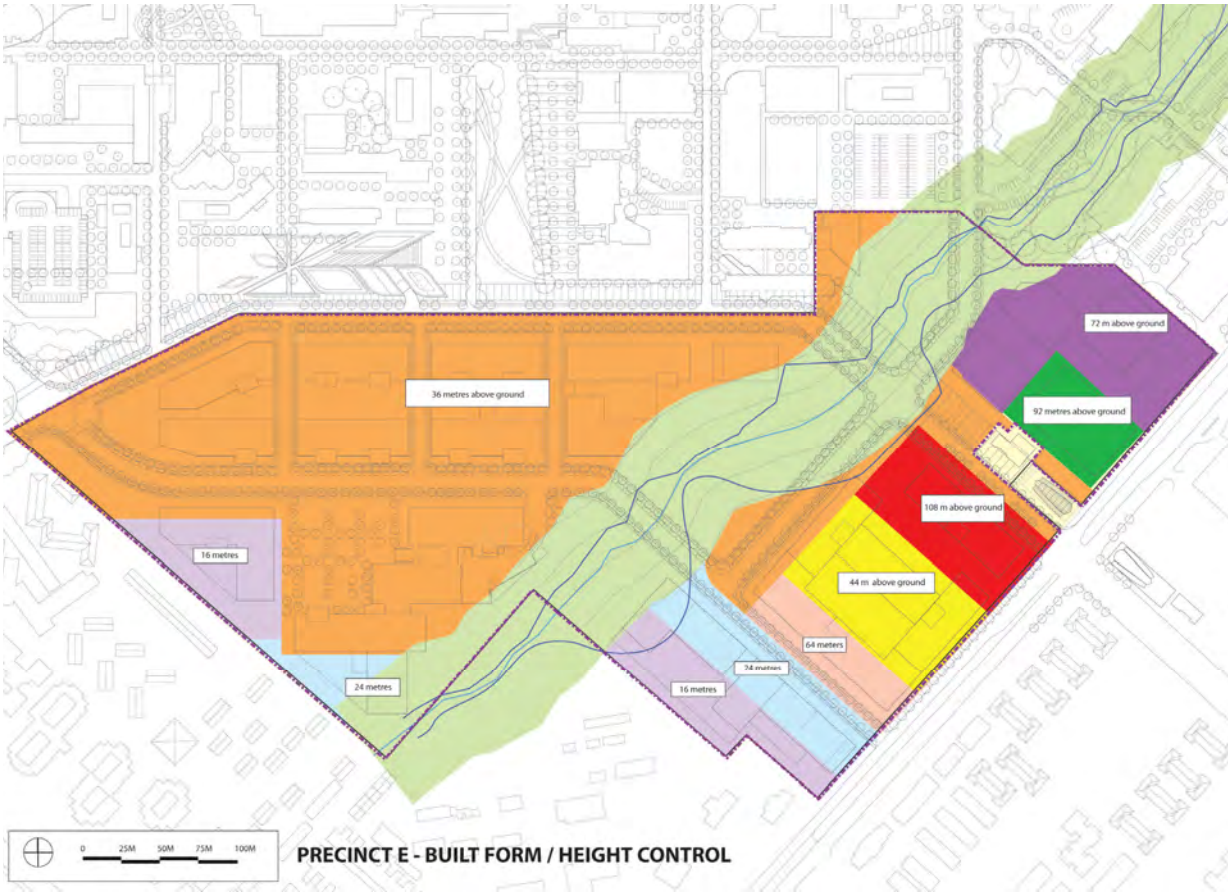

Figure 21 – Concept Plan indicative heights along Herring Road.
Source: Macquarie University Concept Plan

2.4.2 120-128 Herring Road, Macquarie Park (MP09_0195)

The Morling College site is situated 150m to the north-east of the site at 120 – 128 Herring Road. A part 3A Concept Plan and Stage 1 Project Application was submitted to the Department of Planning, in May 2010, seeking to redevelop the site into five, 12 storey residential mixed use towers comprising approximately 557 apartments and ground floor retail space. The proposal also sought car parking for 768 spaces within the basement levels. The proposal was modified at Preferred Project Report stage to seek approval for five residential mixed use towers ranging in height from nine to 15 storeys. The development was also modified to include 561 apartments and parking was reduced to 667 spaces.

2.5 Existing Transport and Access

Surrounding Road Network

The site is situated on the corner of Epping and Herring Roads, with a singular pedestrian and vehicle access point provided at the eastern corner of the site off Herring Road.

Public Transport

The site is well serviced by public transport as shown in **Figure 22**. Macquarie University Railway Station is located 650m to the north-east of the site, providing direct access to Hornsby, Epping, Chatswood, North Sydney and the CBD. In addition, Sydney Buses have many routes which travel directly past the site, providing services to Epping (288 and 290) and the Sydney CBD (288,290, 293, 507 and 518). Other routes are accessible within a 650m walking distance, which provide access to Chatswood (545 and 550), Parramatta (545 and 550), North Epping (295), Epping (294), Strathfield (459) and the Sydney CBD (292,294 and 506).

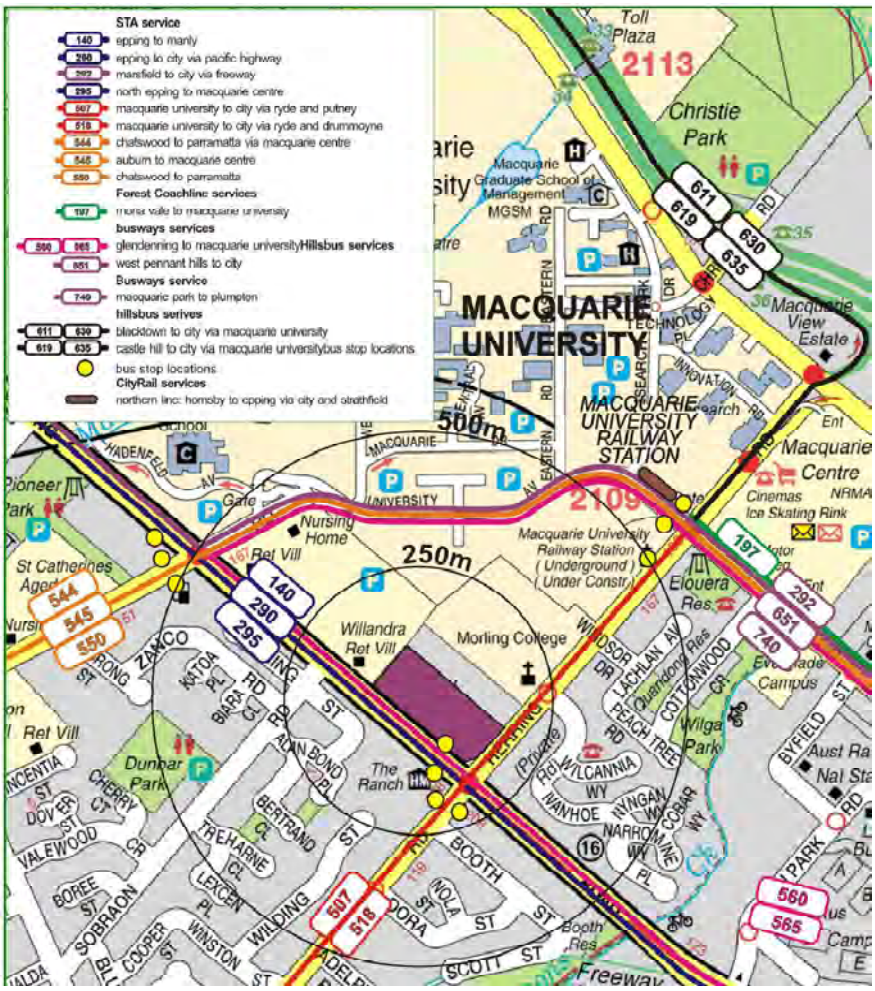

Figure 22 – Public transport services
Source: Traffix

Pedestrian

Pedestrian and cycle access in the vicinity of the site, and through the site, is generally limited, as priority is given to vehicular travel over pedestrian / cycle travel. However, signalised crossings exist at major intersections, with footpaths provided on both sides of Herring Road and Epping Road.

The main pedestrian route to the site comes from the Macquarie University Railway Station Portal which is located on the corner of Herring and Waterloo Roads.

Bicycle

There are presently few dedicated cycling facilities (i.e. on road bike lanes, shared paths) in the vicinity of the site. However, there are plans to expand the pedestrian and cycle network in the Macquarie Park Corridor under Ryde DCP 2010 which provides indicative regional and local bicycle routes throughout the Macquarie Park Corridor. Whilst there are no specific paths identified for the site, the objective to improve cycle links remains pertinent. DCP 2010 also makes provisions for end of trip facilities at train stations and developments.

2.6 Social Context

The Social Impact Assessment prepared by Hill PDA (refer to **Appendix G**) provides a detailed overview of the social context of the area based on figures from the 2006 Australian Bureau of Statistics (ABS). The following key attributes apply to the Primary Area of Influence (PAI), which encompasses the surrounding suburbs of Macquarie Park, North Ryde and Marsfield.

- the population of the PAI was 27,691;
- between 2001 and 2006, the population grew by 3.11%, which is lower than the population growth recorded in both Sydney (4.34%) and NSW (3.77%);
- between 2001 and 2006, the rate of housing growth was 0.77%, which is significantly lower compared to an average of 6.27% for Sydney and 6.11% for NSW;
- the average household size was 2.5 persons, which is generally similar to household sizes in Sydney and NSW;
- 13.86% of residents are within the younger age bracket, compared to 19.54% for Sydney and 19.83% for NSW;
- whilst 52.44% of the population was born in Australia and Oceania (compared with 63.27% for Sydney and 71.34% for NSW) 24% of residents were born in Asia;
- under the Ryde Section 94 Development Contributions Plan 2007, it is proposed that there will be 5,200 additional dwellings and 13,280 additional residents in the Macquarie Park Corridor over the next 10-15 years;
- the proportion of households renting is above the Sydney average, but below the NSW average;
- the proportion of family households in the PAI (63.8%) is lower than the average for Sydney (72.7%) and NSW (72.1%);
- the proportion of lone person households in the PAI (28.3%) is higher than in Sydney (23.1%) and NSW (24.2%), presumably as a result of the perception of the area as a location for younger workers and students;
- 7.9% of residents live in group households, which is well above the average for Sydney (4.2%) and NSW (3.7%) which is representative of the large student population;
- the PAI has lower unemployment rates than Sydney and NSW with only 5.1% of people unemployed (compared to 5.3% and 5.9% for Sydney and NSW respectively). There is also a higher proportion of professionals living in the PAI than in Sydney and NSW. This is reflective of the proximity to the business park;
- the median weekly income in the PAI was higher than in Sydney and NSW; and
- there is a significant proportion of households with incomes in the middle and lower brackets due to the large student population.

Overall, a number of these statistics are reflective of the proximity of the site to the University and business park uses. The statistics also highlight the low rate of housing growth in the LGA and immediate locality.

2.7 Summary of Site Opportunities and Constraints

The following is a summary of site opportunities and constraints.

Opportunities

- the land is generally capable of readily being formed for development to proceed;
- the site is ideally located within walking distance of Macquarie University Railway Station, bus interchange and bus stops along Epping and Herring Roads;
- the size of the site allows for a residential development yield that would support limited scale retail uses onsite that would not adversely affect the function of surrounding centres (i.e. Macquarie Shopping Centre);
- the site can be used to provide possible future public access and pedestrian links to adjoining and surrounding sites;
- development can proceed in a timely and non-fragmented manner as the site is in single ownership;
- the site is strategically located in that it has close, convenient and direct pedestrian access to:
  - the Macquarie Centre and its regional shopping and entertainment facilities;
  - Macquarie University and Research / Business Park; and
  - employment opportunities in the broader "Global Arc" as defined in the Sydney Metro Strategy.
- the site provides the opportunity for a residential development of a substantial scale, which will alleviate pressures faced by established residential areas to accommodate in-fill development;
- whilst some trees are representative of the original vegetation community within the area (Sydney Turpentine Ironbark Forest) all except one tree appear to have been planted. The majority of the site is unconstrained due to the existing built-up nature of the site;
- all major services including water, sewer, electricity, telecommunications and gas are available on, or can be provided to the site;
- there are no Aboriginal objects that have been reported to the Director General of the Department of Environment, Climate Change and Water within 200m of the subject site;
- the site is not identified on RLEP 2010 maps as being affected by Acid Sulfate Soils;
- the site is not affected by any significant topographical constraints; and
- the site is not shown as being flood affected on the Ryde City Council 1984 and 1990 flood simulation maps, nor does it contain any part of the Macquarie University Creek.

Constraints

- the site is located within proximity the noise sources, in particular Epping Road, which will require management / mitigation for residential uses;
- there is a need to consider the amenity of adjacent residential development in terms of privacy, overshadowing and visual impact;
- the integration of the proposed built form with the existing built form of the locality;
- consideration of views through the site from the public domain and from private and publically accessible areas; and
- the potential increase in traffic in the area, particularly Epping Road which is identified as having traffic volumes in excess of 40,000 vehicles per day.

3.0 Concept Plan

3.1 Introduction

The Concept Plan establishes the vision as well as the planning and development framework which will be used by the consent authority to assess future development proposals within the site. It articulates what Stamford Property Services Pty Ltd is seeking to achieve for future development and sets the broad parameters for the development of the site.

The Concept Plan seeks to deliver a planning and design outcome that responds to State Environmental Planning Policy No 65 – Design Quality of Residential Flat Development (SEPP 65) and the associated Residential Flat Design Code (RFDC) requirements as well as market conditions for the site.

This section of the document establishes the key development objectives and outcomes that underpin the development of the site. In accordance with the opportunities and constraints identified in the Site Analysis (Section 2), the project team has identified the main objectives for the project.

The Concept Plan vision for the site has been prepared by AJ+C Architects and is supported by technical studies which are appended to this report.

3.2 Peer Review

In response to consultation feedback regarding the bulk and scale of the Concept Plan, a peer review of the scheme was engaged by Stamford Property Services. Mr Ken Woolley, an eminent architect, was engaged to review the scheme. Ken has the qualities and experience to provide a review of the proposal, having won over 50 awards in his career including an Order of Australia for his services to Architecture and the Gold Medal from the RAIA. The Terms of Reference for the peer review, and the Peer Review Statement are included at **Appendix H** and **I** respectively. A number of internal project team meetings were undertaken, with the key findings of the review as follows:

- the highest urban density should be adopted to take advantage of the site's attributes, which include the absence of any significant cultural, landscape, wildlife or environmental effects;
- the proposal is of a medium height by normal standards for this density, and could be higher, as long as requirements for separation distances, solar access and open space are maintained;
- the proposal will take population pressure off more sensitive locations, such as the villages on the Northshore line;
- the separation distance created by Epping Road ensure that there will be no significant overshadowing or visual intrusion on areas to the south, avoiding impacts associated with the contrast in the scale of adjoining properties, an issue which plagues other infill development areas; and
- the site's location on the edge of the Macquarie Park Corridor is appropriate for predominantly residential development, located on the edge of a mixed use area, and within walking distance of the Macquarie Centre and railway station.

3.3 Concept Plan Vision

The design intent is to create a residential mixed use development that:

- contributes to the street network of the Macquarie Park Corridor;
- improves the spatial legibility of the Macquarie Park Corridor by providing a 'gateway' building on Epping Road;
- provides residential density commensurate with its proximate location to transport links and the business park;
- provides pedestrian permeability through the site at an accessible grade;
- maintains the landscape character along Epping Road by retaining existing mature trees within a landscaped setback;
- create a series of communal open spaces or 'outdoor rooms' that can be enjoyed by the residents; and
- enhances the safety and security of the Macquarie Pak Corridor by providing active frontages to streets and open space.

3.4 Concept Plan Objectives

The following objectives have been established for the project.

Economic

- to provide high quality residential space in the Macquarie Park Corridor; and
- to provide complementary non-residential uses on the site's Herring Road frontage that are supportable by the incoming resident population, and do not compete with the Macquarie Centre or Macquarie Business Park.

Community

- to provide a new road link and a fine-grained internal road network within the site and Macquarie Park Corridor;
- to provide communal meeting facilities and speciality retail facilities for use by local residents; and
- a commitment to public art that will enhance the public domain.

Environment / Sustainability

- to provide buildings which rely heavily on passive environmental design elements;
- to provide buildings which incorporate ESD features that will reduce the use of water and energy and commit to a 4 Green Star rating under the Green Building Council of Australia; and
- to encourage the use of public transport and other sustainable means of transport, through the provision of bicycle vouchers with the purchase of each apartment as well as one voucher per 100m^2 of non-residential GFA.

Urban Design

- to provide a 'bookend' for future development at the corner of Herring and Waterloo Roads under the approved Macquarie University Concept Plan;
- to provide a gateway building at the south-western corner of the site, marking the entrance to the Macquarie Business Park;
- to design a project which will have a significant urban renewal effect on the Macquarie Park Corridor;
- to provide complimentary non-residential uses at ground level to activate the Herring Road streetscape;
- to create a high level of pedestrian amenity and permeability at ground level with high quality public domain and landscaping treatments; and
- to create buildings and building envelopes capable of achieving design excellence with minimum impact on the adjoining land uses.

3.5 Concept Approval

The Concept Plan seeks approval for:

- the layout of the development for 7 buildings, areas of open space and street network / layout;
- building envelopes (maximum height of RL144.65);
- a maximum total gross floor area (GFA) across the site of 56,892 m^2;
- maximum car parking numbers of 790 spaces; and
- minimum GFA of 1,110m^2 for non-residential uses.

A numerical overview of the land uses, building heights, floor areas and car parking numbers for which Concept Plan approval is sought is included in **Table 2**.

Table 2 – Numerical overview of the Concept Plan

Development Element	Proposed
Proposed land use	Residential Mixed Use
Site area	22,433m^2
Floor Areas and FSRs	
Proposed Total GFA	56,892 m^2
Proposed Total FSR	2.54:1
Height	
Height in Storeys	4 - 20
Height (RL)	RL99.55- RL144.65
Land Uses	
Residential	Maximum Residential GFA of 56,921m^2
Non-residential	Minimum non-residential GFA of 1,110m^2
Parking	
Proposed Total Car Parking On-Site	790
Landscaping	
Landscaping Area	5,426m^2 (31% of developable area)
Deep Soil Zone	1,406m^2 (26% of landscape area)

3.6 Building Envelopes

The proposed building envelopes are discussed below. **Figure 23** is provided for reference purposes, providing a layout of the site and the building names.

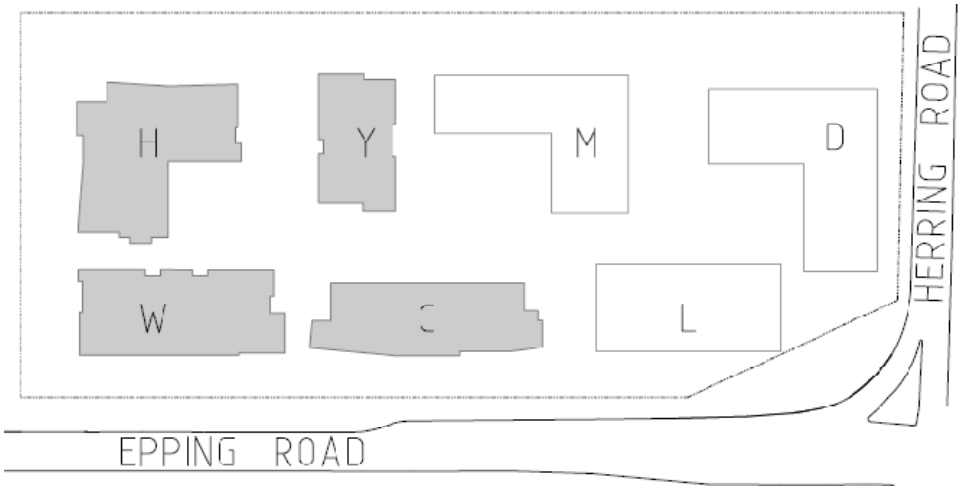

Figure 23 – Proposed building layout and building names
Source: AJ+C

3.6.1 Proposed Floor Space and Building Footprints

The proposed building envelopes are illustrated in the Concept Plans for approval and are provided under separate cover. The proposed GFA for the Concept Plan, calculated in accordance with Ryde LEP 2010, is 56,892m^2.

Maximum building footprints are illustrated in the Concept Plan drawings for Stage 2. Concept Plan approval is only sought for the overall maximum quantum of GFA across the site. We do not seek to lock down GFA by building to ensure some flexibility between stages. Detailed consent for buildings is sought for the Stage 1 component of the Concept Plan.

3.6.2 Building Heights

Table 3 sets out the maximum building heights for each new building. As shown on the Architectural Drawings prepared by AJ + C (refer to **Appendix A**), building heights are measured by the maximum RL. **Figure 24** graphically demonstrates the proposed variations in heights across the site in both RL and metres.

The overall maximum height of development on the site ranges from RL99.55 AHD (Building H) to RL144.65 AHD (Building L).

To assist in the assessment of the Concept Plan building envelopes, the indicative number of habitable storeys contained within the design scheme (not for approval) is provided in column 3 of **Table 3**.

Table 3 – Proposed Maximum Building Heights

Building	Maximum RL (for approval)	Indicative Number of Habitable Storeys (excludes plant zone)
Hunter (H)	99.55	8
Young (Y)	100.20	8
Cutler (C)	110.45	11
Woodward (W)	132.85	18
Martin (M)	101.60	8

Building	Maximum RL (for approval)	Indicative Number of Habitable Storeys (excludes plant zone)
Darling (D)	126.80	15
Loftus (L)	144.65	20-22*

*Facing Epping Road (20 habitable storeys). Appears as 22 storeys when viewed internally within the site due to the topography of the site.
Note: The number four has been removed from the floor nomenclature.

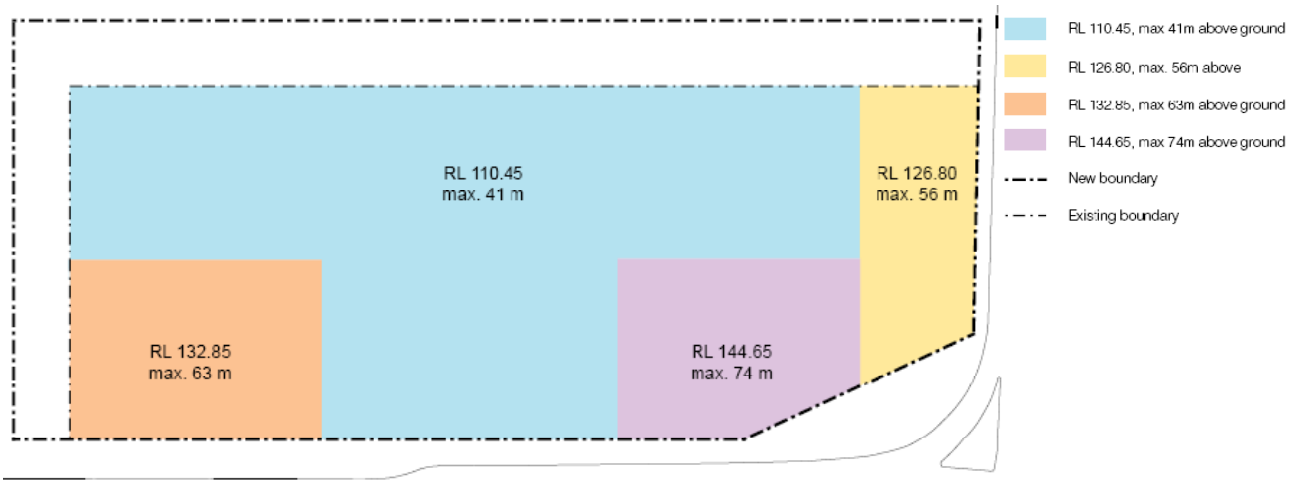

Figure 24 – Heights across the site in RL and metres
Source: AJ+C

As discussed in Section 6.8, the proposed heights are considered appropriate, and have been designed to achieve the best amenity, and urban design outcome for the site. By locating taller buildings on the site's southern boundary, solar access to open space and residential apartments will be maximised. Similarly, by modulating the heights of buildings along Epping Road, the visual bulk and mass of buildings on this frontage will be reduced.

3.6.3 Built Form

The built form strategy for the site is provided at **Figure 25**. The development has been designed to maximise internal amenity, and mitigate against any potential negative impacts. In summary, the built form strategy has:

- orientated the landmark building east-west along Epping Road to create a slender landmark building. A gateway building on the primary arterial road is considered a better response than on the narrower, secondary frontage of Herring Road;
- modulated building heights to reduce the overall mass and bulk of the development along Epping Road and to prevent the appearance of a wall buildings;
- located lower buildings in the north and north-eastern parts of the site to optimise solar access to open space and taller buildings to the south;

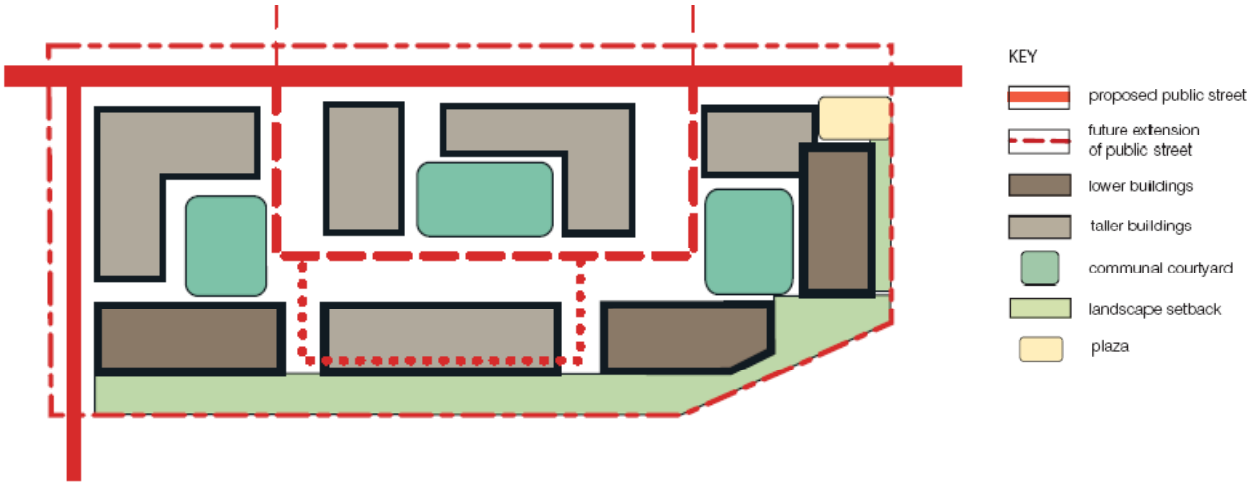

Figure 25 – Built form strategy
Source: AJ+C

3.6.4 Setbacks and Building Separation

Setbacks

The setbacks between the proposed buildings (and buildings on neighbouring sites) are shown in the setback diagram at **Figure 26**. The following minimum setbacks are proposed:

- 10m to the south-western (Epping Road) boundary;
- 5m to the south-eastern (Herring Road) boundary;
- 5m to the southern (corner of Herring and Epping Roads) boundary;
- 16.1m to the north-eastern boundary; and
- 13.5m to the north-western boundary.

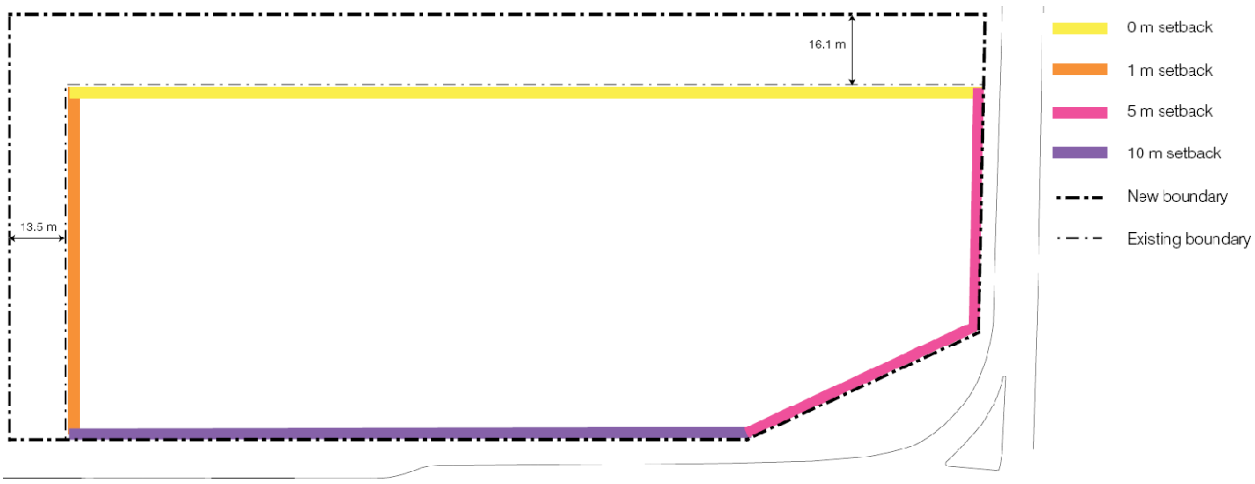

Figure 26 – Setback control diagram
Source: AJ+C

As discussed in Section 6.8.2, the 10m landscaped setback to Epping Road is consistent with the DCP controls, enabling deep soil landscaping and the retention of many of the existing mature trees. The 5m setback to Herring Road acknowledges the corner location of the site, and will improve the urban form and spatial definition of the corner. It will also ensure a better relationship between the proposed ground level retail and the street.

The proposed setbacks to the north-eastern and north-western boundaries are appropriate as they reinforce the street hierarchy and scale. Further, the internal roads provide separation between the proposed development and neighbouring properties, ensuring that the amenity of neighbouring properties is maintained.

Building Separation

Internally, the buildings have been separated to provide for the privacy and amenity of residents. Building separation distances range from 6m between the four and eight storey elements of Buildings Y and M, to 24m between the 11 and 20 storey elements of Buildings D and L. Compliance of the separation distances with the relevant controls, and the manner in which they maintain residential amenity is discussed in Section 6.11.

3.7 Mix of Uses

3.7.1 Indicative Stage 2 Design

Illustrative design material, showing indicative concepts for Stage 2 has been prepared by AJ+C and Involve Studios. This material is included as part of the AJ+C architectural drawings, but does not form part of the Concept Plan approval for the Stage 1 Project Application. It is provided for information purposes only to assist the consent authority in its assessment of the Concept Plan.

The indicative design plans show how appropriate development could occur within the Stage 2 building envelopes and has been used as the basis for a preliminary assessment to demonstrate the suitability of the proposed Concept Plan with SEPP 65 design principles in the Environmental Assessment at Section 6.11.

An indicative unit mix has also been used to model the maximum number of apartments on site to and allow an assessment of the overall site traffic generation.

Detailed Stage 1 drawings are submitted for approval, whilst for Stage 2, approval of building envelopes, included on the plans only.

3.7.2 Apartment Mix

The Stage 1 Project Application is seeking approval for the following mix of housing across the site:

- maximum 52% one bedroom apartments;
- minimum 38% two bedroom apartments; and
- minimum 10% three bedroom apartments.

A similar assumed mix for Stage 2 has been utilised for traffic modelling purposes and to obtain a maximum car parking number. However, the detailed unit mix for Stage 2 will be responsive to market conditions at the time of lodging the Stage 2 application. As the overall number of parking spaces sought for approval (based on the assumed apartment mix) is below DCP requirements, it is not anticipated that excess parking will occur at Stage 2, notwithstanding any marginal adjustments to unit mix at the time of lodging Stage 2 application.

As demonstrated in the Social Impact Assessment at **Appendix G**, and Section 6.16 of this report, the proposed mix is supported by an analysis of the residential market and demographics in the area.

3.7.3 Non-Residential Land Uses

The Concept Plan is seeking approval for a mix of residential and non-residential uses on the site. The indicative design scheme shows that non-residential uses, along with residential development, are proposed within Buildings M, D and L, primarily on the site's Herring Road frontage, and fronting onto the internal open space. All other buildings are proposed to be solely residential, however a number of SOHO apartments are proposed, which are suitable as home offices for residential / commercial use. As part of the Concept Plan, 1,110m^2 of non-residential floor space is proposed. This comprises:

- commercial / retail floor space; and
- communal space (under Strata Management) including a community meeting room.

The proposed non-residential uses will activate streets and plazas with non-residential uses and will create an 'activity hub' around the eastern corner of the site close to Herring Road.

The detailed design and use of these spaces will form part of the Stage 2 Development Application. Further justification for the proposed mix of uses on the site is provided in Section 6.17.

3.8 Street Layout, Access and Parking

3.8.1 Street Layout

The proposed development will make a contribution to the future street network of the Macquarie Park Corridor. The existing street network, the network proposed under the Macquarie Park Corridor DCP and the street structure proposed by the Concept Plan and Project Application is provided in **Figures 27, 28** and **29** respectively.

The existing street network (refer to **Figure 27**) is characterised by a lack of permeability with a large street block structure defined by main and arterial roads. Whilst a number of large site in single ownership (including the Stamford Grand North Ryde, Macquarie University and 128 Herring Road sites) have private internal roads, none of these are connected together, further exacerbating the lack of permeability.

The street layout proposed in the Macquarie Park Corridor DCP (refer to **Figure 28**) seeks to increase the permeability of the existing large street blocks, by incorporating new streets as development occurs. The DCP proposes two local roads through the site, and assumes that the site to the north will contribute to the street network when it is redeveloped. As this site is in strata ownership, it is considered unlikely that it will be redeveloped to provide the new connecting roads.

After consultation with Ryde Council, the proposed future street network (**Figure 29**) departs from the DCP, providing new local streets along the north-eastern and north-western boundaries of the site, which it is proposed to dedicate as public roads. Only one half of a road will be constructed on the site's north-western boundary, which will provide a future access point off Epping Road. The other half will be completed with the redevelopment of adjacent sites. The proposed street network will ensure that all buildings in the Concept Plan will have a street address and frontage, with internal streets to provide access to car parking and servicing. The street network has been designed to maximise physical and visual connections and access around the site, by breaking the site into smaller development parcels.

The design will achieve increased permeability, with a fine-grained street network that will provide for pedestrian and vehicular movements.

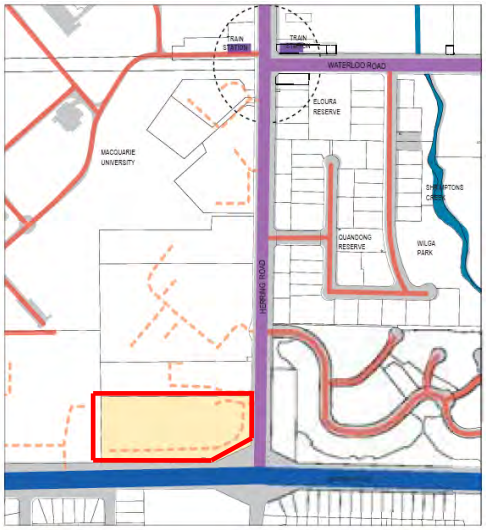

Figure 27 – Existing street network

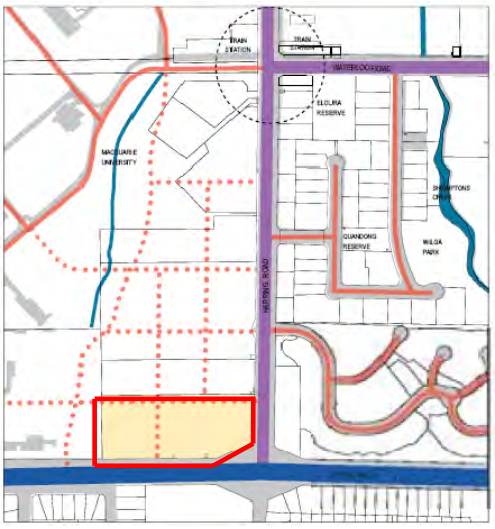

Figure 28 – DCP street network

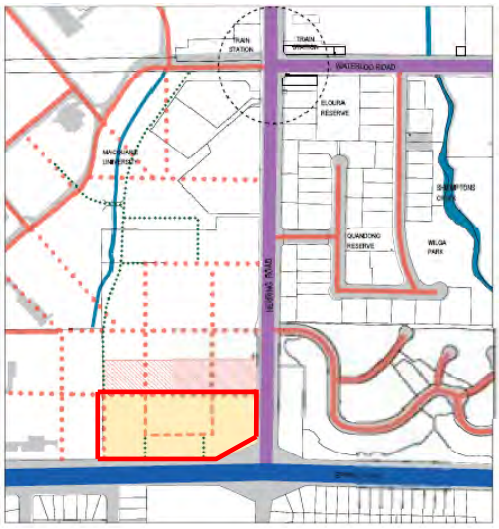

Figure 29 – Proposed street network

Source: AJ+C

3.8.2 Provision of Type 3 Road and Vehicular Access

There are two Type 3 roads proposed within the site which are proposed to be dedicated and ultimately maintained by Council. As show in **Figure 30**, one of these is the primary east-west connection through the site, on the site's north-eastern boundary. The second Type 3 road is located on the site's north-western boundary. This north-south road would be open to through traffic upon development of the adjacent site, when the second half of this road will be developed and dedicated.

The vehicle access way from Herring Road will provide access to the two-way Type 3 road along the site's northern-eastern boundary as well as the one-way Type 3 road along the north-western boundary (until such time as the adjoining site is developed and it becomes a two-way road). The Type 3 road on the northern-eastern boundary provides the primary east-west connection through the site, and will accommodate all vehicular movements into and out of the site until the Type 3 road is opened on the site's north-western boundary.

This road also enables access to the internal two-way loop road which provides various access points to the basement car parking. Wherever possible, vehicular entries to basements will be located on building facades, and will have a high degree of finish, so as to create a 'front door' for residents returning home by car.

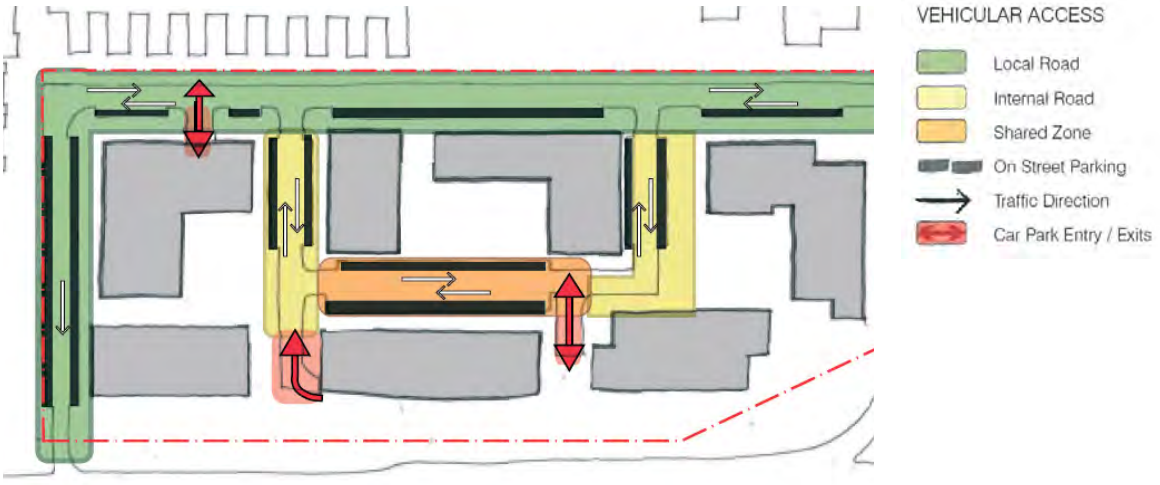

Figure 30 – Proposed internal road network, connections to external road network.
Source: AJ+C

3.8.3 Car Parking

790 car parking spaces are proposed on the site, both above ground and in the basement car park. Whilst the parking rates are lower than Council's DCP controls, they exceed the requirements of the RTA's Guide to Traffic Generating Development. 715 spaces will be accommodated within the one contiguous basement on the site. The basement will be built as part of Stage 1, with access blocked to the second half of the basement until works on Stage 2 are complete. Having one basement minimises perimeter piling and maximises shared facilities including entries and internal ramp arrangements. The basement is two and a half levels deep, and lies across the whole site, however it will not limit the provision of deep soil planting on the Epping Road frontage.

3.8.4 Pedestrian Access

The pedestrian access strategy has been established to encourage permeability across the site. In combination with the street layout and road hierarchy, the pedestrian strategy seeks to establish key access nodes at points of high connectivity, connected by a series of well defined footpaths and walkways. The provision of footpaths and walkways will also reduce the potential for conflicts to arise between pedestrians and motor vehicles. The key features of the pedestrian network include:

- primary building entries, generally located on key circulation paths and roads with a high level of pedestrian connectivity;
- secondary building entries, primarily located adjacent to the shared pedestrian / vehicular roads, creating high levels of permeability to the built form;
- on-grade access (at RL70) across the site; and
- stair and lift access to Epping Road and the existing bus stop.

3.8.5 Bicycle Facilities

As described above, there are few bicycle facilities in the area. The proposed development will enhance connectivity for cyclists, enabling them to avoid the busy intersection of Herring and Epping Roads. It is also proposed that every apartment will be provided with a 50% discount voucher to purchase a bicycle (from a range of bicycles approved by Stamford), to encourage sustainable transport modes. One voucher will also be provided for every 100m^2 of non-residential GFA. Provisions have been made for bicycle storage in the basements of residential buildings within the Stage 1 Project Application, and will be made in any subsequent Development Application to Council for Stage 2.

3.8.6 Public Transport

As detailed in Section 2.5, the Macquarie Park corridor is already well served by public transport, with access to bus and train services. The proposed Concept Plan and Project Application will not restrict access to public transport facilities.

3.9 Landscaping and Public Domain

A Landscape Statement and Landscape Concept Plans (which forms part of the Concept Plan Design Report) and Stage 1 Landscape Plans are located at **Appendix J** and **K** respectively. Through landscaping and public domain design, the development has the opportunity to enhance the urban qualities of the area and to create a place that will be active and vibrant. With this in mind, the landscape concept has been based on the following key principles:

- recognising and reflecting the importance of the site and its key location on the corner of Herring and Epping Roads;
- enhance the identity of the site and provide a series of logically well connected landscape areas, creating a series of outdoor rooms;
- providing clearly legible and safe pedestrian connections throughout the development and to the surrounding streets;
- reinforcing the main internal street as the primary structuring device for the development;
- incorporating simple design treatments and a selection of robust landscape materials that minimise maintenance;
- retaining trees along the Epping Road frontage;
- providing a planting palette that provides a distinct landscape character that utilises a combination of native and exotic plant material; and
- incorporating water sensitive urban design (WSUD) initiatives in the streetscape and other locations where appropriate.

The proposed landscape and public domain elements, as shown in **Figure 31**, include the:

- type 3 road proposed for dedication;
- internal access streets under community title;
- shared street;
- entry plaza;
- Pool Garden, Village Green and Garden of Earthly Delights;
- children's play space;
- Epping Road buffer; and
- pedestrian entry gardens.

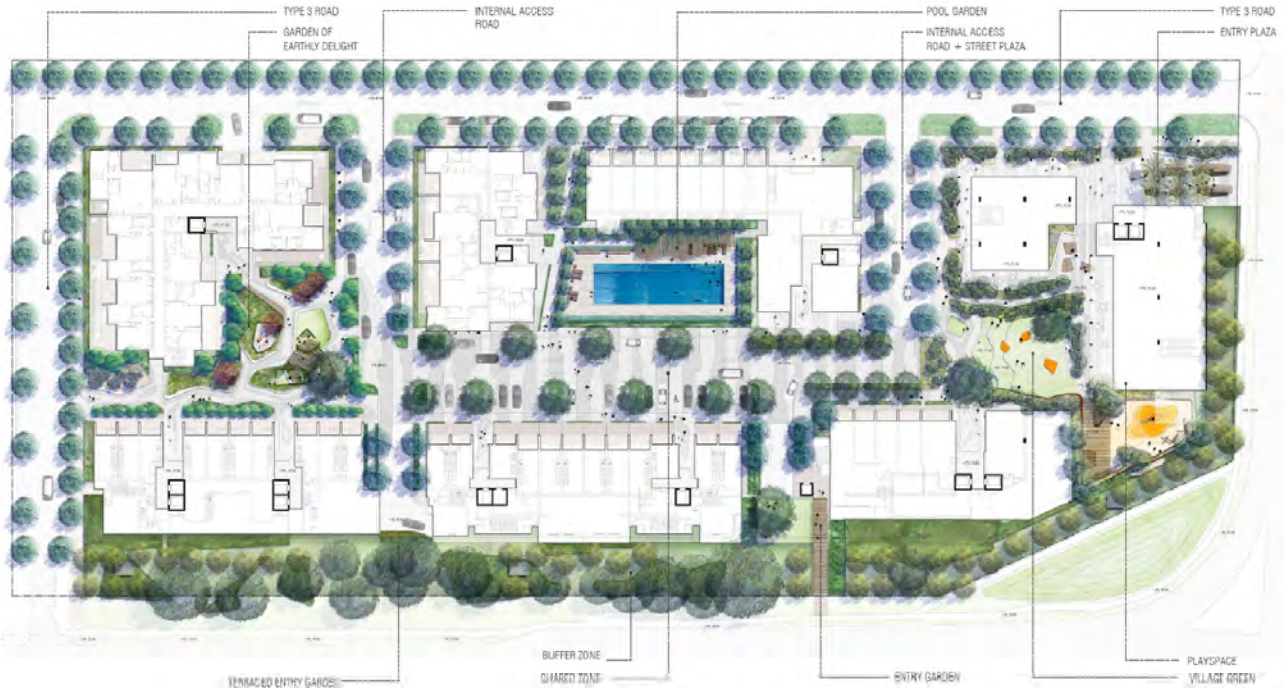

Figure 31 – Landscape Masterplan
Source: AJ+C

The public domain comprises a network of communal open spaces for active and passive use. The three main communal gardens (the Pool Garden, Village Green and Garden of Earthly Delights) are the primary communal spaces, each with a different character and function, which is expressed through the diversity of scale, forms and planting. In addition to these spaces, the publicly accessible plaza and potential cafe use at the Herring Road entrance to the site will activate the Herring Road frontage. Transitional spaces between the site's main landscape elements will enable people to access the building lobbies and provide connections through the site.

The majority of the site's landscaping will be created over the carpark structure. The exception to this is the landscaping associated with the Type 3 roads and the buffer planting along the Epping and Herring Road boundaries. This deep soil landscaping comprises 1,406m^2 or 26% of the site's total landscaping. Whilst the two Type 3 public roads on the site's north-eastern and north-western boundaries primarily provide vehicular access to the site, they also incorporate significant landscape features. The Type 3 road on the north-western boundary has a contiguous rain garden along the northern side and at regular intervals along the south side to assist with the treatment and cleaning of stormwater before it enters the Lane Cove River. The east-west shared street in the centre of the site is also an important landscape feature, with a shady avenue of large trees and WSUD tree pits. This street also acts as the development's spine, providing pedestrians with access to all buildings, lobbies, gardens and pathways.

3.9.1 Public Art and Community Facilities

In accordance with Ryde DCP 2010, public art must be included in all new development on sites over 15,000m^2. Preliminary consultations have commenced with a Public Act Consultant, and a commitment has been made to the provision of a Public Art Strategy prior to the issue of an Occupation Certificate for Stage 1 in the Statement of Commitments at Section 7.

In addition to the provision of public art, a range of community facilities will be provided for use by residents of the site, as well as the general public, including:

- publicly accessible communal open space;
- residents swimming pool;
- residents gym; and
- publicly available communal meeting room.

3.10 Services and Infrastructure

As detailed below, all services are available to the site and can be connected in accordance with the requirements of the relevant service providers.

Stormwater

A Stormwater Management Plan has been prepared by Meinhardt Infrastructure and Environment (refer to **Appendix L**). An easement is required to facilitate stormwater connection to Council's stormwater system. Stamford has begun negotiations with Ryde Council and the owners of 143 Epping Road to create the easement. The securing of the easement will be provided to the Department of Planning prior to the issue of a Stage 1 Construction Certificate

Potable Water

Correspondence from Sydney Water (refer to **Appendix M**) indicates that the 100mm drinking main fronting the proposed development does not comply with the Water Supply Code of Australia. As such, a main extension is required to be upgraded to 150mm to serve the development, and will be undertaken as part of the Stage 1 works.

Electricity

The existing surface chamber type substation will be demolished during the first stage of the development. Three new 1,000kVA kiosk type substations are required to serve the development. These will be located on the Epping Road side of Buildings W, C and L, and will comprise standard Energy Australia pad mounted substations location on the ground in suitable locations, with trafficable access as required by Energy Australia Standards. They will be established on site to suit the staging of the works. It is expected that substations 1 and 2 (associated with Buildings W and C) will be required as part of Stage 1, with the third substation installed as part of Stage 2 of the development.

Telecommunications

An Electrical Design Principles Statement has been prepared by Schelmerdines (refer to **Appendix N**). New telephone and data cabling will be installed to replace the cabling affected by the new building works.

Provision will be made for the Telstra lead-in copper and fibre optic cable to each building. These will comprise underground conduits, which will be sized to accommodate both copper and optic cabling.

The main distribution frame will be located within the Upper Basement Carpark Level of each building. The frame will have provisions to connect to the Telstra cabling, as well as that of a second carrier.

Sewer

Correspondence from Sydney Water (refer to **Appendix M**) indicates that the existing 150mm and 300mm sewer to main are required to be updated to 225mm and 375mm respectively.

Natural Gas

A letter has been received from Jemena Gas Networks (refer to **Appendix O**) indicating that the Natural Gas is available adjacent to the site, and could be extended to supply any proposed development at the site.

Hydraulic Services

A number of WSUD principles have been adopted (refer to Integrated Water Management Plan prepared by AECOM at **Appendix P**) including:

- rainwater harvesting for non-potable reuse including toilet flushing, clothes washing and irrigation;
- harvested rainwater will be treated via a gross pollutant trap to remove suspended solids prior to discharge into the rainwater tank; and
- water efficient fixtures and fittings including 4 WELS star rating dual flush toilets, 4 WELS star taps and 3 WELS star shower heads will be used to reduce water demand.

The proposed WSUD principles will reduce potable water consumption, stormwater runoff and the associated environmental impacts of stormwater runoff. The proposed gross pollutant trap will also improve the quality of rainwater discharge from the site.

Mechanical Services

A Mechanical Design Principles Statements have been prepared by Schelmerdines (refer to **Appendix Q**). The mechanical services will be designed to comply with the following relevant codes and standards:

- Australian Standards AS 1668.1:1998, AS1668.2:1991 and AS3666.1;
- Building Code of Australia, Parts E2.2, NSW F4.5(b) and Section J Clause J3.5, Part J5 and NSW Clause J8.2;
- BASIX; and
- Greenstar.

3.11 Project Staging

Referring to the Staging Plan at **Appendix A**, the Concept Plan will be developed in two stages, as described below.

Stage 1

Stage 1 comprises:

- demolition of all existing site structures;
- construction of basement car parking;
- construction of Buildings H, W, C and Y; and
- landscaping and public domain works around Buildings H, W, C and Y.

Stage 2

Stage 2 comprises:

- construction of Buildings M, D and L; and
- completion of landscaping and public domain works.

All utilities will be connected in accordance with the relevant service provider's requirements, subject to extension / augmentation. Specific load requirements for Stage 1 are outlined in Section 4.5.

It is noted that information supplied with the Preliminary Environmental Assessment Report (PEAR) indicated that Stage 1 would include part of the overall basement parking for the site. This EAR includes the full basement structure as discussed at Section 3.8.3. It is requested that the Stage 2 basement areas be accessible during construction of Stage 2 for storage of construction vehicles and the like. No residential parking will be permitted.

3.12 Developer Contributions

Contributions, commensurate with each stage, will be payable prior to the issue of a Construction Certificate for that stage in accordance with the City of Ryde Section 94 Development Contributions Plan 2007.

The proponent offers the provision of a significant public benefit in the form of a Type 3 (Council standard) road on the north-eastern site boundary as proposed under Council's DCP. A half road construction is proposed on the north-western boundary, which represents a less hazardous design solution than that proposed under Council's DCP as detailed in the Transport and Accessibility Assessment at Section 6.9. The amended road solution has been discussed with Council Officers. The provision of these roads contributes to the fine grained permeable road network envisaged by Council's DCP.

The proponent offers to dedicate these roads to Council in the event that the Concept Plan as proposed is approved. It is noted that the provision of such roads results in wider access benefits to the Macquarie Park Corridor, with the apportionment of costs solely borne by Stamford.

It is noted that consultation undertaken with Council by Hill PDA as part of the Social Impact Assessment process indicates that open space, community meeting rooms and public access to them, are an identified need in the Corridor. Council Officers have indicated that public access to the proposed areas of communal open space is desirable. Whilst the site's open space and meeting room is not specifically identified in the works schedules in Council's Section 94 Plan, Stamford seek to negotiate an appropriate Section 94 offset for the provision of these material public benefits on the site. Resolution of any offset arrangement would occur prior to determination of the Stage 1 Project Application.

4.0 Stage 1 Project Application

4.1 Introduction

This Section of the report provides a detailed description of the proposed development that comprises the Stage 1 Project Application. These works are the first stage of development and will include Buildings H, W, C and Y (see **Figure 23**). Architectural drawings for the proposed development are included at **Appendix A**. In total the first stage of development will accommodate 310 residential units as detailed in **Table 4** and **5** below.

Table 4 – Numerical overview

Building	Maximum Height	Dwellings	Parking (spaces)	GFA (m2)
H	RL99.55	54		5,187
W	RL132.85	128		12,223
C	RL 110.45	84		7,876
Y	RL 100.20	45		4,238
Total		**310**	**332**	**29,524**

Table 5 – Dwelling Mix

Apartment Type	Number of Dwellings
1 bedroom apartments	161 (52%)
2 bedroom apartments	119 (38%)
3 bedroom apartments	30 (10%)
Total	**310**

4.2 Demolition / Site Preparation Works

All demolition and site preparation works, including the demolition of all existing structures and the removal of 168 trees, will be carried out as part of Stage 1. Stage 1 also comprises the construction of the basement in order to minimise disruption to residents during the second stage of construction. Whilst the car park will be constructed as part of Stage 1, only the 332 car parking spaces proposed as part of the Stage 1 development will be made available until the completion of Stage 2. The Stage 2 site will be fenced off to prevent unauthorised access, and to ensure that the amenity of residents is maintained.

4.3 Access and Parking

The road network, including the Type 3 roads, will be constructed as part of the Stage 1 Project Application. The proposed road network provides entry to the site via a single access point on Herring Road, in the eastern corner of the site. This entry will provide access to the internal road network and the basement car park (which will be accessed from various points within the site).

As outlined in Section 3.8.1, half of the road on the site's north-western boundary will also be constructed, and is proposed to be dedicated to Council prior to the occupation of the final building in Stage 1. The road will provide one-way access, until the second half of the road is constructed (and opened for public use) when the adjoining site to the north-west is developed.

A total of 790 parking spaces are proposed as part of the Concept Plan, comprising both basement and on-street parking. 332 of these spaces will be made available as part of the Stage 1 Project Application. As detailed in Section 6.9, the proposed parking rates are lower than Council's DCP requirements.

4.4 Landscaping and Public Domain

Stage 1 Landscape Plans have been prepared by Oculus and are included at **Appendix K**. The key features of the Stage 1 landscape design include a series of outdoor spaces known as 'the Garden of Earthly Delights', 'the Pool Garden' and the 'Terraced Entry Garden'. The main elements of these areas include:

- a continual garden along the site's north-eastern boundary;
- a swimming pool;
- mass plantings;
- a planted terrace;
- a raised turf mound;
- a timber canopy shade structure;
- raised timber decking;
- feature tree planting; and
- various ground surface treatments including gravel, stone paving, stepping stones and banded concrete pavement.

4.5 Services and Infrastructure

The following services and infrastructure will be implemented as part of the Stage 1 Project Application:

- two 1,000kVA kiosk type substations associated with the W and C Buildings;
- an easement to facilitate stormwater connection to Council's stormwater system;
- extension of new 150mm water main on Herring Road; and
- replacement and upgrade of existing 150mm and 300mm sewer main to 225mm and 375mm respectively.

4.6 Colours and Materials

The proposal will be constructed using a range of quality materials and finishes in order to create an attractive, modern development. The chosen colours and materials will also help the development sit more comfortably within its context, through the use of colours that draw from the colours of the bush and eucalyptus trees, and a variety of materials and textures to breakdown the mass of the buildings. A schedule of finishes has been prepared by AJ+C and is provided in the architectural plans at **Appendix A**. Proposed materials include:

- face brick;
- frames sheet cladding;
- metallic cladding panels; and
- painted cement render.

4.7 Water Cycle Management

An Integrated Water Management Plan has been prepared by AECOM (**Appendix P**) to address the features that will be adopted on the site to reduce water useage. A number of WSUD principles have been adopted including:

- rainwater harvesting for non-potable reuse including toilet flushing, clothes washing and irrigation;
- harvested rainwater will be treated via a gross pollutant trap to remove suspended solids prior to discharge into the rainwater tank; and
- water efficient fixtures and fittings including 4 WELS star rating dual flush toilets, 4 WELS star taps and 3 WELS star shower heads will be used to reduce water demand.

The proposed WSUD principles will reduce potable water consumption, stormwater runoff and the associated environmental impacts of stormwater runoff. The proposed gross pollutant trap will also improve the quality of rainwater discharge from the site.

5.0 Director General's Environmental Assessment Requirements

On 25 November 2010, in accordance with Section 75F of the EP&A Act, the Director-General of the Department of Planning issued the requirements for the preparation of an Environmental Assessment to accompany a Concept Plan for the project. A copy of the DGRs is included in **Appendix C**.

Table 6 provides a summary of the individual matters listed in the DGRs and identifies where each of these requirements has been addressed in this report and the accompanying technical studies.

Table 6 – Director-General's Environmental Assessment Requirements

Requirements	Location in Report	
General Requirements		
Executive Summary	Page i	
Statement of Validity	Page ii	
Quantity Surveyor's Certificate	Appendix B	
Site Analysis	Section 2.0	
Description of the Proposed Development	Section 3.0 and 4.0	
An Assessment of the Key Issues	Section 6.0	
Draft Statement of Commitments	Section 7.0	
Conclusion and Justification	Section 8.0	
Key Issues (Concept Plan)	**Report**	**Technical Study**
Relevant EPIs, Policies and Guidelines		
Planning provisions of the following EPIs, Policies and Guidelines applying to the site, including those relating to permissibility, are to be addressed: ▪ Objects of the *NSW Environmental Planning and Assessment Act 1979*; ▪ NSW State Plan; ▪ Sydney Metropolitan Strategy; ▪ Draft Inner North Sub-regional Strategy; ▪ Metropolitan Transport Plan 2010; ▪ NSW Planning Guidelines for Walking and Cycling; ▪ Healthy Urban Development Checklist 2010 (NSW Health); ▪ Ryde LEP 2010, Draft Ryde LEP 2010 (Amendment 1: Macquarie Park Corridor), Ryde DCP and other relevant Development Control Plans; ▪ SEPP (Building Sustainability Index: BASIX) 2004; ▪ SEPP 55 – Remediation of Land; ▪ SEPP 65 – Design Quality of Residential Flat Development and the Residential Flat Design Code (RFDC); ▪ SEPP (Infrastructure) 2007; and ▪ Nature and extent of any non-compliance with relevant environmental planning instruments, plans and guidelines and justification of any non-compliance.	Section 6.1 to Section 6.7	

Built Form and Urban Design		
▪ The EA shall address the height, bulk and scale of the proposed development within context, including detailed envelope studies, referencing current and Draft Ryde planning controls and the Macquarie University Concept Plan.	Section 6.8	**Appendix J**
▪ The EA shall provide a comparative height study of the proposal against existing and approved developments surrounding the subject site, a visual and view analysis to and from the site from key vantage points, and options for siting and orientation of building envelopes, massing and articulation.	Section 6.8 and Section 6.10	**Appendix J** and **Appendix V**
▪ The EA shall provide a summary of proposed public benefits.	Section 3.9.1	**Appendix G**
Public Domain		
▪ The EA must explain the type, function and landscape character of the various private, communal and public areas on site. Pedestrian circulation and linkages should be demonstrated in schematic form.	Section 3.9 and Section 4.4	**Appendix J** and **Appendix K**
▪ The EA is to demonstrate how the design of the proposed structures and the treatment of public domain and open spaces will: - Maximise safety and security within the site and the public domain - Maximise surveillance and activity within the site and the public domain - Comply with Crime Prevention Through Environmental Design (CPTED) principles - Ensure access for people with disabilities	Section 6.11	
▪ Minimise potential for vehicle and pedestrian conflicts	Section 6.11	**Appendix J** and **Appendix K**
Land Use		
▪ The EA shall address the relevant regional and local strategies in relation to the desired future mix of landuses, and shall specifically address the predominance of residential uses proposed within the context of a Mixed Uses zone and an 'employment corridor', address the loss of conference facilities from Macquarie Park and clarify the 'potential' child care centre.	Section 3.7 and Section 6.17	
Transport & Accessibility Impacts		
▪ The EA shall address the following matters: - Provide a Transport and Accessibility Impact Study prepared in accordance with the RTA's Guide to Traffic Generating Developments and having reference to relevant State planning documents and consider the *Macquarie Park 2007 Base Paramics Model,* where relevant - Any impacts on the planned future street network set out in the Ryde DCP 2010, including consideration of alternatives - Detail pedestrian access routes to local services, shops and public transport infrastructure - Any impacts on the existing road network including an estimate of all trips generated by the development and modelling of impacts on nearby major intersections as set out in Recommendation 4 in the response provided by the RTA dated 1 October 2010 - A specific address of Recommendation 2 in the response provided by RTA dated 1 October 2010 in relation to increased setbacks to Epping Road in order to accommodate planned future road upgrades, and provide evidence of consultation with the RTA on this matter	Section 6.9	**Appendix U**

- Provide an assessment of the implications of the proposed development for non-car travel modes including increased demand on rail and bus services and infrastructure, with reference to State Plan targets and local controls including the *Ryde Bicycle Strategy and Master Plan 2007* - The EA must demonstrate the provision of sufficient on-site car parking having regard to Council and RTA guidelines and include details of compliance with relevant Australian Standards - Provision for a location-specific sustainable travel plan for the overall development, including consideration of a car-share scheme - Address the accessibility and traffic / transport principles detailed in the current and draft planning controls.		
Environmental and Residential Amenity		
▪ The EA must address solar access, visual and acoustic privacy, and view impacts and demonstrate that the Concept Plan can achieve a high level of environmental and residential amenity; and ▪ The EA must demonstrate how the Concept Plan addresses the requirements of SEPP 65 and the associated Residential Flat Design Code (RFDC).	Section 6.10 and Section 6.11	**Appendix J**
Ecologically Sustainable Development (ESD)		
▪ The EA shall detail how the development will incorporate ESD principles in the design, construction and ongoing operation phases, and demonstrate that the development has been assessed against a suitably accredited rating scheme to meet industry best practice and relevant Council controls.	Section 6.18	**Appendix Y**
Contributions		
▪ The EA shall address the provision of public benefit, services and infrastructure having regard to Council's Section 94 Plan, including any Planning Agreement.	Section 3.12	
Consultation		
▪ Undertake an appropriate and justified level of consultation in accordance with the Department's *Major Project Community Consultation Guidelines October 2007.*	Section 6.27	
Drainage and Stormwater Management		
▪ The EA shall address drainage/groundwater/flooding issues associated with the development and incorporate Water Sensitive Urban Design (WSUD) measures, including a MUSIC model, with reference to the WSUD and Catchment Plans being prepared by Macquarie University and Council's requirements.	Section 6.25	**Appendix L**
Groundwater Management		
▪ The EA is to identify groundwater issues and address any impacts upon groundwater resources and, when impacts are identified, provide contingency measures to remediate, reduce or manage potential impacts. ▪ The EA shall specifically address the groundwater considerations listed in Attachment A to the response provided by the NSW Office of Water dated 7 October 2010.	Section 6.25	**Appendix JJ**
Utilities		
▪ In consultation with relevant agencies, address any impacts upon groundwater resources and, when impacts are identified, provide contingency measures to remediate, reduce or manage potential impacts. ▪ Specifically address Recommendations 1 and 2 of the response from Sydney Water dated 23 September 2010	Section 3.10 Section 4.7	**Appendix M** and **Appendix O** **Appendix P**

Noise Assessment		
▪ The EA should address noise impacts and detail how these will be managed and ameliorated with reference to Australian Standards and the Department's *Interim Guidelines for Development near Rail Corridors and Busy Roads.*	Section 6.15	**Appendix S**
Staging		
▪ The EA must include staging details for the proposal including the provision and timing of all required infrastructure works.	Section 3.11	**Appendix A**
Statement of Commitments		
▪ The EA must include a draft Statement of Commitments detailing measures for environmental management, impact mitigation and ongoing monitoring.	Section 7.0	
Key Issues (Project Application)	**Report**	**Technical Study**
Urban Form and Design		
▪ The EA shall address all relevant requirements of SEPP 65 and the associated Residential Flat Design Code (RFDC)	Section 6.11	**Appendix J**
▪ The Project Application EA shall include with specific consideration of the facade, massing, setbacks, building articulation, appropriate colours, materials, finishes, landscaping, safety by design and public domain, including an assessment against the CPTED Principles	Section 4.4, Section 6.10 and Section 6.11	**Appendix J** and **Appendix K**
▪ The provision of appropriate private and public open space for Stage 1	Section 4.4 and Section 6.11	**Appendix J** and **Appendix K**
Staging and Infrastructure		
▪ The EA shall address how the Stage 1 Project Application development will integrate with the overall Concept Plan proposal, including details of infrastructure work required to ensure that the Stage 1 Project Application development is fully services and how the infrastructure works serving the Stage 1 Project Application will be integrated with those for remaining stages.	Section 3.10 and Section 4.5	
Construction Impacts		
▪ The EA shall address noise and other impacts during the construction phase of the development and address how these will be managed and mitigated in accordance with the *"Interim Construction Noise Guideline" (DECCW, 2009)*	Section 6.15	**Appendix GG**
▪ The EA shall include a Construction Traffic Management Plan.	Section 6.26	**Appendix HH**
Other Deliverables		
In addition to the above requirements, the EA must be accompanied by:		
▪ An Existing Site Survey;		**Appendix D**
▪ A Site Analysis Plan;	Section 2	**Appendix J**
▪ A Location / Context Plan;	Section 2	
▪ Architectural Drawings;		**Appendix A**
▪ Shadow Diagrams;		**Appendix A** and **Appendix J**
▪ Visual and View Analysis;		**Appendix V**
▪ Landscape Plan;		**Appendix J** and **Appendix K**

Other Deliverables		
▪ A Massing Model;		**Appendix J** Physical model to be provided under separate cover
▪ Stormwater Concept Plan;		**Appendix L**
▪ Geotechnical Report;		**Appendix Z**
▪ A Groundwater Assessment;	Section 6.19	**Appendix JJ**
▪ A Schedule of Materials and Finishes;		**Appendix A**
▪ Access Report;		**Appendix BB**
▪ Erosion and Sediment Control Plan; and	Section 6.25	**Appendix L** and Statement of Commitments
▪ Construction Management Plan.		**Appendix FF**

6.0 Environmental Assessment

This section of the report assesses and responds to the environmental impacts of the Concept Plan proposal. It addresses the matters for consideration set out in the Director-General's Environmental Assessment Requirements (DGRs) (see Section 5.0).

The draft Statement of Commitments complements the findings of this section.

6.1 Relevant Strategic and Statutory Plans and Policies

The DGRs require the following legislation, strategies and planning instruments, which are relevant to the proposed development to be addressed:

- Objects of the NSW EP&A Act 1979;
- NSW State Plan;
- Sydney Metropolitan Strategy;
- Draft Inner North Sub-regional Strategy;
- Metropolitan Transport Plan 2010;
- NSW Planning Guidelines for Walking and Cycling;
- Healthy Urban Development Checklist 2010 (NSW Health);
- Ryde LEP 2010, Draft Ryde LEP 2010 (Amendment 1: Macquarie Park Corridor);
- Ryde DCP 2010, and other relevant Development Control Plans;
- SEPP (Building Sustainability Index: BASIX) 2004;
- SEPP 55 – Remediation of Land;
- SEPP 65 – Design Quality of Residential Flat Development and the Residential Flat Design Code (RFDC); and
- SEPP (Infrastructure) 2007.

6.2 Commonwealth Legislation

6.2.1 Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

The *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places, that are defined in the Act as matters of national environmental significance. The Act requires approval from the federal Minister for Environment for actions that may have national environmental significance.

Matters of national environmental significant identified in the EPBC Act are:

- world heritage properties;
- national heritage properties;
- Ramsar wetlands;
- nationally threatened species and communities;
- migratory species protected under international agreements;

- the Commonwealth marine environment; and
- nuclear actions.

As detailed in the Flora and Fauna Assessment at **Appendix F**, there will be no impact on any EPBC listed flora, fauna or ecological communities as a result of the proposal, and therefore is not a 'controlled action' under the EPBC Act.

6.3 State Legislation

6.3.1 Threatened Species Conservation Act 1995

The *Threatened Species Conservation Act 1995* (TSC Act) lists endangered species, populations and ecological communities and provides for their protection. It also provides for the protection of the critical habitat of threatened species, populations and ecological communities that are endangered. For the reasons cited in Section 6.2.1 above, it is considered unlikely that the proposal will have any effect on threatened species, populations or ecological communities or their habitats within the locality.

Refer to the Flora and Fauna Assessment at **Appendix F**, and Section 6.14 for a full assessment.

6.3.2 Environmental Planning and Assessment Act 1979

Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) outlines the process for considering applications under the Major Development SEPP. In particular it outlines:

- what development constitutes a Major Development;
- the matters which the Minister must take into account when assessing a major application;
- information which must be submitted with an major Project Application;
- the environmental assessment requirements for approval;
- public exhibition of Major Project Applications;
- assessment report procedures; and
- appeals under Part 3A.

This report responds to these requirements.

Consideration has also been given to the Objects of the EP&A Act. The proposed Concept Plan and Project Application are consistent with the objects of the EP&A Act in that it:

- romotes infill residential development in close proximity to community services, facilities and public transport;
- provides new housing stock designed in an ecologically sustainable manner;
- provides land for public purposes including recreation; and
- provides a range of dwelling types and sizes, contributing to an increase in the diversity of local housing stock and improving affordability.

6.3.3 Heritage Act 1977

Pursuant to the *Heritage Act 1977* (Heritage Act), a permit from the NSW Heritage Council is required if archaeological relics are to be exposed, moved, damaged or destroyed and a permit is required for matters affecting items listed on the State Heritage Register. The requirement for these permits does not apply to Major Projects under Section 75U of the EP&A Act.

No local or State heritage items have been identified on, or in the vicinity of the site. In relation to Indigenous archaeology, an Aboriginal Heritage Information Management System (AHIMS) search was conducted for the site, covering a radius of 200m. The search indicated that there are no records within a 200m radius of the site. Therefore, no further action is required in relation to Aboriginal heritage.

6.3.4 National Parks and Wildlife Act 1974

Sections 84 and 90 of the *National Parks and Wildlife Act 1974* (NPW Act) provide the primary statutory means for the protection and management of Aboriginal sites and relics within NSW. The Act requires, amongst other things:

- consultation with the Department of Environment, Climate Change and Water (DECCW) prior to development to determine the presence of items of Aboriginal heritage;
- consultation with local Aboriginal groups; and
- consent to disturb or destroy Aboriginal heritage sites / items.

Pursuant to the NPW Act, a permit is required for the removal, damage or destruction of an Aboriginal object or place.

An Aboriginal Heritage Information Management System (AHIMS) search was conducted for the site, covering a radius of 200m. The search indicated that there are no records within a 200m radius of the site. Therefore, no further action is required in relation to Aboriginal heritage.

6.3.5 Water Management Act 2000

The *Water Management Act 2000* (WM Act) provides for the sustainable and integrated management of the water resources of the State. Approval is required under section 90 (water management works) for stormwater and flood management works for the site. Similarly an activity approval under section 91 of the WM Act approval is required to carry out a controlled activity in, on or under waterfront land. Waterfront land is taken to mean the bed of a river, lake or estuary and includes land 40m from the highest bank of a river, the shore of a lake or high water mark of an estuary. The nearest waterway to the site is University Creek, however the site is located well away from it. Therefore, the provisions of the WM Act do not apply to the proposal.

6.3.6 Roads Act 1993

The *Roads Act 1993* (Roads Act) provides for public access to roads and access to roads from private land. It also establishes procedures for opening and closing public roads and regulates various activities on public roads. Section 138 of the Roads Act requires consent to be issued for work on or that affects a public road, or to connect to a public road. Such consent cannot be refused for a Part 3A project if the consent is necessary for carrying out the project and if it is consistent with an approval granted under Part 3A. Connection of internal roads associated with the Concept Plan into Council's external road network, is a relevant matter for consideration and is addressed at Section 3.8 and Section 6.9.

6.4 Strategic Implications

State Plan

The New South Wales State Plan was released in March 2010. The plan sets a strategic direction and goals for the NSW Government across a broad range of services and infrastructure. The plan nominates one of the key challenges for the state as being the planning challenges that arise from continuing population growth. In addition to this, the plan nominates environmental challenges from climate change and drought.

The proposed development will assist in implementing solutions to these challenges. The Concept Plan will provide a substantial amount of housing in an area which is highly accessible to public transport infrastructure and social services, taking pressure of established residential areas to provide infill residential development. It will also demonstrate a high level of sustainability with the provision of those measures indicated within the ESD Assessment at Section 6.18.

The Part 3A Concept Plan and First Stage Project Application satisfy key priorities of the State Plan, namely:

- *Increase the number of jobs closer to home*– the Concept Plan will increase opportunities for people to live within 30 minutes of the City or major centres (Macquarie Park, Chatswood, St Leonards and Hornsby) and within close proximity to public transport at Macquarie University Station;
- *Improve housing affordability*– the dwelling yield proposed within the Concept Plan will increase housing supply within Macquarie Park and the City of Ryde LGA and will continue to provide a diversity in housing mix and sizes to meet the demand for housing in this locality and provide a variety of housing options; and
- *Grow cities and centres as functional and attractive places to live, work and visit*– the Concept Plan will provide quality housing in an attractive setting within a recognised specialist centre. This close proximity of the Stamford site to Macquarie University Station promotes the integration of transport and urban development and has the potential to enhance the quality of life of residents by making it easier to travel from home to work, and to access the services they need.

Metropolitan Plan for Sydney 2036

"City of Cities: A Plan for Sydney's Future" (the Metropolitan Strategy for Sydney) was initially launched by the NSW Government in December 2005. It provides commentary and direction for a 25-30 year period at a regional level on issues such as land use, economic development, jobs, transport, innovation, centres and corridors, and residential areas within Sydney. The 2005 Strategy aimed to accommodate 1.1 million additional residents and 550,000 new jobs over the period to 2031.

In March 2010, the Department of Planning announced the first five year review of the Metropolitan Strategy. The resulting Metropolitan Plan for Sydney 2036 seeks to respond to recent challenges facing growth in Sydney including the global financial crisis, housing affordability and climate change.

The review integrates the Metropolitan Strategy with the Metropolitan Transport Plan, while accommodating increased population projections across Sydney, such as:

- a population forecast to reach nearly 6 million by 2036 (an increase of 1.7 million from the 2006 projections);
- a need for 770,000 additional homes by 2036; and
- a need to provide 760,000 more jobs by 2036.

The Concept Plan will capitalise on the site's accessible location to public transport, retail facilities and employment opportunities, to ensure the proposal supports key actions within the Metropolitan Plan for Sydney 2036, namely:

- A3 contain Sydney's urban footprint;
- B1.3 locate new housing within the walking catchments of centres of all sizes with good public transport;
- D1.1 locate at least 70% of new housing within existing urban areas; and
- H1.2 prepare criteria to identify major developments that require formal social impact assessment

Draft Inner North Sub-regional Strategy

The Draft Inner North Subregional Strategy was exhibited in July 2007. It is a key part of the implementation of the Metropolitan Strategy and when adopted, is intended to guide land use planning in the City of Ryde LGA to 2031.

This Strategy identifies the following targets for the City of Ryde LGA:

- 12,000 additional dwellings by 2031; and
- an employment capacity of 21,000 jobs by 2031.

As a result of the increased population forecast for Sydney to 2036, it is expected the targets for each sub region will be amended or redistributed to some extent. An analysis of the Concept Plan's contribution to the aims of the Sub-regional Strategy is provided below.

Housing

- The Draft Inner North Subregional Strategy sets a dwelling target of 12,000 additional dwellings for the City of Ryde LGA by 2031. The location of Macquarie University Railway Station close to the site makes 110 – 114 Herring Road ideal for high density residential and mixed use development. Approximately 600 residential apartments are envisaged for the site under the proposed Concept Plan. The proposed development will therefore make an important contribution to future housing growth in the Ryde LGA.
- The proposal is consistent with the aim of the Metropolitan Strategy to focus residential development in areas with good access to public transport and local services.

Transport

- The site is highly accessible by public transport. Macquarie University Railway Station is located 650m to the north-east of the site, providing direct access to Hornsby, Epping, Chatswood, North Sydney and the CBD. In addition, Sydney Buses have many routes which travel directly past the site, providing services to Epping (288 and 290) and the Sydney CBD (288,290, 293, 507 and 518). Other routes are accessible within 650m walk, which provide access to Chatswood (545 and 550), Parramatta (545 and 550), North Epping (295), Epping (294), Strathfield (459) and the Sydney CBD (292,294 and 506).
- The Concept Plan proposes well connected pedestrian and cycling facilities, linking the proposed buildings to the railway station, public open space and existing pedestrian connections immediately adjacent to the site.

Centres and Corridors

- The site is located within Macquarie Park which is identified as a "specialised centre" in the Sydney Metropolitan Strategy. The draft Strategy classifies a specialised centre as *"areas containing major airports, ports, hospitals, universities, research and business activities".* The strategy identifies that there may be a requirement for some increased residential development in specialised centres, such as housing for students or staff near universities and hospitals.
- The proposed development is situated on land zoned B4 (Mixed Use). The importance of accommodating residential growth in established areas is highlighted in the Metropolitan Strategy where a target of 60-70% of new growth is required in established areas, compared to 30-40% in new release areas. As such, the proposed development presents an opportunity to increase the housing density in one of the few areas within Macquarie Park, in proximity to the station, where this type of development is permissible. It is envisaged that the proximity of the site to Macquarie University Station, Macquarie University and employment opportunities within Macquarie Park will appeal to students, university staff, and employees working in the area.

Environment, Heritage and Resources

- The proposed dwelling yield on the site increases housing opportunities within Sydney's existing urban footprint and will contribute to a reduction in the demand for additional land to be used for urban purposes on the urban fringe. The Concept Plan will balance the demand for land uses within this locality by increasing residential development to a level commensurate with the increasing number of jobs provided in the area.
- Due to the proximity of the site to the Macquarie Shopping Centre and the close proximity of the development to major employment opportunities within the Business Park, the Concept Plan provides a small amount of retail and commercial uses that will best serve the needs of local residents and do not compete with the Macquarie Centre. Open spaces and recreational facilities are also to be provided in order to support a sustainable land use mix on the site.
- A search through the Aboriginal Heritage Information Management System has revealed that there are no Aboriginal objects that have been reported to the Director General of the Department of Environment, Climate Change and Water within 200m of the subject site.

Parks, Public Places and Culture

- The Concept Plan will provide areas of open space to encourage increased usage of parks and recreational facilities by future residents.
- The proposal incorporates public art, with a commitment to prepare a Public Art Strategy prior to the issue of an Occupation Certificate for Stage 1.
- A range of recreational facilities will be provided for use by residents of the site, as well as the general community, including publicly accessible communal open spaces, a resident's swimming pool, a resident's gym and a publicly available communal meeting room.

6.5 Relevant State Environmental Planning Policies

The following State Environmental Planning Policies are relevant to the proposal and are discussed further below:

- SEPP (Major Development) 2005;
- SEPP (Infrastructure) 2007;
- SEPP 55 – Remediation of Land;
- SEPP 65 – Design Quality of Residential Flat Development and the accompanying Residential Flat Design Code (RFDC);
- SEPP Building Sustainability Index 2004;
- SEPP 44 – Koala Habitat Protection; and
- SEPP 19 – Bushland in Urban Areas.

6.5.1 State Environmental Planning Policy (Major Development) 2005

On 13 May 2011 the NSW Government announced transitional provisions relating to the repeal of Part 3A of the *Environmental Planning and assessment Act* 1979. Under these transitional provisions which were effected through *State Environmental Planning Policy (Major Development) Amendment 2011*, *State Environmental Planning Policy (Major Development) 2005* continues to apply to residential, commercial or retail projects for which environmental assessment requirements were notified to the proponent on or before 8 April 2011, as if Group 5 of Schedule 1 and clause 1 of Schedule 2 had not been repealed by *State Environmental Planning Policy (Major Development) Amendment 2011*. As

Group 5 of Clause 13 of Schedule 1 of the State Environmental Planning Policy (Major Development) 2005 (Major Development SEPP) provides for development with a Capital Investment Value (CIV) greater than $100 million to be considered as a Major Project under Part 3A of the Act. The proposed Concept Plan has an estimated CIV of over $176 million.

A copy of the quantity surveyors calculation summary is provided at **Appendix B.**

6.5.2 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP) came into force in December 2007 and repealed State Environmental Planning Policy No. 63 – Major Transport Projects. The Infrastructure SEPP aims to facilitate the effective delivery of infrastructure across the state and identifies matters to be considered in the assessment of development adjacent to particular types of infrastructure development.

Division Subdivision 2 requires certain matters to be considered for developments in or adjacent to road corridors and road reservations. Clause 101 requires consideration of developments with a frontage to a classified road. The safety and efficiency of the development with respect to Epping Road is addressed in the Traffic and Accessibility Impact Study at Section 6.9.

Clause 102 specifies noise and vibration standards for residential development adjacent to a road with an annual average daily traffic volume of more than 40,000 vehicles (i.e. Epping Road). This issue is addressed in the Noise Assessment at Section 6.15.

The proposal is classified as a traffic generating development on the basis that the development contains more than 300 dwellings. As such the Concept Plan will be required to be referred to the Roads and Traffic Authority (RTA).

6.5.3 State Environmental Planning Policy No 55 – Remediation of Land

State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55) aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment. The DGRs require the EAR to consider whether the land is contaminated, and that if the land is contaminated whether or not the land can be made suitable for the proposed use.

The Preliminary Contamination Assessment prepared by Douglas Partners Pty Ltd (refer to **Appendix R**) identifies the site as suitable for high density residential. Refer to Section 6.19 for further assessment of contamination.

6.5.4 State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development

State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development (SEPP 65) aims to improve the design quality of residential flat development in New South Wales. It sets out 10 design quality principles relating to built form and amenity.

As the Concept Plan identifies building envelopes and floor space areas for residential flat development, the SEPP's design principles of context, scale, built form and density apply.

The 10 design quality principles are addressed in detail within the Concept Plan Design Report prepared by AJ+C (provided at **Appendix J**). An assessment of the Concept Plan's consistency with the design quality principles of SEPP 65 demonstrates that the design quality of the proposal is consistent with the principles of the SEPP (refer to **Appendix J** and Section 6.11). A design verification statement is included with a SEPP 65 Architectural Statement prepared by AJ+C, provided under separate cover.

6.5.5 State Environmental Planning Policy (Building Sustainability Index) 2004

BASIX, the Building Sustainability Index, was introduced by the NSW Government, to ensure homes and apartments are designed to use less potable water and emit fewer greenhouse gas emissions. BASIX sets minimum energy and water reduction targets for houses and apartments to achieve this goal.

Each stage will comply with BASIX categories of thermal comfort, energy and water.

6.5.6 State Environmental Planning Policy No. 44 – Koala Habitat Protection

State Environmental Planning Policy No. 44 – Koala Habitat Protection (SEPP 44) aims to protect the Koala and its habitat by incorporating prescriptions for consent authorities to consider during the assessment of development applications. SEPP 44 contains prescriptions for the consideration of potential koala habitat and core koala habitat for developments within LGAs listed on Schedule 1 of the Policy.

As outlined in the Flora and Fauna Assessment at **Appendix F**, Ryde LGA is listed in Schedule 1 as an area to which SEPP 44 applies. Potential koala habitat is defined by SEPP 44 as areas of native vegetation where trees of types listed in Schedule 2 constitute at least 15% of the total number of trees in the upper or lower strata of the tree component.

No tree species were recorded within the study area as koala feed tree species listed under Schedule 2 of the SEPP. As such, the site does not support potential koala habitat, as defined under SEPP 44. Similarly, no evidence of a resident koala population was recorded, and so the site does not comprise core koala habitat.

6.5.7 State Environmental Planning Policy No. 19 – Bushland in Urban Areas

State Environmental Planning Policy No. 19 – Bushland in Urban Areas (SEPP 19) aims to protect and preserve bushland within the urban areas of Sydney. Ryde is listed under SEPP 19 as a Council area to which SEPP 19 applies. Clauses 6, 7 and 8 of the SEPP outline requirements for development consent to be considered by a consent authority, when assessing development applications that involve disturbance to bushland zoned for reserve of public open space.

As outlined in the Flora and Fauna Assessment (refer to **Appendix F**) the subject site is not zoned for public open space and so SEPP 19 does not apply to the proposed development.

6.6 Relevant Guidelines

Residential Flat Design Code (RFDC)

In addition to the provisions of SEPP 65 discussed in Section 6.5.4 above, the Concept Plan also generally complies with the design quality objectives and design principles of the Residential Flat Design Code (RFDC). Proposed floor plans for Stage 1 and indicative floor plans for Stage 2, demonstrate that whilst the proposal is generally able to comply with respect to daylight access and natural ventilation, some individual buildings are unlikely to fully achieve some of the "Rules of Thumb" set out in the Code. Given this, it is proposed to demonstrate that Stage 1 and Stage 2 of the development can rely on better design practice to ensure that the amenity of the proposed development is not compromised in any way, and that an inability to achieve some of the rules of thumb is generally related to the context of the site and that the objectives of the "Rules of Thumb" are still met.

The variations to these rules of thumb and a description of the measures proposed to ensure that a high standard of amenity is achieved are described in the Environmental Assessment Section 6.11 below. We note that the peer review by eminent architect Ken Woolley acknowledges the practical difficulties of achieving full compliance with the RFDC "Rules of Thumb".

Development near Rail Corridors and Busy Roads – Interim Guideline

The Department's Interim Guidelines on Development near Rail Corridors and Busy Roads makes recommendations for the assessment of noise impacts to developments from rail and road corridors and for mitigating such impacts. Pursuant to *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP), a consent authority must take the guidelines into consideration before determining an application for a residential building adjacent to a road with an Annual Average Daily Traffic volume (AADT) of over 40,000 vehicles. The Interim Guidelines are to be referred to as best practice for developments adjacent to roads with an AADT of 20,000 to 40,000 vehicles.

The guidelines only require the impact of railway noise to be considered if the site is within 60m of a railway line. The site is outside of this distance, and so no further consideration is required.

It is noted that Epping Road has an AADT of over 40,000 vehicles (according to the Traffic Volume Map produced by the Roads and Traffic Authority (RTA).

In accordance with the Guidelines, the following measures have been incorporated into the Concept Plan to reduce the impact of Epping Roads on the proposed development:

- upgraded glazing will be provided in accordance with the recommendations of the Noise Impact Assessment prepared by Acoustic Logic (refer to **Appendix S**);
- living spaces have been orientated away from the road frontages where possible;
- landscaping on Epping Road will be maintained to provide a buffer against traffic noise;
- generally, the glazing on balconies to Epping Road has been upgraded to higher performance standards; and
- optimising level changes in the design across the site, with the site falling away from Epping and Herring Roads, ensures that internal public and private outdoor spaces are protected from noise.

Planning Guidelines for Walking and Cycling

The Department of Planning's "Planning Guidelines for Walking and Cycling" aim to improve the consideration of walking and cycling in urban environments, and provides a walking and cycling focus to the Integrated Land Use and Transport Policy.

The Concept Plan is consistent with the Planning Guidelines for Walking and Cycling as it includes increased densities within a site highly accessible to public transport at Macquarie University Railway Station. The site is also in close proximity to other services and amenities, including retail at the Macquarie Centre, employment opportunities within the Macquarie Park Corridor and open space within Macquarie University and the nearby Lane Cove National Park. In addition, the Concept Plan makes the provision for pedestrian and cycle facilities within the site, identified in detail at Section 3.8.

Healthy Urban Development Checklist

The Healthy Urban Development Checklist was published by the NSW Department of Health out of recognition of the role that the built environment can play in preventing chronic disease.

The purpose of the checklist is to assist health professionals to provide advice on urban development policies, plans and proposals. The checklist is principally about helping to answer the questions surrounding the health effects of an urban development policy, plan or proposal and how it can be improved to achieve better health outcomes. The key elements of the checklist relate to:

- healthy food;
- physical activity;
- housing;
- transport and physical connectivity;
- employment;
- community safety and security;

- public open space;
- social infrastructure;
- social cohesion and social connectivity; and
- environment and health.

The Concept Plan and Stage 1 Project Application is able to satisfy the requirements of the checklist in that:

- the development will not restrict access to fresh, nutritious or affordable food, and will not affect the preservation of agricultural land;
- the development will foster incidental exercise, with the proximity to transport, employment and shopping nodes encouraging walking and active transport options, plus the provision of bicycle vouchers from the developer to apartment buyers as well as with every 100m^2 of non-residential GFA;
- the provision of approximately 600 apartments will encourage affordable housing and dwelling diversity;
- the site is within walking distance of rail and bus services, thereby reducing private vehicle usage and encouraging active and sustainable forms of transport;
- the site is located at the entrance to the Macquarie Park Corridor, providing future residents with access to a range of employment opportunities. The proximity to the Macquarie University provides access to opportunities for tertiary study and job training;
- the proposal does not raise any concerns with regards to CPTED, conversely, the development will activate the corner of Epping and Herring Roads;
- the Concept Plan and Project Application incorporates significant landscaping and public domain works that will provide access to green space and natural areas, safe, healthy and accessible public spaces, quality streetscapes and public art;
- the proposal encompasses social infrastructure including a community meeting room and commercial / retail uses that meet community needs;
- the inclusion of community services and non-residential uses will further enhance a sense of cohesion; and
- the development will not create negative environmental or health impacts with respect to air quality, water quality and safety, or adverse conditions with respect to noise, odour or light pollution.

6.7 Ryde Council Planning Instruments and Controls

The Minister for Planning is not bound by the provisions of an environmental planning instrument, other than a State Environmental Planning Policy in determining an application for a major project (section 75R(3)). In the giving of approval for a Part 3A Application, the Minister may take into account (but is not required to) the provisions of any environmental planning instrument that would apply but for the application of section 75R. Despite this, the DGRs require the proposal to justify any proposed departures from the development standards in Ryde Council policies as they relate to the site. A full Table of Compliance is provided at **Appendix T**, a summary of compliance against Ryde Council's LEP and DCP provisions is provided below in **Table 7** and **8**.

6.7.1 Summary of Compliance with Ryde LEP 2010

Table 7 – Summary of Compliance with Ryde LEP 2010

Provision/Standard/Control	Requirement	Compliance
Zoning	LEP 2010 The site is zoned B4 Mixed Use. The zone permits with consent a large range of uses including but not limited to residential, retail premises, business premises and recreation facilities.	Y
Height	**LEP 2010** The maximum Building height permissible on the subject site is 15.5m.	N- Refer to Sections 3.6 and 6.8
	Amendment No. 1 The maximum Building height permissible on the subject site is 52m.	N- Refer to Sections 3.6 and 6.8
FSR	**LEP 2010** The maximum Floor Space Ratio permissible on the subject site is 1:1. Clause 4.4 enables excess floor space above 1:1 if land contains park of the proposed access network shown in the Macquarie Park Corridor Proposed Access Network Map.	N- Refer to Sections 3.6 and 6.8
	Amendment No. 1 The maximum Floor Space Ratio permissible on the subject site is 2:1.	N- Refer to Sections 3.6 and 6.8
Tree Preservation	Consent required to remove trees	Y – Consent is sought as part of this application. Refer to Section 6.14
Earthworks	Development to minimise disruption on the environment and locality	Y – Refer Section 6.25
Consistency with Macquarie Park Corridor Objectives	6.6 Macquarie Park Corridor (a) to promote the corridor as a premium location for globally competitive businesses with strong links to the Macquarie University and research institutions and an enhanced sense of identity, (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, (c) to guide the quality of future development in the corridor, (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,	Y (b) The site is ideally located within walking distance of Macquarie University Railway Station and bus stops along Epping and Herring Roads, potentially reducing car dependency and providing opportunities for residents to work closer to home. (c) The design of the proposed buildings is exemplary and will help to guide the quality of future development in the vicinity. (d) The proposal is well designed and will provide a safe environment for residents and visitors in close proximity to Macquarie University Station.

Provision/Standard/Control	Requirement	Compliance
	(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.	(e)The proposal provides a small amount of retail and commercial uses that will best serve the needs of local residents and do not compete with the nearby Macquarie Centre. A predominantly residential development is proposed to increase the diversity of land uses in the vicinity thus providing improved integration of business and residential areas, with the remainder of the mixed use zone.

6.7.2 Summary of Compliance with Key Ryde DCP 2010 Provisions

Table 8 – Summary of Compliance with Key Ryde DCP 2010 Provisions

Provision/Standard/Control	Requirement	Compliance
6.1.1 Height Controls	Section 6.1.1 requires development to comply with Ryde LEP 2010.	No- Refer to Sections 3.6 and 6.8
6.1.2 Floor Space Ratio Controls	Section 6.1.2 requires development to comply with Ryde LEP 2010.	No- Refer to Sections 3.6 and 6.8
6.1.3 Site Planning and Staging	Section 6.1.3 requires sites to be planned to allow for the future provision of new streets and open spaces in accordance with Ryde LEP 2010.	Partial – Refer to Section 6.10 below.
6.1.4 Street Setbacks and Build-to Lines	Section 6.1.4 requires minimum setbacks and build-to lines to be provided as shown in Figure 4.5.83	Partial – Sections 3.6 and 6.8
6.1.6 Building Separation	Section 6.1.6 requires developments to provide building separation as recommended by the NSW Residential Flat Design Code.	Partial - refer to **Appendix J** and Section 6.11
6.1.7 Building Bulk	Section 6.1.7 requires development to provide maximum building depth as recommended in the NSW Residential Flat Design Code.	Y - Refer to **Appendix J**
6.1.8 Site Coverage and Deep Soil Areas	Section 6.1.8 required sites within 'Special Precinct', to have a minimum 15% of the developable area of a site provided as deep soil area.	No – Complies with RFDC "Rules of Thumb" for deep soil landscaping - refer to Section 6.11

6.7.3 Draft City of Ryde Housing Study 2010

The draft Housing Strategy considers the direction of housing in the Ryde LGA and forms part of the Local Planning Strategy for the City of Ryde, taking account of the Metropolitan Strategy and Inner North Sub Regional Strategy.

The draft strategy has been strongly informed by public consultation. The key outcomes of the consultation process were the desire to make it easier to use public transport and to walk and cycle, maintaining a diversity of housing choice, providing accessible housing for older people and people with disabilities, to provide higher densities around town centres and for new residential areas to be planned around employment centres so as to support local businesses and reduce travel times and dependency on private transport.

Another common theme is the need to maintain a diversity of housing choice, and to provide housing that is affordable, particularly for young couples and families, and the linguistically diverse who often find it difficult to access housing. The need to provide accommodation that is affordable for key workers has also been noted as important.

In terms of location, town / large centres are seen as the most appropriate for high density housing. Providing housing for young lone persons and young couples within and around centres is a way to increase opportunities for young household types to enter the Ryde housing market, or to rent if not in a position to purchase.

Providing high density, smaller housing is identified as a way to meet the needs of the increasing ageing population. Building good quality, well designed and accessible units, close to the shops and services of centres provides an alternative for older people who would then move out of more traditional family homes, making them available for families to purchase. Catering for the needs of the ageing population and facilitating "ageing in place" was seen as important. This avoids the need for elderly people to move away from an area where they may have support and community connections.

The draft strategy sets a number of priorities including:

- maintaining the City of Ryde's current strategic planning direction to focus the majority of residential growth within Macquarie Park and the town centres; and
- providing a diversity of housing types. This would ensure the needs of present and future residents are met including young families, single person households and ageing couples. It would also facilitate 'ageing in place'. In addition it is acknowledged that smaller dwellings are more affordable.

The proposal meets the objectives of the Draft Housing Study by providing:

- residential development in proximity to an employment centre;
- a diversity of housing choice and apartment mix and size that will be more affordable;
- housing for young lone persons and young couples within and around centres to increase opportunities for young household types to enter the Ryde housing market; and
- good quality, well designed options for adaptable units, close to shops and services, providing an alternative for older people moving out of traditional family homes, making them available for families to purchase.

6.7.4 Draft City of Ryde Environment and Open Space Study 2010

The Draft Environment and Open Space Strategy assesses the changing demographics of the community and considers the impact of these trends on the demand for open space and the recreational needs of various social groups within the LGA. It identifies that the population of Ryde is both ageing and becoming increasingly ethnically diverse, with an increase in residents originating from China, Hong Kong and South Korea.

The Strategy notes that in achieving the LGA's dwelling target to 2031 the housing mix within the LGA will continue to shift towards a greater proportion of smaller dwellings with limited or no private open space. This will stimulate an increase in demand for public open space in all parts of the LGA, particularly in town centres. Identifying how these issues may be addressed, based on feedback from Ryde residents surveyed as part of the Leisure and Recreation Needs Community Consultation Report (City of Ryde, April 2009), the Strategy notes the following:

- Culturally and Linguistically Diverse (CALD) respondents had a higher demand for halls and meeting rooms expressing a need for more community centres. CALD residents used leisure and recreation facilities / settings less than others. Based on preferences for recreational activities CALD respondents ranked dancing and 'dance socials' as their top priority and gave greater importance to indoor sports facilities, golf, social and recreation support services, and seniors' activities / centres;
- older residents indicated the two key challenges they faced were access and transport constraints. They expressed a need for open space and recreational venues to be located on public transport routes with designated seniors parking. Residents aged 50 + also indicated the desire for more informal passive open space and walking and cycling routes; and
- all residents expressed a need for more bike paths, swimming venues, parks and gardens, sports fields / sport facilities and libraries. The top 10 lacking or inadequate facilities, as nominated by all residents were; bike paths, off leash dog areas, swimming pools, parks and gardens, playgrounds, walking paths, sports fields and sports facilities, improved transport / accessibility / parking, libraries and picnic areas.

The Strategy notes that the amount of active open space in Ryde is much lower than National Playing Fields Association Standards. The amount of passive open space is also below this accepted standard. The current supply of open space is characterised by a large number of small sites which have very limited capacity for use.

The proposal meets the objectives of the Draft Environment and Open Space Strategy by providing a space that is made available for occasional public use, thereby fulfilling the need for additional community meeting rooms. It also provides parks and gardens for use by residents of the development, as well as the wider public. These include spaces that cater for active and passive use, including the Pool Garden, Village Green and Garden of Earthly Delights. This style of open space is particularly necessary for older residents, who require more formal gardens and smaller pockets of open space for passive recreation.

6.7.5 Draft City of Ryde Transport Study 2010

The Draft City of Ryde Transport Study recommends a range of provisions for the draft Comprehensive LEP and matters for consideration for the corresponding DCP. The Transport Study's goal is to encourage improved transport options and ameliorate traffic congestion within the LGA. The aim is to achieve this through the planning of a sustainable, integrated and accessible transport system and urban environment.

The proposal is consistent with the objectives of the Draft City of Ryde Transport Study. By reducing DCP car parking provisions, residents will be encouraged to use readily available public transport services, helping to ameliorate against traffic congestion. Similarly, the provision of bicycle vouchers, bicycle facilities, and an improved pedestrian network will encourage sustainable modes of travel.

6.7.6 Draft City of Ryde Employment Study 2010

The Draft City of Ryde Employment Study has been based upon previous research findings and recommendations from prior studies. The study aims to provide an understanding of the economic profile of the City of Ryde and discusses development directions and identifies economic development opportunities.

The study notes that Macquarie Park is set to become the fourth largest business district in the country, larger than Perth and Adelaide. This is based on its capacity to grow to approximately 1,250,000m^2 by 2034.

The study acknowledges Macquarie Park as a hub for global companies as well as small and medium sized enterprises, and supports its continued growth. One of the implications of this level of growth is that the future growth in white collar jobs in Macquarie Park alone is likely to outpace population growth. This trend could have significant impacts on issues such as traffic congestion and the ability of existing companies to attract workers.

Macquarie Park is seen as a prominent cluster for pharmaceutical and creative industries. This clustering is helping to reinforce the attractiveness of Macquarie Park by helping enterprises with common business objectives and outcomes to be competitive.

The study recognises a new trend in the growth of home-based (Micro) businesses, which are estimated to make up approximately two-thirds of the State's small businesses. The study identifies SOHO developments as a way to capture the economic benefits associated with the growth in this sector and encourages such uses in and around all commercial centres.

The proposal is consistent with the objectives of the Draft City of Ryde Employment Study by encouraging people to work from home through the provision of 35 SOHO apartments. The proposal will also support the Macquarie Park Corridor in becoming a premium location for globally competitive businesses, with residential accommodation ensuring employees can live close to their work places.

6.8 Urban Design and Built Form

6.8.1 Height, Bulk and Scale

The Concept Plan proposes a built form that considers the context of the site, including the existing development, the transitional nature of the local area and the close proximity to public transport (both the Macquarie Park Station and bus interchange at the Macquarie Centre).

As shown in **Table 7**, the proposed Concept Plan does not comply with the maximum building heights or FSRs in Ryde LEP 2010 or the foreshadowed draft Amendment No. 1 (as outlined at Section 2.3.1).

Background on Existing Controls

In order to understand why the existing development standards are inappropriate for the site, it is important to consider the history of the planning process that has occurred within the Macquarie Park Corridor.

The recently gazetted environmental planning instrument, Ryde LEP 2010 (formerly known as Draft LEP 2008) is a direct conversion of Ryde LEP 137. Consequently the LEP was not the result of a detailed planning analysis. Nor did it review the appropriateness of the existing planning controls, which were prepared and gazetted at a time when the vision for Macquarie Park was largely for consolidation of pre-existing business park development and not a higher order employment and education hub of regional and state significance in proximity to significant transport infrastructure.

Concurrent to this process, Ryde Council became aware of the need to revise its current controls to allow for development to match strategic planning objectives, and began preparing Draft LEP 2008 (Amendment 1) (herein after known as Amendment 1). Amendment 1, which specifically dealt with the Macquarie Park Corridor, sought to amend the then existing draft LEP by significantly increasing the development potential of the subject site (subject to floor space incentives) consistent with the State and Council's vision for the future of the Macquarie Park Corridor.

In anticipation of the future gazettal of Amendment 1, Council released an amendment to its DCP 2006 which reflected its desire for much higher density development around the recently opened Macquarie University Railway Station. However, due to various issues which could not be easily resolved between Ryde Council and the Department of Planning, the changes envisaged in Amendment 1 were put on hold. As a result Council was left with a DCP which referred to the development standards contained in Amendment 1, and which was inconsistent with the then current LEP 137.

Concurrent to the gazettal of LEP 2010 in June 2010, Council released its new DCP 2010. The DCP contains a specific section (Section 4.2.3 of the DCP) with controls for building heights within special precincts. The building heights shown in the DCP reflect similar heights to those contained within Amendment 1 and are therefore again inconsistent with the LEP 2010 height development standard.

Whilst it is acknowledged that the LEP has statutory weight over the DCP, the history detailed above demonstrates Council's clear desire and intent to have significantly higher development in proximity to Macquarie University Railway Station and other sites in the Corridor. Compliance with the existing development standards, contained in the LEP, would not only fail to reasonably utilise and maximise opportunity at one of the key sites available for residential development in the Macquarie Park Corridor but it would also be inconsistent with the Metropolitan Strategy and Metropolitan Transport Plan.

Council is acutely aware of the need to revise its current controls to allow for development to match strategic planning objectives. To this end Council sought to provide for increased height and FSR controls in Ryde LEP 2008 Amendment No. 1. Whilst an FSR of 2:1 is proposed, we understand this was largely predicated on matching the existing FSR of the nearby Morling College, which currently has a 2:1 FSR control, rather than analysing the site from first principles.

Development on the site under its current and proposed controls would not fulfil the development potential of the site and would be inconsistent with the broader strategic aims. They do not provide adequate scope to accommodate a scale of development that recognises the strategic importance of the site within Macquarie Park, nor do they enable the achievement of an appropriate contextual height and form relationship to approved and proposed Part 3A Concept Plans in direct proximity. The planning controls do not provide a development that would achieve a desired built form in proximity to the station, transport interchange and regional shopping facilities.

Site and Context is Capable of Accommodating Height and FSR

As previously discussed, the Concept Plan does not comply with LEP 2010. From a merit perspective, the proposed building envelopes will contribute to the functionality and aesthetics of the site and are able to be accommodated within the surrounding context for the following reasons:

- The scale of the proposal will strengthen the streetscape and is in line with Council's desire to situate prominent buildings at major entrances to Macquarie Park. The City of Ryde DCP identifies a strong corner element on this site on the Herring Road frontage. AJ + C have adjusted this corner element by situating the landmark corner building on Epping Road, so as to provide a sense of address for the business park as people travel along Epping Road. This landmark building, has a proposed height of 20 habitable storeys.
- The proposal will also complement the Macquarie University Concept Plan with the creation of a strong corner element, creating a 'book end' to the taller buildings approved in the Macquarie University Concept Plan at the northern end of Herring Road (up to 108m in height).
- The orientation of the landmark building east-west along Epping Road creates a slender landmark building. A gateway building on the primary arterial road is considered a better response that on the narrower, secondary frontage of Herring Road.
- The proposal includes a diversity of heights which provides differentiation in built form and prevents the repetitive orientation of buildings which can result in a perception of greater density or a monolithic appearance of a wall of buildings. The diversity of heights, in conjunction with sufficient spatial separation between buildings, creates the perception of openness to the site which reduces the perception and appearance of density.
- The site is one of the few consolidated development sites within Macquarie Park that can accommodate residential development of this scale, reducing pressure on greenfield areas, or other infill areas in strata ownership.
- The proposal will provide over 600 high quality residential dwellings that will contribute to subregional housing stock targets, which require an additional 30,000 dwellings within the Inner North Subregion by 2031, including 12,000 dwellings within the Ryde LGA.
- The proposal presents an opportunity to achieve a greater land use balance within the Macquarie Park Corridor. The significance of achieving a land use balance with other uses in the corridor needs to be considered in the context of the substantial amount of future planned commercial and educational teaching floor space, in addition to the large office precinct and university campus that already exists within Macquarie Park. The proposed residential use will support the surrounding education and commercial areas.

- The orientation of the site and the positioning of the buildings is such that the majority of overshadowing will fall across Epping Road rather than residential uses, with sufficient daylight access to adjoining properties maintained during the critical winter solstice. Therefore no direct impacts arise from the proposed heights and densities.
- The proposed development also responds to recent projects in the area which have sought to increase height and FSR built form in the locality, commensurate with their access to the Macquarie University Railway Station. Recent approved and proposed developments in the locality demonstrate that a transformation in height and densities in the immediate area has begun to occur. **Figure 32** demonstrate the approved scale of development along Herring and Epping Roads, as well as the development potential attainable under Council's existing and draft planning controls.
- The proposal will have a number of positive social impacts, providing a range of services on site for the use of residents and the general public, as discussed in detail in Section 3.9.1.

Benefits from the Provision of Additional FSR

- In accordance with Ryde Council's philosophy, the additional FSR allows the provision of additional public benefit. The proposal provides:
  - construction and dedication to Council of a new Type 3 road to improve the opportunity of a fine grain road network in Macquarie Park;
  - a significant commitment by the proponent to achieved best practice ESD outcomes by extending BASIX compliance to achieve a 4 Green Star Rating under the Green Building Council;
  - provision of public access to the planned community meeting room and to communal open spaces within the development;
  - significant landscape embellishment to the Type 3 road proposed for dedication to Council; and
  - commitment to a Public Art Strategy.

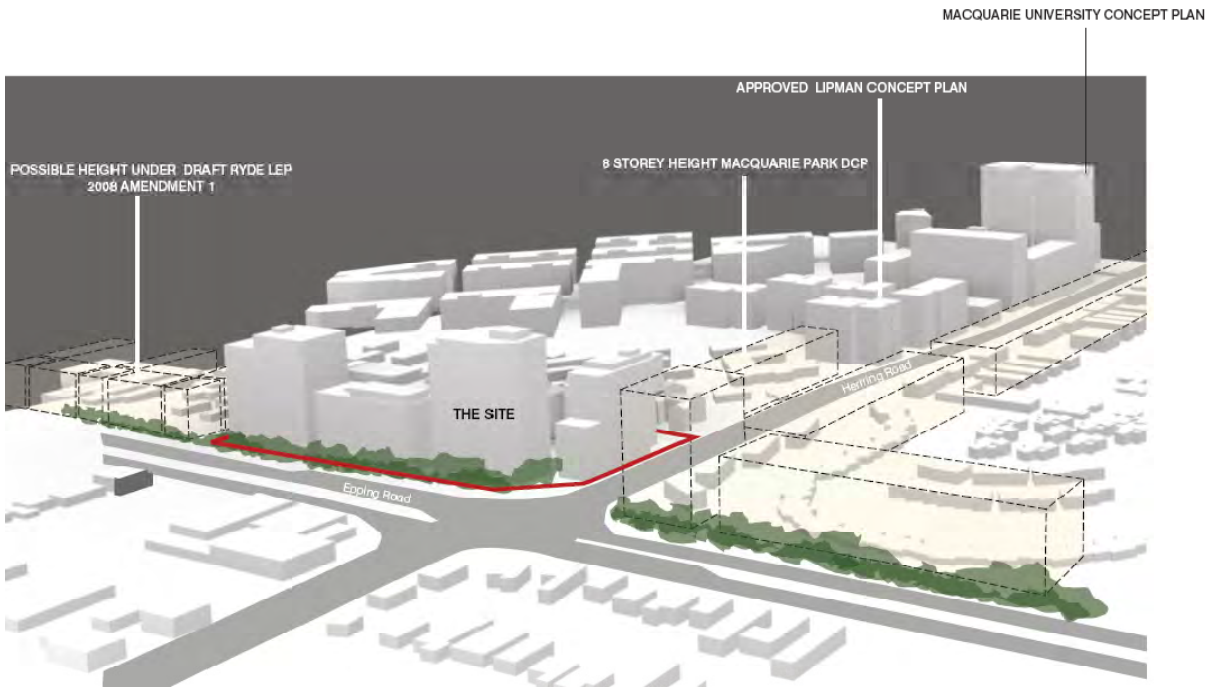

Figure 32 – Future building heights along Herring and Epping Roads
Source: AJ+C

Interaction with Existing Built Form

Whilst the proposed development if is of a higher density than existing low-medium density development surrounding the site, the interaction with the surrounding built form is sympathetic. Particular consideration has been given to the relationship with existing development at the adjoining retirement village, and development along Herring Road. With respect to the retirement village:

- The existing retirement village are buildings in a landscape setting. From Epping Road the buildings of the retirement village are not visible. It is largely screened by mature trees, which presents the scale to Epping Road and to the site.
- Macquarie Park Corridor DCP earmarks the site as a landmark location signifying the entry to the Macquarie Park Corridor. This important corner of Epping and Herring Road is formed by a built edge in contrast to the landscaped edge along Epping Road.
- The scale of the space at the interface between the site and the retirement village is largely created by the vegetation, rather than the built form. The vegetation is particularly dense at the boundary of the two sites, which not only helps to create a visual barrier between the site and the retirement village, but also alters the perception of height, with tall, dense vegetation acting to increase the apparent scale of the space. The extent of vegetation between the two sites and the difference between the topography of the two sites (the retirement village sits lower within the valley along Epping Road) will also affect the reading of the height difference, providing a transition between the proposed heights on the Macquarie Village site, and the adjacent retirement village.
- As noted previously, the scale of the proposed development is consistent with its role as an edge site and marker to the entry of the Macquarie Park Corridor. As such, it is appropriate that it be of a higher density and scale than the adjoining retirement village. The taller landmark building located in the south-western corner of the site responds to its location on Epping Road with minimal overshadowing and impacts to adjoining properties due to the separation afforded by Epping Road. Buildings of between 5 and 8 storeys are located adjoining the retirement village site, to provide a more sympathetic interface with surrounding development.
- Significant separation distances are proposed between the development and the nearest buildings within the retirement village (refer to **Figure 33**). The proposed separation distance of between 18.5 and 23.4m is significantly larger than the existing 8.2-10m setback provided between the existing hotel and the nearest building at the retirement village. The relationship between the proposed scheme and the existing retirement village does not result in any adverse impacts with respect to overshadowing, overlooking or negative visual impact. Overshadowing is limited by the orientation for the site, with overlooking and visual impacts mitigated by the separation distance and dense vegetation which exists between the site and retirement village.

With respect to the relationship between the site and existing development on Herring Road, as detailed above, the site is a gateway site, providing a 'bookend' to development at Macquarie University. In particular this bookend addresses the approved Macquarie University concept plan which shows a building in the order of 30 storeys at the corner of Waterloo and Herring Road.

The Macquarie Village site should be viewed in terms of its relationship with the University, which forms this 'bookend' at the northern end of Herring Road, rather than development along Herring Road between the two sites.

Notwithstanding this, as detailed below, recently approved development along Herring Road demonstrates the move towards increased heights and densities in the locality, consistent with the strategic context.

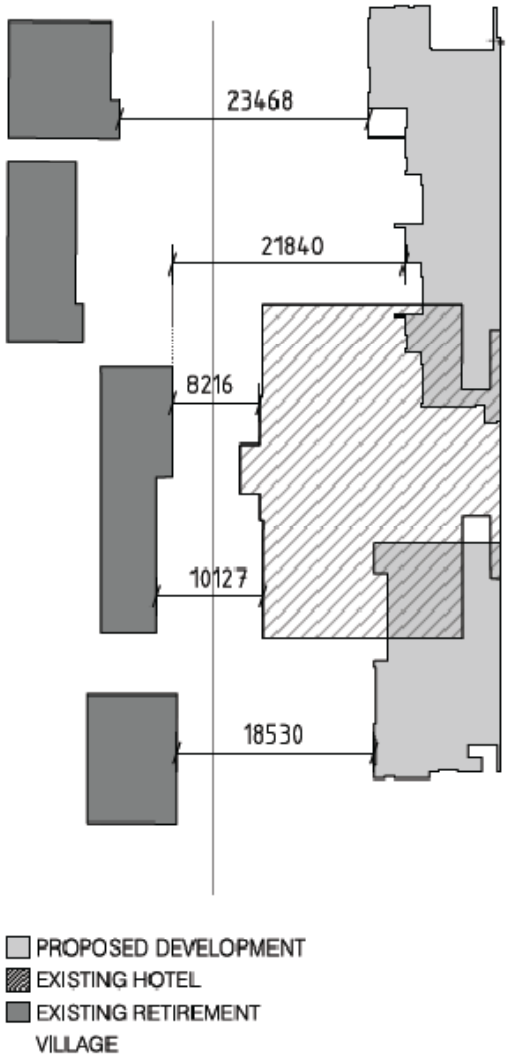

Figure 33 – Existing and proposed separation distances between the site and adjoining retirement village

Source: AJ+C

Compatibility with Desired Future Character

Whilst the immediate vicinity is currently dominated by low-medium residential development, there is no predominant character in the broader area, with a combination of retail, education and residential development of varying scales. Ryde Council seeks to promote and intensify these uses, with the site identified as a potential gateway site into the Macquarie Park Corridor.

Relationship with Retirement Village at Future Height

Currently, there is a difference in the style and scale of development between the proposal and the adjoining retirement village. Whilst the retirement village provides for dispersed buildings within a landscape setting, Macquarie Village provides for development that is commensurate with its location as a gateway site at the entry to the Macquarie Park Corridor and promoting residential development near employment opportunities, as well as other transport, entertainment and retail facilities.

Ultimately, if the retirement village is developed to its potential of 29.2 metres under Draft LEP Amendment No. 1, concerns around the potential impacts associated with the difference in scale on the two sites would be further alleviated, whilst the heavy vegetated buffer and separation distances between any future redevelopment could be maintained.

Relationship with Existing and Future Heights along Herring Road
The site is a gateway site, providing a bookend to development at Macquarie University (which has approval for buildings of approximately 30 storeys under the Macquarie University Concept Plan). From an urban design perspective it is more appropriate that the Macquarie Village site be viewed in terms of its relationship with the University, which forms the bookend at the northern end of Herring Road, rather than development along Herring Road in between the two sites. This is best demonstrated in **Figure 32** above, which shows the two bookends of the University and the Macquarie Village proposal complementing each other and the Macquarie Village proposal creating a clear urban marker for the entry to the Business Park. Buildings of a transitioning medium scale are located between under the recent Lipman Concept Plan (MP09_0195) and future potential development under Amendment No. 1. Notwithstanding this, recently approved development along Herring Road demonstrates the move towards increased heights and densities in the locality, consistent with the strategic context.

Therefore, overall the scale of the development is considered appropriate for the location and is consistent with the desired future character for the area / site as envisaged by Amendment 1 and DCP 2010, as well as approved and proposed Part 3A projects.

6.8.2 Setbacks

As identified in Section 3.6.4, the following minimum setbacks are proposed:

- 10m to the south-western (Epping Road) boundary;
- 5m to the south-eastern (Herring Road) boundary;
- 5m to the southern (corner of Herring and Epping Roads) boundary;
- 16.1m to the north-eastern boundary; and
- 13.5m to the north-western boundary.

The 10m landscaped setback to Epping Road is consistent with Ryde Council's DCP controls, enabling deep soil landscaping and the retention of many of the existing mature trees. The retention of this setback and much of the existing landscaping will also soften the appearance of the development, and maintain the leafy character of the area. The proposed 5m setback to the Herring Road frontage deviates from Council's DCP, however it is considered appropriate as it:

- acknowledges the corner location and will improve the urban form and spatial definition of the corner;
- it will ensure a better relationship between the proposed ground level retail uses and the street; and
- enhances the casual safety and surveillance of Herring Road.

The proposed setbacks to the north-eastern and north-western boundaries are appropriate as they reinforce the street hierarchy and scale. Further, the internal roads provide separation between the proposed development and neighbouring properties, ensuring that the amenity of neighbouring properties is maintained.

6.9 Transport and Accessibility

An assessment of the traffic, transport and accessibility implications for the proposed Concept Plan has been undertaken by Traffix and is included at **Appendix U.** The report describes the road and intersection network surrounding the site, existing traffic volumes and parking facilities, and the effects of the proposed development in terms of traffic and parking and addresses the need for any infrastructure upgrades.

Car Parking

Under the proposed Concept Plan a total of 790 parking spaces are proposed, which comprises 715 spaces in the two and a half levels of basement parking, and 75 on-street parking spaces. This is based on the detailed unit mix for Stage 1 of:

- maximum 52% one bedroom apartments;
- minimum 38% two bedroom apartments; and
- minimum 10% three bedroom apartments.

A similar assumed mix for Stage 2 has been utilised for traffic modelling purposes, and to obtain a maximum car parking number. The assumed mix for Stage 2 is:

- maximum 57% one bedroom apartments;
- minimum 39% two bedroom apartments; and
- minimum 4% three bedroom apartments.

However, Concept approval is not sought for this mix.

The proposed car parking has been assessed in accordance with the requirements of the Ryde Council's DCP 2010, and in particular:

- Part 3.4 Residential Flat Buildings and multi Dwelling housing;
- Part 9.3 Car Parking; and
- Ryde LEP Restrictions Map for non-Residential Land Uses.

The site's proximity to Epping Road enables parking rates to be reduced in accordance with section 2.1 of the Car Parking DCP. The RTA's parking guidelines for high density developments in metropolitan sub-regional centres has also been assessed for comparison purposes. A comparison of proposed parking rates with the requirements of Council and the RTA Council's requirements is provided below in **Table 9**.

Table 9 – Comparison of required and proposed parking rates

DCP Requirement	RTA Requirement	Proposed
869	611	790

The 790 spaces proposed results in a nominal deficiency of 79 spaces compared to Council's DCP controls. However, reduced parking rates are supported by the Department of Planning, commensurate with the location of the site, and its proximity to public transport links. Therefore, the proposed parking provisions are considered supportable. It is not considered that the parking reductions will create any adverse on-street parking effects in the wider locality. This is confirmed by the RTA's Guide to Traffic Generating Developments for high density residential flat buildings in sub-regional centres which would require only 611 spaces for the assumed mix, compared to the 790 spaces proposed.

Whilst the site does not currently have the same level of accessibility to public transport and other services as these subregional centres, the concessions sought from Council's requirements are both reasonable and appropriate in the circumstances.

In addition to the basement parking spaces, 40 motorcycle spaces are provided which will further ensure that all parking demands are accommodated on-site. Disabled parking will be provided pursuant to all relevant standards and will be designed in accordance with AS2890.6. 75 accessible parking spaces are proposed as part of the development, comprising space one for each of the adaptable apartments, and two disabled visitor parking spaces. 34 of these accessible parking spaces will be provided as part of Stage 1.

In summary, whilst the parking provision is less that that nominally required by Council's DCP, the level of provision is sufficient to accommodate expected demands, while encouraging the use of alternative transport modes, which is consistent with the objectives of the Macquarie Park Corridor and State Government policy more generally. In this regard, the traffic assessment details the proposal's response to strategic planning policy. Both the Metropolitan Transport Plan and Integrating Land Use and Transport – a Planning Policy Package seek to reduce car usage and promote public transport and alternative transportation modes through integrated transport plans, and promoting development within close proximity of public transport. Notwithstanding this, the implementation of transport plans is more difficult to achieve in residential development, as it is more difficult to encourage non-car usage other than for journey to work trips. For this reason, a Travel Plan is to be prepared prior to the issue of a Construction Certificate for Stage 1, which will ensure that the development provides the maximum opportunity for residents to use non-car travel modes. The Travel Plan will include aspects such as:

- local bus stop locations;
- bus and rail timetables;
- location of taxi ranks in the locality;
- location of local services within walking distance such as convenience stores, supermarkets and other retail related areas;
- location of car share vehicles; and
- local cycle routes including the City of Ryde cycle map.

In addition, the development will include extensive bicycle facilities to promote non-car travel, particularly for local trips. Consultation will also be undertaken with car share operators such as Go Get to provide car share vehicles within the proposed future road network. Even in the absence of a Travel Plan, the site's proximity to the Macquarie University Railway Station will maximise trips using public transport generally, including journeys to work.

Traffic Generation and Potential Traffic Impact

A survey of the existing Stamford Grand Hotel indicates that the site currently generates 128 vehicles movements per hour during the AM peak (80 in and 48 out) and 104 vehicle movements per hour during the PM peak (48 in and 56 out).

The traffic generation of the proposed scheme has been determined using the RTA's Guide to Traffic Generating Developments. In accordance with the guidelines, high density residential flat buildings in metropolitan sub-regional centres generate 0.29 trips per unit. Based on the assumed mix, a total of 626 units have been modelled.

A total of 182 trips will be generated per hour as follows:

- 37 in and 145 out during the morning peak period (7-8am and 8-9am); and
- 145 in and 37 out during the afternoon peak period (4-5pm and 5-6pm).

Traffic generation rates for the non-residential component of the development have been based on retail uses and a child care centre. Although a child care centre is not proposed at this stage, it has been modelled as a worst case scenario for traffic generation on the site. The RTA's rate of 4.0 trips per 100m^2 of gross floor area, results in a total of 32 vehicle trips per hour during the critical morning and evening peak periods. However, it is acknowledged that this figure does not take into account the use of these areas by people who may reside within the site. The exact nature of vehicular movements will be confirmed once the use of these non-residential spaces is determined, as part of the Stage 2 Development Application to Council. However, for assessment purposes, the combined residential and non-residential uses are modelled to generate 216 vehicle movements per hour comprising:

- 64 in and 152 out during the morning peak period (7-8am and 8-9am); and
- 152 in and 64 out during the afternoon peak period (4-5pm and 5-6pm).

This equates to an increase of 104 trips during the morning peak, and 111 trips during the evening peak, above what is produced by the existing hotel.

The impacts associated with the proposed increase in generation have been assessed using the Macquarie Park Corridor Paramics Model. However, it is noted that the development will result in a maximum net increase of only 109 vehicles per hour, which is considered moderate for developments within Macquarie Park. It is also noted that the traffic generation rates outlined above do not consider any discounts for increased public transport use, or alternative forms of transport. In this regard, it is considered that the site's proximity to the University and business park will have a significant impact on trips from the site. Therefore, the assessment undertaken is considered a worst case scenario, and is considered to have only moderate traffic generation impacts.

Macquarie Park 2007 Base Paramics Model Assessment

As stipulated by the DGRs, a Paramics micro simulation model has been used to assess the impacts of the development on the surrounding road network. As discussed above, the proposed development will result in a net increase of only 109 vehicles per hour during peak periods, or a maximum of 1-2 additional vehicles per minute over and above the existing hotel conditions. This is considered well within the fluctuations of daily flows and can easily be accommodated within the existing road network without any measurable impact on existing levels of services. Accordingly, no network road improvements are considered necessary to support the development, and all critical intersections will continue to operate as currently occurs. The report concludes that the increased volumes associated with the site are very moderate, and equate to a maximum increase of only 1.5% over and above existing volumes.

These volumes will have no measurable impact on the existing operation of key intersections, and the proposal is therefore supportable on traffic planning grounds. It is noted that base Paramics data takes into account approved and proposed developments in Macquarie Park, and as such, the cumulative impact of the proposal has been assessed, and will not have any significant impact on the existing road network.

Access and Internal Design

The Council Network Structure Plan identifies two Type 3 roads which are to traverse the northern site boundary from Herring Road to the west of the site, and a second road (also a Type 3) which is to traverse in a north-south direction for approximately 200m, bisecting the Stamford Hotel site. The two new Type 3 roads are generally in accordance with the principles established under Council's Street Network Structure Plan, accessing both Epping and Herring Roads. However, the north-south road that traverses the site under Council's structure plan has been removed, and the north-south road has been relocated to align with the site boundary. The alternative alignments proposed have been discussed with Council and result from a detailed review of the lot boundary locations and alignments. As a result, the following modifications are proposed:

- construction of the Type 3 road along the northern-eastern site boundary as proposed under the DCP. The construction is to include a carriageway width of 8.5m and will allow two-way flow along its length in addition to indented (protected) parallel parking along the southern side of the road;
- the relocation of the proposed north-south Type 3 road currently aligned to bisect the site is now proposed to be deleted. This road would form an intersection with Epping Road that would be less than 100m from Herring Road. This would be hazardous for left turn entry movements, as following traffic would potentially assume that a vehicle entering the site would be turning left at Herring Road, resulting in the potential for rear-end collisions. In addition, left turn exit movements would be over a crest where visibility is limited, while access could not safely be achieved to the far right turn lane in Epping Road for the movement into Herring Road;
- the relocation of the above Type 3 road to the north western boundary is considered preferable as it is able to be delivered as part of the road staging solution for the Concept Plan. Specifically, it is proposed that there be a half road construction with southbound two-way movement onto Epping Road only permitted (subject to future connection). Site distance at this intersection is excellent, and movement can be introduced when the Type 3 road is required to be constructed in the future. The one-way southbound operation will also ensure that 'rat running' through the site dopes not occur. The road is to be constructed with a 9.2m wide carriageway and will include parallel parking on both its eastern and western sides.

The internal design of all internal roads reflects the principles of AS2890.1 and AS2890.6 (Off-Street Parking for People with Disabilities). The report concludes that the current proposal will operate satisfactorily.

Pedestrian and Bicycle Linkages

An extensive footpath system is proposed with access opportunities for both pedestrians and cyclists on all frontages of the proposed development. Furthermore, significant internal pedestrian connectivity is proposed to allow easy access along pedestrian desire lines to areas such as bus stops along Herring and Epping Roads.

Bicycle facilities will be provided in accordance with Council's requirements, to encourage alternative transport methods. Both the Ryde Bicycle Strategy Master Plan 2007 and Planning Guidelines for Walking and Cycling (2004) were reviewed and elements have been adopted within the design. Whilst the Ryde Bicycle Strategy Master Plan 2007 does not directly outline measures for private developments, and concentrates more on public domain improvements, the key objective of encouraging the use of bicycles in the area has been adopted, and will be reflected in the provision of bicycle storage facilities and access to bicycle routes.

Similarly, whilst some elements of the Planning Guidelines for Walking and Cycling (2004) have been adopted, they primarily apply to major centres, as well as regional cities and towns. These elements include the provision of pedestrian and cycle access locations within close proximity to the major crossing and desire lines to ensure ease of access.

The Macquarie Park Pedestrian Movement Study has also been reviewed and considered. This report does not identify any major pedestrian or cycle infrastructure upgrades in the vicinity, and as such, the proposed pedestrian access locations to major crossings on Epping and Lane Cove Roads are considered acceptable to facilitate future pedestrian and cycle needs as identified in the report.

Future Road Upgrades

The DGRs require that consideration be given to the provision of increased setbacks to Epping Road in order to accommodate planned future road upgrades, in accordance with the RTA's recommendations. It is noted that this matter has been raised with the RTA for guidance and advice, however no response has been received to-date. As a result, all setback along Epping Road have been provided in accordance with Council's DCP, and are considered acceptable and generous.

Implications for Non-Car Travel Modes

Notwithstanding that the traffic generation of the development is acceptable, in order to encourage the use of more sustainable forms of transport, it is proposed that a Travel Plan will be prepared and issued to residents. As detailed above, the Travel Plan will:

- encourage public transport by residents and tenants through the provision of information, maps and timetables;
- encourage walking and cycling through the provision of maps showing walking and cycling routes, as well as local services that area available within walking distance; and
- encourage cycling by offering incentives to purchase bicycles and by providing safe and secure bicycle parking facilities.

A commitment has been made to prepare a Travel Plan prior to the issue of a Construction Certificate for Stage 1. It is also noted that the reduced provision of car parking on the site will further encourage the use of sustainable transport modes, as will the proximity to public transport services.

In summary, the proposed Concept Plan and Stage 1 Project Application has been assessed as being acceptable from a traffic generation perspective, and does not require any infrastructure upgrades.

6.10 Visual Analysis

Photomontages have been prepared by Ivolve Studios (refer to **Appendix V**) to support a View Analysis of the Concept Plan and Project Application, and the impact it will have on the immediate and regional context, with respect to views to and through the site. Visual amenity and impacts resulting from the Stage 1 Project Application and Concept Plan, when viewed from locations outside of the site, are also considered.

The photomontages were prepared from locations identified by the project team following consultation with Council and the Department of Planning (refer to **Figure 34**). Existing views of the site, and photomontages demonstrating the visual impact of the proposed development from these sites, are included at **Figure 35**.

Figure 34 – Key view locations
Source: AJ+C

View A – Existing

View A – Proposed

View B – Existing

View B – Proposed

View C – Existing

View C – Proposed

View D – Existing

View D – Proposed

View E – Existing

View E – Proposed

View F – Existing

View F – Proposed

View G – Existing

View G – Proposed

View H – Existing

View H – Proposed

Figure 35 – Existing views to the site, and visual impact of the proposed development
Source: Ivolve Studios

Existing Views

Currently, neither the site, nor adjoining properties enjoy any significant views. Due to the existing height of developments, views are limited to those across and down Epping and Herring Roads and to adjoining properties to the north and west, with no significant views available from the site, or surrounding areas. Existing local views are currently dominated by Epping Road, which is flanked by a vegetated buffer. Any potential views are generally obscured due to vegetation and the topography of the area.

The proposed building heights within the Concept Plan and Project Application, combined with the site's position at the peak of a ridge, will enhance opportunities for district views to be made available to the future apartments on the site.

View Impacts

The site is located within an area that is currently in transition to higher density, mixed use forms. The site is currently occupied by a hotel with a maximum height of three storeys, and the immediate locality is currently dominated by low-medium density residential development. Therefore, in the current context, the proposal will have a visual impact on local and regional views towards the site. However, because existing views are limited, the development will have a negligible impact on views available from surrounding developments. The provision of taller, more slender buildings, along with suitable separation distances, ensure that views from future apartments through the site are created.

Whilst the development will undoubtedly alter the Epping Road streetscape, it will activate the Epping Road frontage, and will clearly denote the entry to the Macquarie Park Corridor. The apparent visual impact of the development for motorists and other passersby will be reduced through the provision of an articulated frontage, and by maintaining the existing 10m landscaped setback to Epping Road. The visual impact will also be softened through the use of colours that draw from the colours of the surrounding bush and eucalyptus trees, as well as materials and textures that break down the mass of the buildings. This will help establish a varied and articulated frontage to Epping Road.

Distant views to the site from surrounding areas are, in many instances, obscured by vegetation and the topography of the area, as illustrated in photomontages from viewpoints A, C and H. As a result, the proposal will not have a significant visual impact on low density residential areas within the locality.

Based on the above, it can be concluded that:

- the Concept Plan and Project Application will not obscure any significant existing views from any residential dwellings;
- given the existing underdeveloped nature of the site, an immediate visual impact will occur for surrounding residents, however the appearance of the buildings for surrounding residents is improved by modulation, articulation and materials;
- the proposed range of building heights responds appropriately to the gateway site and provide variation to improve the appearance of the buildings;
- the development will define views up Epping Road, providing a gateway building that denotes the intersection of Epping and Herring Roads and signifies the entry to the Macquarie Park Corridor; and
- the development has the visual appearance consistent with the future nature of the local area as a high density mixed use precinct.

Internal Visual Amenity

The Concept Plan considers amenity and views within the site through the following design outcomes:

- the modulation of building heights on Epping Road, and across the site, will ensure greater potential for views to be achieved from future apartments within the site;
- the provision of taller, more slender buildings will create view opportunities within the site;
- the provision of parking within the basement, and minimal on-street parking, will improve the visual amenity for pedestrians in the public domain;
- the provision of open space and parks will provide an attractive outlook for residents;
- the landmark tower will maximise views for all apartments, with district views available from the building towards the Sydney CBD to the south-east and south towards Five Dock and Botany Bay;
- facades will form a pattern and rhythm that will give the streetscape a distinctive pattern and character; and
- the non-residential uses (including a potential cafe) will provide an attractive outlook for residents.

It is recognised that the development will have an immediate visual impact on the locality, however it is considered acceptable given that the area is transitioning, and the proposal will provide a landmark building that will denote the entry into the Macquarie Park Corridor. Visual impacts from surrounding low density residential areas are absorbed by the topography of the locality and the presence of mature vegetation. Where view impacts do arise as a result of the proposal, they will be mitigated through building articulation and architectural design as well as the use of sympathetic colours and materials as shown in **Figure 36**.

Figure 36 – Photomontage demonstrating how building articulation, architectural design, colours and landscaping will mitigate against potential view impacts.

Source: Ivolve Studios

6.11 Internal Residential Amenity

The built form of the proposed development is appropriate to the site, with the ability for the design of the future residential apartments to define the public domain and positively create a streetscape character. The proposed building envelopes provide internal amenity and outlook.

6.11.1 Building Separation / Visual Privacy

The Residential Flat Design Code (RFDC) recommends a range of building separation distances depending on the height of buildings. These controls are framed around the objectives of maintaining acoustic and visual privacy, controlling adverse overshadowing impacts, promoting daylight access and providing for adequate open space and deep soil zones within a site, as well as modulating built form as height increases.

As indicated in the building separation diagram at **Figure 37**, compliance can generally be achieved, however there are some instances where the proposed separation distances do not meet the recommended controls in the RFDC, notably between Buildings Y and M and Buildings W and C. It is also anticipated that compliance will not be achieved between the concept envelopes for Buildings L and D. It is noted that the peer review by eminent architect Ken Woolley acknowledges the practical difficulties of achieving full compliance with all RFDC "Rules of Thumb" in apartment buildings.

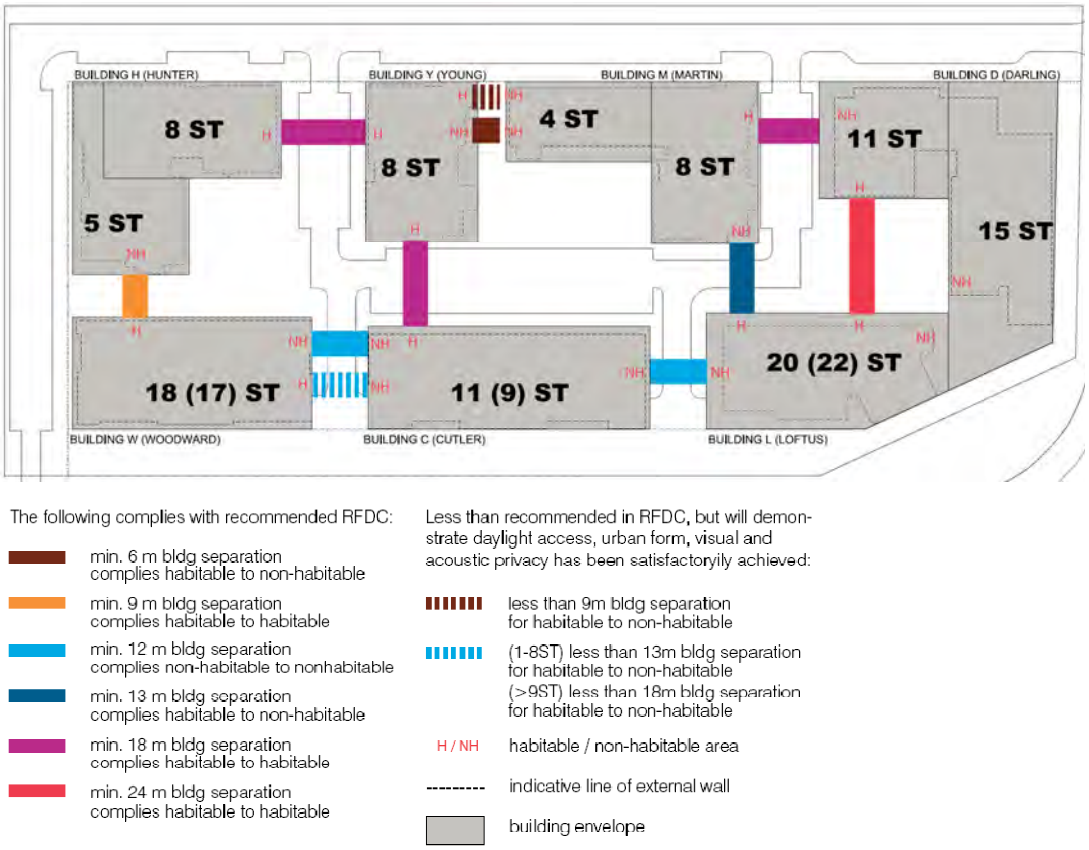

Figure 37 – Building separation diagram
Source: AJ+C

Notwithstanding the numerical variations from the recommended separation distances, it is considered that the proposed separation distances are suitable given the circumstances of the site and given that the total site development is able to meet the key objectives of the requirements. **Figures 38** and **39** demonstrate how these objectives will be maintained. As detailed in the Urban Design Report at **Appendix J**, similar measures will be adopted at the Development Application stage for Stage 2 to mitigate against the reduced building separation distances between Buildings L and D. In summary:

- the separation distances do not affect the ability of the indicative floor plates to demonstrate compliance with the daylight access "Rule of Thumb" under the RFDC;
- the Stage 1 Project Application and Concept Plan provides a range of open spaces within the site and between buildings. This enables buildings to be framed around key areas of common open space; and
- where a variation in building separation is sought, the development will rely on design features to protect visual and acoustic privacy, such as:
  - off-setting of windows;
  - use of privacy screens; and
  - eliminate overlooking from balconies.

Finally, as detailed below, the separation distances proposed do not affect compliance with solar access or acoustic privacy requirements.

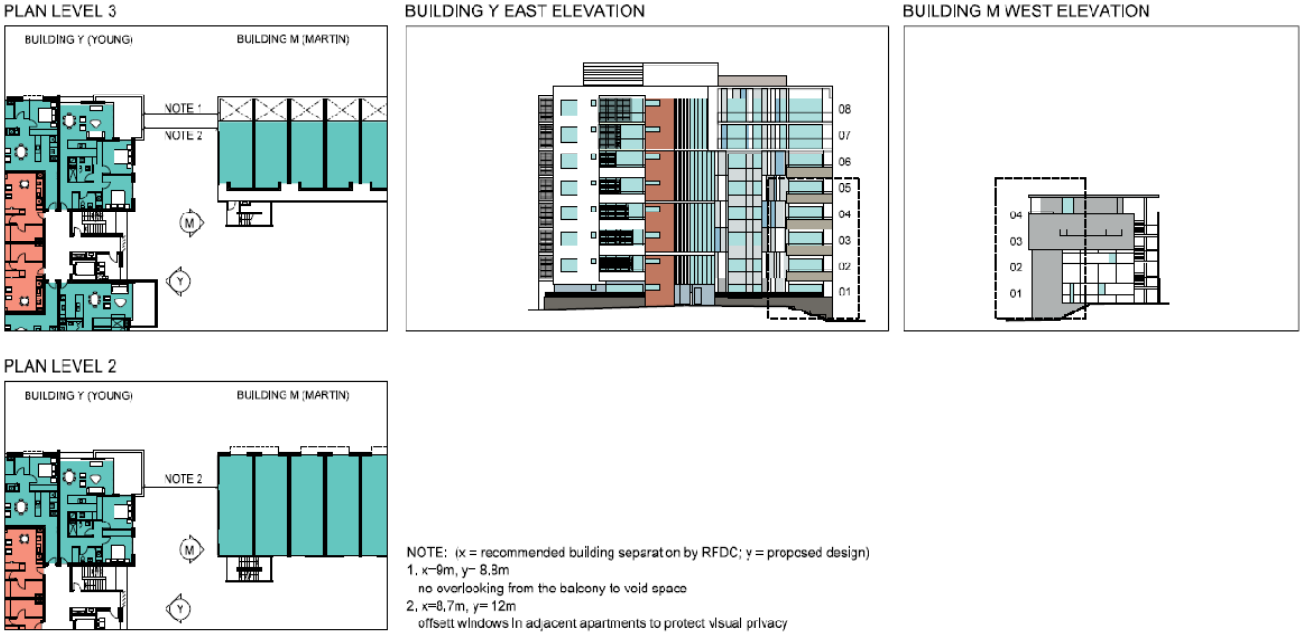

Figure 38 –Demonstration of how the proposed separation distances between Buildings Y and M will maintain the objectives of the RFDC "Rules of Thumb"

Source: AJ+C

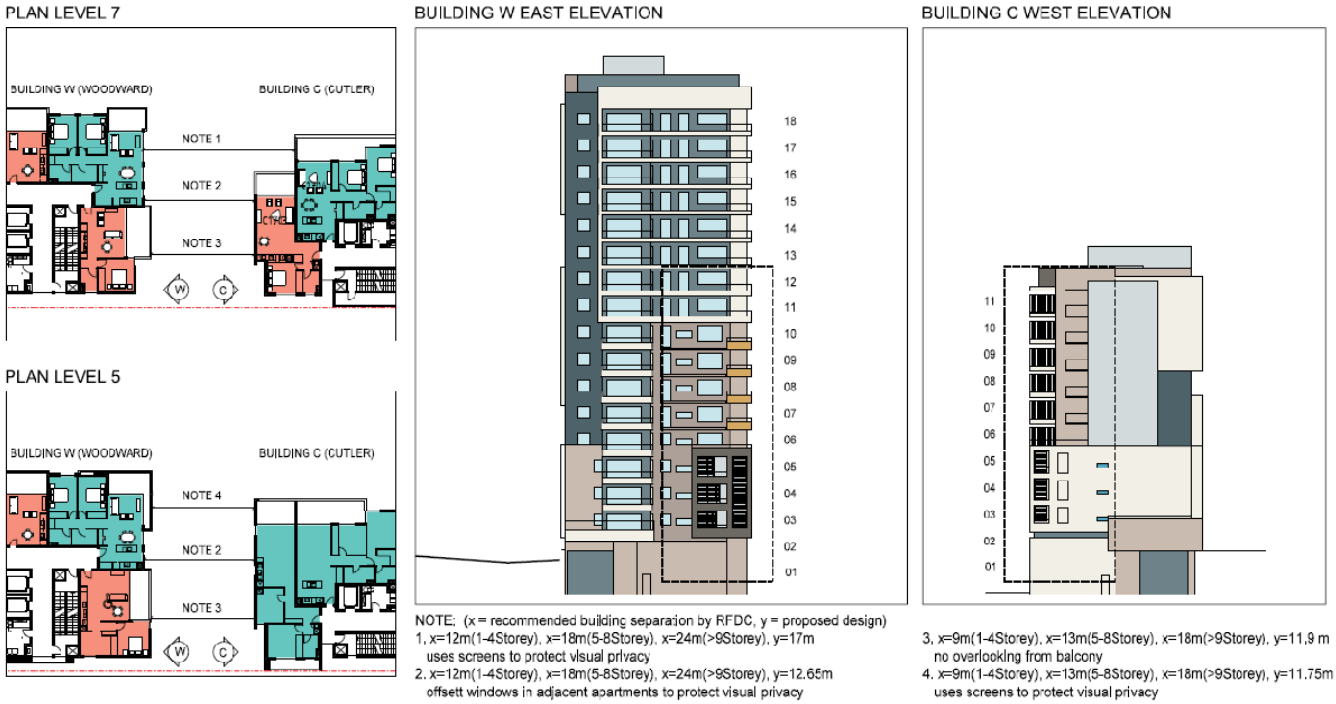

Figure 39 – Demonstration of how the proposed separation distances between Buildings W and C will maintain the objectives of the RFDC "Rules of Thumb"

Source: AJ+C

6.11.2 Solar Access

An assessment of the proposed (Stage 1) and indicative (Stage 2) development against the relevant provisions of SEPP 65 are provided in AJ+C's Concept Plan Design Report at **Appendix J**. The relevant provisions of the RFDC are discussed in detail below.

Direct Sunlight

The spatial layout of the Concept Plan and Stage 1 Project Application building envelopes aim to maximise the direct sunlight reaching unit living rooms and balconies. The proposed Stage 1 and indicative Stage 2 floor layouts demonstrate the actual and indicative daylight access for the development. Concept Plan approval is not sought for the indicative floor layouts for Stage 2 of the development, but they are included to enable an informed assessment of the Concept Plan envelopes. The indicative and proposed floor layouts demonstrate that for the Stage 1 Project Application 73% of apartments will receive 3 hours of sunlight in mid-winter to private open spaces and 2 hours of daylight into living areas. For the Stage 2 Concept Plan, 72% of apartments will receive 3 hours of sunlight in mid-winter to private open spaces and 2 hours of daylight into living areas.

Under the RFDC, the "Rules of Thumb" for daylight access suggest a minimum of 70% of apartments should receive at least two hours of direct sunlight during mid-winter within denser urban environments. **Figure 40** demonstrates that the proposed and indicative design scheme can achieve this requirement across the site. As detailed above the majority of apartments (73%) will receive direct sunlight access for 2 hours mid-winter. However one building will have less than 70% of apartments achieving this level. Whilst one building is below the 70% "Rule of Thumb", it is noted that the "Rule of Thumb" should be read on a site wide basis and take into account the orientation of the site. Optimum compliance is achieved across the development.

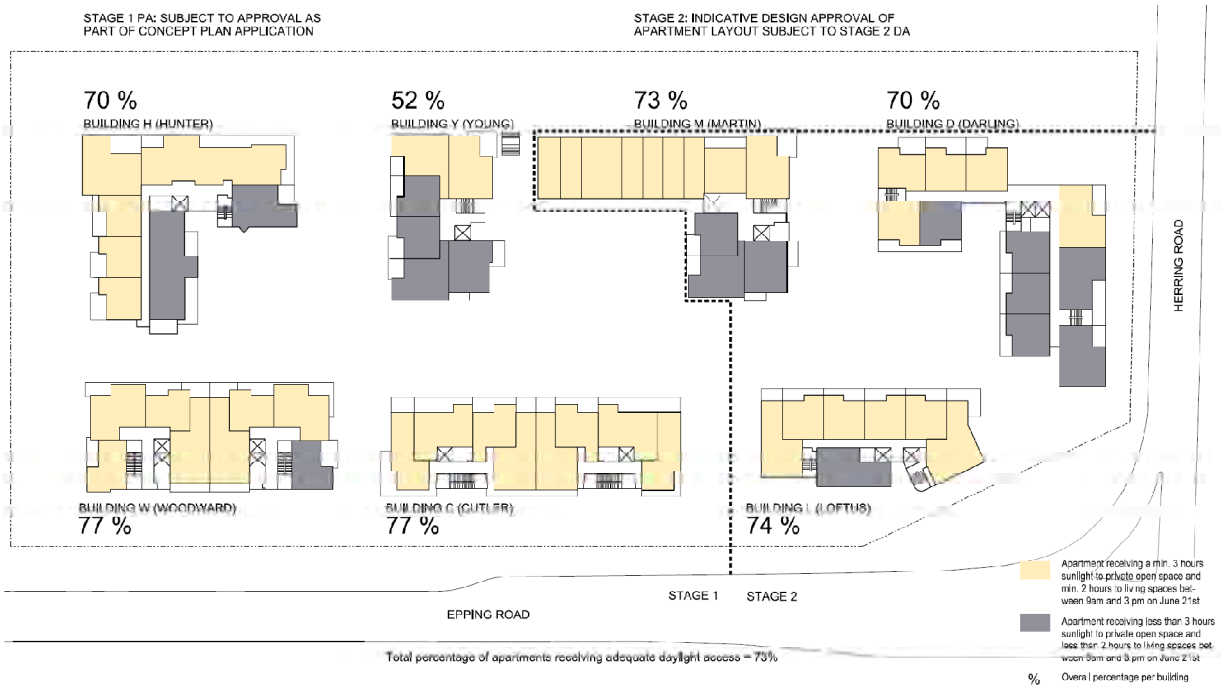

Figure 40 – Proposed and indicative floor plates and sun access during mid-winter
Source: AJ+C

Daylight Access

In addition, the RFDC recommends that a maximum of 10% of dwellings have a single southerly aspect (south-west to south-east). The proposed and indicative floor layouts at **Figure 41** show that overall, approximately 4% of apartments across the development site are single aspect, south facing.

The RFDC control is designed to supplement the direct sunlight access control above. The objective of the "Rule of Thumb" is to maintain daylight access whether this be direct sunlight or diffuse light from the sky. Notwithstanding that a small portion of apartments in some buildings will contain south facing single aspect apartments, it is considered that suitable daylight access will be afforded to the development as:

- on each indicate floor across the development site, the majority of south facing units are orientated towards open spaces, or are located on the Epping and Herring Road boundaries of the site, meaning that the majority of south facing apartments do not face a building opposite. This results in suitable separation from other buildings and a more open aspect that allows diffuse daylight penetration to occur;
- the indicative floor layout demonstrates compliance with the direct sunlight rule of thumb, by providing a minimum of two hours sunlight to 73% of Stage 1 and 72% of indicative Stage 2 apartments between 9am and 3pm mid winter. In the hierarchy of recommended "Rules of Thumb", attainment of this control is considered a desirable "Rule of Thumb" to achieve; and
- consideration of the overall factors affecting amenity should be weighed up when considering the suitability of single aspect south facing apartments. In this context, a high proportion of these single aspect apartments have ample outlook towards the south, south-east and south-west, thereby enhancing the amenity of these apartments.

The indicative and proposed floor plans are capable of meeting the "Rule of Thumb". Further, it is considered that the single aspect south facing apartments will receive adequate diffuse daylight and have other factors such as views that enhance amenity.

Figure 41 – Proposed and indicative floor plates showing single aspect apartments
Source: AJ+C

6.11.3 Cross Ventilation

The proposed Stage 1 Project Application layouts aim to maximise the number of apartments that will achieve cross ventilation. The layouts demonstrate that 67% of Stage 1 apartments will achieve cross ventilation (refer to **Figure 42**).

The RFDC suggests a minimum of 60% of apartments achieve cross ventilation. Whilst in some buildings more than 60% of apartments will achieve cross ventilation, other buildings will have less than 60% achieve this level. In instances where the "Rules of Thumb" for cross ventilation are not satisfied, the buildings with lesser compliance have other factors that significantly enhance amenity, such as views.

Figure 42 – Proposed and indicative floor plates demonstrating compliance with cross ventilation requirements. Source: AJ+C

The results of the indicative design of Stage 2 have not been included, as the detailed design of Stage 2 could yield differing results. As an example, specific design features such as ventilation 'breaks' and risers, and corner apartments can be designed into specific floor plates at the project application stages to increase compliance on individual buildings.

Natural Ventilation

The RFDC "Rules of Thumb" also recommends that 25% of kitchens should be naturally ventilated. The proposed and indicative floor layouts demonstrate that 21% of Stage 1 apartments, and 38% of indicative Stage 2 apartments can achieve natural ventilation to kitchens. Whilst the floor layouts are generally compliant, variations are considered acceptable as the rule of thumb does not take into consideration modern apartment layouts, where 'galley' style kitchens make compliance with this requirements impractical.

6.11.4 Single Aspect Apartments

The RFDC also suggests that single aspect apartments should be limited in depth to 8m from a window. If this cannot be achieved, it must be demonstrated that satisfactory daylight and natural ventilation can be achieved. The proposed and indicative Stage 1 and Stage 2 floor layouts show that the majority of single aspect apartments are extended to 9-10m from a window.

In these instances, non habitable wet areas (such as laundries and bathrooms) are located within the 1-2m extended zone, eliminating any amenity impacts on habitable spaces.

6.11.5 Private Open Space

The proposed Stage 1 Project Application seeks to maximise private open space to ground level apartments. The layouts indicate that 30% of Stage 1 apartments will achieve the RFDC "Rules of Thumb" (refer to **Figure 43**). Stage 2 of the development will be assessed against this "Rule of Thumb" at detailed design stage.

The RFDC suggests that that the minimum recommended area of private open space for each apartment at ground level or on a structure such as a podium car park is 25m^2, with a minimum preferred dimension in one direction of 4m. 30% of Stage 1 apartments are able to achieve this control, with a further 61% able to achieve the minimum 4m dimension requirements. Only 9% seek to vary both the size and dimension requirements of the "Rule of Thumb". This is considered acceptable given the prevalence of publicly accessible open space available for residents of the development. The proposal is also capable of complying with the deep soil "Rule of Thumb" of the RFDC, with over 25% of the open space areas providing deep soil planting.

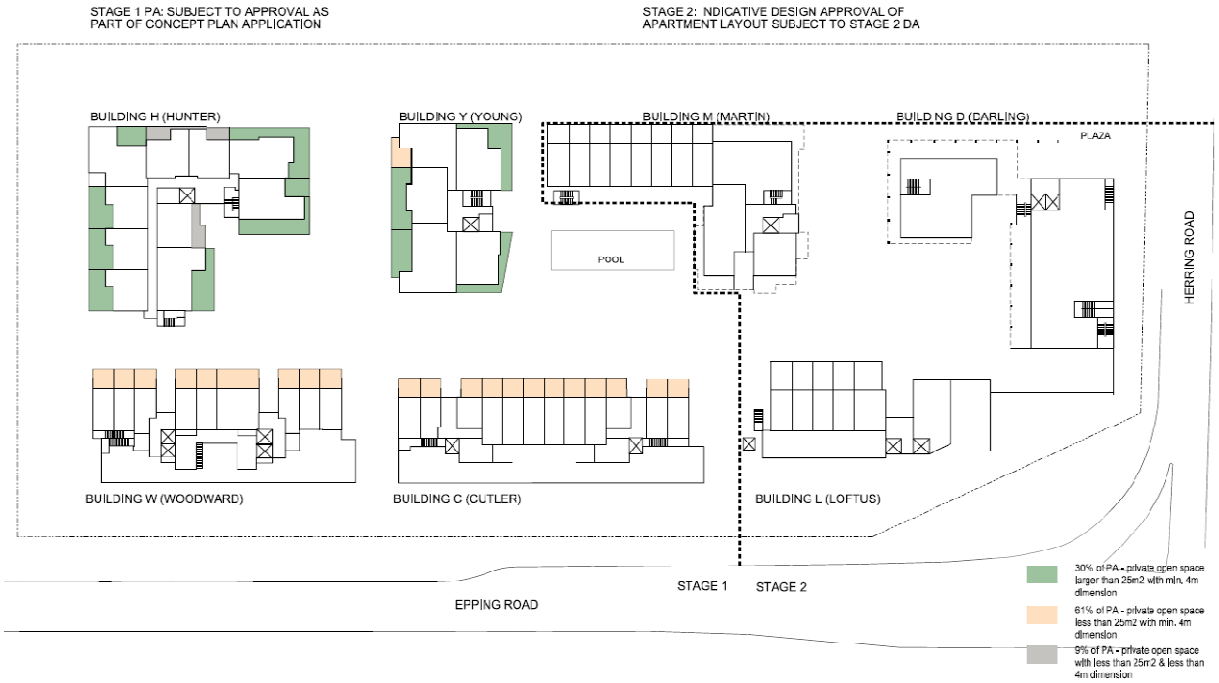

Figure 43 – Private open space at ground level for Stage 1
Source: AJ+C

6.11.6 Acoustic Performance

An Noise Impact Assessment has been prepared by Acoustic Logic in regards to the potential noise impacts on the proposed Concept Plan and Project Application (refer to **Appendix S**). The Noise Impact Assessment found that the site is impacted by noise from road traffic, and it is likely that some noise mitigation measures would be required for some of the residential buildings. Acoustic Logic recommends that mitigation measures including the use of thicker glazing and acoustic wall insulation be incorporated to minimise acoustic impacts.

The Acoustic Assessment is discussed further in Section 6.15.

6.11.7 Crime and Public Safety

The Concept Plan and Stage 1 Project Application implement the principles of Crime Prevention Through Environmental Design (CPTED), as identified in the Department of Planning guideline titled *Crime Prevention and the Assessment of Development Applications* (2001) as follows:

Principle 1 - Natural Surveillance

As noted in *Crime Prevention and the Assessment of Development Applications*, good surveillance means that people can see what others are doing. People feel safe in public areas when they can easily see and interact with others. Would-be offenders are often deterred from committing crime in areas with high levels of surveillance.

In accordance with this principle, the Concept Plan provides surveillance. The non-residential uses located along the new local street and Herring Road will provide a degree of active surveillance, with non-residential uses generating a degree of activity that will enable people to casually observe what others are doing. This will encourage a perceived sense of security for people in the plaza and the communal open spaces beyond, and will deter potential offenders.

Stage 1 of the proposal has been designed to provide passive surveillance over communal open spaces and courtyards within the development, with windows from bedrooms and living areas viewing these open spaces. The development has also been designed to avoid blind corners and hidden spaces. Similarly, SOHO apartments will overlook the internal roads, activating the site during the day when many residents would be at work. This will promote the reality and / or perception that the streets and plaza are under casual surveillance during both the day and night. This acts as a way of creating the perception of risk in the minds of potential perpetrators.

The internal road will also enhance passive surveillance on the site. The presence of motorists, and the provision of lit footpaths, will enhance a sense of security for people using the communal open spaces.

Principle 2 - Access Control

Access controls use physical and symbolic barriers to attract, channel or restrict the movement of pedestrians. As noted in *Crime Prevention and the Assessment of Development Applications*, effective access controls make it clear where people are permitted to go or not go, and makes it difficult for potential offenders to reach and victimise people and damage property. Illegible boundary markers provide excuses for being in restricted areas.

The general public will be free to enter the site and use the communal open spaces. However, planting around the buildings will delineate between the public and private domain. The proposed landscaping is of a formal / ornamental nature that is consistent with private gardens rather than public spaces.

All of the entry points into the buildings are located in areas which will be subject to high user traffic, as well as surveillance from passing pedestrians and vehicles. This will ensure that people entering and exiting the buildings can be clearly seen from communal open spaces and adjoining buildings, and monitored if necessary.

Principle 3 - Territorial Reinforcement

Territorial reinforcement refers to the clear identification of public spaces, and the creation of a sense of community ownership over such spaces. As noted in the *Crime Prevention and the Assessment of Development Applications* people feel comfortable in, and are more likely to visit, places which feel owned and cared for. Well used places also reduce opportunities for crime and increase risk to criminals.

Boundary landscaping around the buildings will differentiate public and private spaces. The provision of security-controlled entrances to the buildings and basement car park will also emphasise the separation of the public and private domain. The proposed communal open spaces will incorporate differences in paving, planter boxes, street furniture and formally laid out gardens that will provide a clear indication of a cared for and well maintained space.

Principle 4 – Space Management

Space management refers to providing attractive, well maintained and well used spaces. As noted in *Crime Prevention and the Assessment of Development Applications*, space management strategies include site cleanliness, rapid repair of vandalism and graffiti and the removal of damaged physical elements.

Durable and high-quality materials are proposed which will ensure that minimal maintenance is required for the proposed development. The use of varied facade treatments and the provision of landscaping at the boundaries of the site will also discourage graffiti or vandalism of the building facades.

The communal grounds will be well-maintained by a landscaping contractor and the maintenance of the buildings will be controlled by the management of the site. The continued maintenance of the building and its grounds will ensure that it does not become degraded and will ensure that vandalism of the property is strongly discouraged.

Design Features

In addition to the adherence of the proposal with the above principles, the proposal minimises opportunities for concealment through the provision of lighting in the communal open spaces, and lit footpaths on the internal roads, which will prevent concealment, while being controlled so as not to result in amenity impacts at night. The illumination of the internal streets will also provide safety for people accessing vehicles parked on the street.

A number of security devices will be incorporated into the development. These features include:

- each building will be equipped with an electronic security system which controls access using proximity card readers. Readers will be installed at key points on the site including the main entry, the entry to each residential unit and the entry / exit points of the residential car parks;
- PIR detectors will be installed within the common areas, lift lobbies and at the ground floor of each building; and
- a CCTV system monitoring the entry and exit to the car parks, lift lobbies, car parks and gymnasium / pool areas.

A fuller detailed assessment of the Stage 2 development, including the proposed non-residential uses, against the CPTED principles will form part of that Development Application.

6.12 Solar Access and Overshadowing

Whilst Daylight Access (Residential Flat Design Code 'Rule of Thumb') has been assessed above in Section 6.11.2, this section addresses the overshadowing effect of the proposed development on the communal open spaces and adjoining development. The assessment is based on shadow diagrams prepared by AJ + C (refer to **Appendix A**). The shadow analysis for the Stage 2 component has been based on the indicative design of these buildings (rather than a building envelope) and includes indicative balconies, plant zones, railing, stair overruns and the like.

Impacts on Communal Open Space

Whilst some of the communal open spaces will be subject to overshadowing at some points during the day, adequate solar access will be achieved to the majority of spaces, with shadowing decreasing into the afternoon period at the winter solstice. Even at 3pm in the afternoon on the winter solstice, a proportion of the communal spaces (32%) will retain solar access. Whilst the pool garden is in shadow all day at the winter solstice, residents would be unlikely to use the pool during the winter months.

At both the equinox and summer solstice, the majority of the open spaces will receive direct sunlight from midday, well into the afternoon. At midday on the summer solstice, 85% of internal communal spaces will receive solar access. The development has been orientated, not only to achieve the best urban design outcome for the site, but also to maintain as much solar access as possible, with lower buildings located along the site's north-western and north-eastern boundaries to allow solar penetration. Taller buildings are located on the site's south-western boundary, where they create no significant overshadowing impact.

Impacts on Adjoining Development

Building heights have also been carefully chosen to mitigate overshadowing effects on adjoining developments. The location of the taller buildings on the site's south-western boundary means that shadows primarily fall across Epping and Herring Roads rather than neighbouring properties. As detailed below, whilst the proposal will have some overshadowing impacts on properties to the south-west and south-east, solar access requirements can still be achieved.

The orientation of the site means that there will be no overshadowing impacts on properties to the north, north-east and north-west. The shadow diagrams indicate that there will be the following impacts on adjoining developments to the south, south-east and south-west:

Development to the South

Due to the width of Epping Road, and the separation it provides between the site and surrounding low-density residential development, properties to the south of the site (on the corner of Epping and Herring Roads diagonally opposite the site) will not be overshadowed at any time of the year by the proposed development. Whilst the front garden of 133 Herring Road will be partially overshadowed between 11am and midday on the winter solstice, by 1pm solar access will be reinstated.

Development to the South-East

Development to the south-east of the site, on the opposite side of Herring Road, will be subject to some overshadowing. Again, the separation distance created by Herring Road helps to ameliorate any impacts. The proposal will overshadow two of the four apartment buildings from 2pm onwards on the winter solstice, however they are still able to achieve solar access between 9am and noon and so maintain minimum solar access requirements.

At the equinox, only one of the four buildings will be overshadowed at 2pm, with three of the four buildings experiencing some overshadowing impact at 3pm. None of the buildings will be overshadowed between 9am and noon and so again, a minimum of 3 hours will be achieved. None of the dwellings to the south-east of the site will be overshadowed at any time of the day on the summer solstice.

Development to the South-West
Overshadowing impacts on commercial and residential developments which lie directly south-west of the site, on the opposite side of Epping Road, will again be minimised by the width of the carriageway. Shadows cast by the proposal on the winter solstice and March equinox will not impact on properties to the south-west from noon onwards, ensuring morning sun during the critical winter period is still achieved. The proposal will have no impacts on development to the south-west of the site on the summer solstice.

6.13 Wind Impact

A Wind Effects Statement has been prepared by Vipac Engineers and Scientists Ltd (**Appendix W**) to assess the impact of the proposed Concept Plan and Project Application on the local wind environment.

The assessment has been carried out based on experience with similar situations in Sydney and around the world. Whilst wind tunnel testing has not been conducted for the proposed development, Vipac considers that previous tests carried out for developments of a similar scale (and with similar exposure to that of the proposed development site) serve as a valid reference for the prediction of wind effects.

The proposal has been assessed against the recommended wind comfort and safety criteria, with reference to gust and mean velocity criteria. The general objective for the development is for wind criteria to be at or below: 16m/s (acceptable for walking) on public footpaths, 13m/s (acceptable for standing) at building entrances and acceptable for safety on building balconies.

Impact Assessment

As a result of the proposal being significantly higher than the immediately surrounding buildings it will act as a wind catcher. The effects of this will be felt most on the north sides of proposed Buildings L and W (refer to **Figure 44** below for reference). However, because these buildings have balconies, high wind speeds at ground level will be reduced, thereby maintaining pedestrian comfort. Further assessment of pedestrian level wind effects found that, with most winds in Sydney prevailing from the north-east, Buildings H, Y, M and D will catch the wind, with the once a year hourly wind speed reaching 12-15m/s at a height of 10m. The north-east wind flow on the northern facade will produce a downwash effect on the ground level, however as noted above, wind speeds at ground level will be mitigated by balconies on the north facades, which will help break down and dissipate wind energy before reaching ground level. Notwithstanding this, there will be a channelling flow on the footpath between Buildings H and Y as well as between Buildings M and D. Without mitigation, the flow in these areas is expected to accelerate. To reduce the channelling flow, it is recommended that plantations be located on the windward side to reduce wind speed.

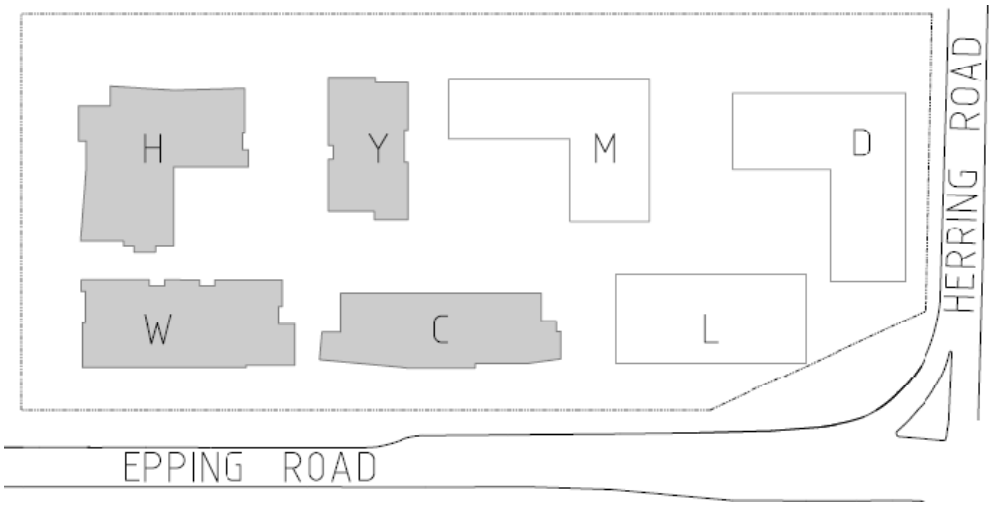

Figure 44 – Proposed building layout and building names
Source: AJ+C

The assessment has also considered wind approaching from the south-west, which is also strong. The once a year hourly wind speed will reach 12-15m/s at a height of 10m. The wind at ground level will be accelerated by downwash and channelling flows. Again, these downward flows will be minimised at ground level by the balconies on the south face of the buildings and awnings above building entrances. The channelling flow created by southwest flows will be between Buildings W and C and Buildings C and L. Whilst the channelling flow from these directions may reach the walking criteria without wind control mechanisms, by using plantations on the south-east and south-west boundaries of the development, it is expected that the wind at pedestrian level will be slowed. Further, the wind from the south will have an effect on building corners, by creating corner accelerations without wind mitigation. However, the installation of rough facade surfaces, such as balconies and plantation on the south-east and south-west boundaries, is expected to mitigate these corner accelerations at ground level.

The assessment has also taken into account wind approaching from the west which, although lesser in magnitude, the angle at which it approaches makes corner acceleration a more significant factor. Once again, the wind speed at these locations can be reduced by using plantations close to the corners of buildings to avoid the direct wind flow to the corner of the building at ground level.

Finally, Vipac has considered the potential wind impacts on balconies. Vipac has recommended that balconies should meet the criterion for safety, which is considered appropriate given that the areas are not public spaces and the use of these areas is optional. Further experience suggests that many similar developments in Sydney experience wind conditions on balconies that are in the vicinity of the criterion for safety. Whilst generally, wind conditions will be acceptable for outdoor recreation on the apartment balconies, on high wind days, wind conditions could be close to, or exceed the criterion for safety on balconies at elevated levels for Buildings W, D and L. Measures that can be employed to mitigate against potential wind impacts include balustrade heights, installing planter boxes and using dividing screens, which have been incorporated into the Stage 1 plans.

Recommendations

The study has found that the proposed development is not expected to generate wind conditions in excess of the recommended wind comfort and safety criteria with the provision of:

- plantation on Epping and Herring Roads and north-eastern boundaries;
- balconies on the south facades;
- balconies or equivalent surface roughness features to the facade between Buildings Y and M as well as between Buildings M and D;
- increased balustrade heights; and
- dividing screens.

These measures have been adopted by AJ+C and Oculus in their Stage 1 drawings (refer to Architectural Plans and Stage 1 Landscape Plans at **Appendix A** and **K** respectively). Vipac has also recommended that the effectiveness of the proposed wind control mechanisms outlined in the assessment above be validated and finalised during the detailed design stage, prior to the issue of a Construction Certificate.

6.14 Tree Removal and Ecological Impacts

As detailed in Section 4.2, the proposed development requires the removal of 168 trees. An Arborists Report has been prepared by Earthscape Horticultural Services (**Appendix E**) to assess the condition and significance of the 243 trees located on or adjacent to the site, and the impact of the development on these trees. The majority of the trees have a low or very low retention value. The retention value of the 168 trees that are proposed to be removed is outlined below:

- 121 have a low or very low retention value;
- 11 have a moderate retention value;
- 25 palm trees of various species have a moderate retention value;
- ten (10) Cocos Palms, are considered a Nuisance Species; and
- one (1) tree has a high retention value.

Whilst one tree of high retention value if proposed for removal, as detailed in the Flora and Fauna Assessment prepared by Total Earth Care (refer to **Appendix F**) there will be no impact on any endangered ecological communities as a result of the development.

Impact Assessment

The Flora and Fauna Assessment found that the original vegetation community on the site is Sydney Turpentine Ironbark Forest (STIF). STIF is a listed endangered ecological community under the *Threatened Species Conservation Act 1995.* Whilst there are several planted trees on the site which are representative of the STIF community, only one tree, a *Syncarpia glomulifera*, has been identified as a remnant STIF tree, and is required to be removed to accommodate the proposed development. Whilst the tree is in reasonable structural health, it is isolated, and whilst the NSW Scientific Committee's definition of STIF as an endangered ecological community (EEC) includes individual remnant trees, the *Environmental Protection and Biodiversity Act* (EPBC Act) states that remnant STIF must be greater than 1ha in size and must include characteristic components from all structural layers.

The remnant Turpentine is not part of an area of trees that is greater than 1ha and other structural layers are not present, and so it does not represent a community for the purposes of the EPBC Act.

Whilst the tree is listed as having a High Retention Value, it shows evidence of decline and is not considered sustainable in its current location in the long term. The disturbed soil profiles, small size of the remnant area, lack of resilience, lack of significant connectivity, absence of fully structured native plant community, very poor species diversity and absence of basic ecological processes makes the conservation value of the STIF occurring on the site low. Furthermore, its central location on the site makes its retention problematic with any future development of the site requiring its removal.

Notwithstanding this, and because the Scientific Committee's Final Determination for STIF as an endangered ecological community suggests that a single tree specimen can be considered representative of an EEC on a site, an Assessment of Significance (7-part test) has been conducted. The Assessment concluded that the impact of the proposed development on STIF located within the study area is not significant, as no threatened flora and fauna species were recorded on site and fauna habitat is poor. Further, the likelihood of threatened fauna species utilising the site for key aspects of their lifecycle is considered to be very low. As a result, no further assessment is required.

Finally, the assessment has considered the impact of the proposal on Fauna. Whilst one native species of vertebrate fauna was identified during the site survey, no threatened fauna species, or significant habitat for any threatened fauna species was identified. The site lacks natural features and resources that are important to the maintenance of native fauna diversity, and is considered to have a low level of fauna habitat value.

Recommendations

As many trees as possible have been retained outside of the construction zone. To ensure that the retained trees are protected throughout the construction process, a Tree Management Plan has been prepared as part of the Arborists Report (**Appendix E**) which puts forward a number of measures that will be implemented, including the installation of fencing and the ongoing monitoring of tree health.

A number of other recommendations have been put forward by both the Arborist's Report and the Flora and Fauna Assessment, including:

- the loss of amenity resulting from the removal of trees to accommodate the proposed development should be offset with a minimum of 20 new trees capable of attaining a height of 13m at maturity to be planted within the site;
- any landscaping or revegetation works are to incorporate locally indigenous native plant species, including those that are characteristic of STIF; and
- native trees or limbs of trees that are removed as part of the clearing for the current proposal should be mulched and used on site in rehabilitation or landscaping works, for temporary sediment and erosion control during construction, or as habitat features in any restoration works.

These recommendations have been incorporated into the draft Statement of Commitments at Section 7.

6.15 Noise Impact

A Noise Impact Assessment has been prepared by Acoustic Logic in relation to the proposed Concept Plan and Stage 1 Project Application (refer to **Appendix S**). The site has identified and investigated the following noise sources:

- environmental noise impact on the future of the site, including traffic noise from surrounding roadways;
- noise emissions associated with traffic generated from the site; and
- noise emissions from the site including mechanical plant noise to surrounding receivers.

Noise Criteria and Guidelines

The Noise Impact Assessment assesses the Concept Plan and Stage 1 Project Application against the following relevant criteria and guidelines:

- State Environmental Planning Policy (Infrastructure) 2007;
- AS2107:2000 Acoustics – Recommended design sound levels and reverberation times for building interiors;
- AS3671-1989 Acoustics—Road traffic noise intrusion—Building siting and construction;
- Interim Guidelines for Development Near Rail Corridors and Busy Roads; and
- DECCW's Industrial Noise Policy.

Representative Ambient Noise and Background Noise

The existing environmental noise sources affecting the site include:

- the development is affected by environmental noise predominantly from traffic noise from Epping Road which carries high volumes of traffic;
- Herring Road to the south-east carrying medium traffic volumes; and
- other surrounding boundaries are neighboured by existing residential buildings.

The current acoustic environment was surveyed in order to determine the existing acoustic impacts on the site. The study found that background noise is dominated by vehicular traffic movements.

DECCWs Industrial Noise Policy provides guidelines for assessing noise impacts from development sites. DECCWs policy contains both amenity and intrusiveness criterion, with the general intent being to protect residents from sleep arousal. The amenity criteria are designed to limit the absolute noise level from all industrial noise sources to a level that is consistent with the general environment. The intent of the intrusiveness criteria is to limit the audibility of noise emissions at residential receivers, requiring that noise emissions do not exceed background noise levels by more than 5dB(A). Further, land uses with the potential to create additional traffic on local roads should also comply with the requirements outlined in the Environmental Criteria for Road Traffic Noise (ECRTN). The intrusiveness, amenity and sleep arousal criteria for the proposal have been determined using these guidelines and the results of the noise monitoring.

Table 10 details the adopted noise level criterion for properties surrounding the site.

Table 10 – Noise Objectives for Surrounding Receivers

Location	Day time noise objective dB(A) Leq	Evening noise objective dB(A) Leq	Night time noise objective dB(A) Leq	Noise objective for intermittent activities dB(A) L_1 (1 min) (Background + 15dB(A))
Properties on Epping Road	53	45	40	55
Properties on Herring Road	52	45	40	53
Neighbouring Properties to the rear of the Site	49	45	39	49

Noise Impact Assessment and Recommendations

As the proposed development includes basement car parking and the use of internal roads, the development is required to comply with the ECRTN criterion. The impact of additional traffic noise generated by the development was assessed for both surrounding residents, and future residents of the site. Based on traffic data provided by Traffix, the predicted worst case noise increases were determined. The assessment found that any increased traffic flows associated with the development would result in either no noise increases, or compliance with DECCWs industrial noise criteria for increased traffic volumes on surrounding roadways, and would not adversely impact on the acoustic amenity of surrounding residential receivers.

As the site is located adjacent to Epping Road, which carries more than 40,000 vehicles per day, compliance is required with NSW *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP). The internal noise level criteria set out in the Infrastructure SEPP are consistent with the recommended internal noise levels of the Australian Standards AS2107:2000 and AS3671-1989. Experience with similar projects indicates that compliance with internal noise level criteria detailed in the Infrastructure SEPP is possible and practical subject to the recommendations in the report. The report recommends that the external façade of the development be acoustically treated where necessary, to ensure internal noise levels comply with the specified noise criteria. This will be achieved by upgrading glazing and other façade elements based on noise level measurements conducted at the site. Whilst glazing details will be finalised as part of the Construction Certificate for each stage, typically, the required upgraded glazing for acoustics will include 6.38mm or 10.38mm laminated glazing. The report notes that masonry and other high mass elements of the façade will not require additional acoustic treatments, with light weight wall construction including acoustic insulation and the like, to ensure internal noise level criteria are achieved. Finally, because the site is located greater than 60m from the railway corridor, no assessment of noise or vibration impacts from train movements is required. Based on the assessment, the report concludes that the Stage 1 Project Application will comply with all relevant noise and vibration criteria and sets glazing performance standards to achieve compliance for
Stage 2.

The report has also considered acoustic impacts from mechanical plant equipment. Whilst detailed plant selections have not yet been made (and further assessment will be conducted prior to the issue of a Construction Certificate) it is expected that standard acoustic measures will be sufficient.

Acoustic treatments which can be used to mitigate against mechanical plant noise include lining of ductwork, acoustic silences, variable speed controllers, time switches and acoustic screens.

Whilst the retail / commercial component of the development will form part of Stage 2 of the development, the report has put forward recommendations for how future retail / commercial tenancies can minimise acoustic impact to existing and future residential properties. These include:

- locating seating below awnings and overhangs to limit noise impact to residence above;
- limiting the number of seats within the courtyard;
- locating external areas where noise transmission is limited; and
- limiting deliveries and waste removal to day time hours.

Acoustic Logic has also prepared a Construction Noise and Vibration Management Plan, which is discussed at Section 6.26 and **Appendix HH**.

Overall, the Noise Impact Assessment demonstrates that Stage 1 compliance with the set noise criteria and Infrastructure SEPP, and sets the relevant performance standards for Stage 2 and Construction Certificate documentation to comply with.

6.16 Social Issues

Hill PDA have been engaged to prepare a Social Impact Assessment (SIA) to examine the social implications of the Concept Plan and Project Application (refer to **Appendix G**). The main social considerations are summarised below.

6.16.1 Housing Supply and Choice

The Stage 1 Project Application is seeking approval for the following mix of housing across the site:

- maximum 52% one bedroom apartments;
- minimum 38% two bedroom apartments; and
- minimum 10% three bedroom apartments.

The housing mix proposed within the site is suitable given the demographic trends and the realities of the housing market in the Primary Area of Influence, (PAI - which comprises the suburbs of Macquarie Park, North Ryde and Marsfield) Ryde LGA and the wider Sydney region. As detailed in Section 2.6, the PAI has:

- an average household size of 2.5 persons;
- a lower proportion of family households (63.8%) compared to Sydney (72.7%) and NSW (72.1%); and
- a higher proportion of lone person households (28.3%) compared to Sydney (23.1%) and NSW (24.2%).

A similar mix for Stage 2 is proposed although this will be confirmed in the detailed Stage 2 Development Application.

More specifically, the housing mix is suitable as it adds to the diversity of housing stock, particularly when compared to development to-date in the Ryde LGA and PAI, whilst reflecting recent demographic and market trends in the area.

Whilst based on statistics, the Ryde LGA and PAI appear well provided for in terms of units, when the PAI is considered more closely, it is evident that a large proportion of existing units are either social or student housing, with research confirming that there are few units available on the open market. The proposed dwelling sizes will also ensure more affordable housing options are available in the area, and is consistent with the objectives of the Metropolitan Strategy which calls for dwellings within walking distance of transit nodes, as well as smaller one and two bedroom apartments.

There is a significant need for housing in the Ryde LGA, with the Department of Planning having identified the need for an additional 15,760 dwellings (or 525 dwellings per annum) in the LGA by 2036. The provision of approximately 600 apartments will make a significant contribution to Ryde's annual housing target, being an area that has experienced very low levels of residential development in recent years, and very low levels of housing affordability. The need for additional housing is compounded by rapid population growth in the area, with the rate of dwelling growth failing to keep pace with demand. Between 2001 and 2006, the population of the PAI increased at a significantly faster rate than dwelling growth, with a population increase of 3.11% over the period compared to a 0.77% increase in dwelling numbers.

Housing Affordability

Real estate in the Ryde LGA is relatively expensive, with the average price for a dwelling increasing significantly between December 2009 and June 2010. Properties are deemed 'affordable' if the loan repayments are less than 30% of the household income. Based on this definition, in September 2010 there were no properties available for purchase for those on low incomes, and less than 5% of properties were available for people on moderate incomes. This compares to 16% and 25% for Sydney and NSW respectively.

Hill PDA has noted that increases in property values and rents are generally driven by a shortage of supply and / or a high level of demand. In this regard, the proposed development will help mitigate worsening affordable housing issues by significantly increasing the supply of housing in the locality. Further, the supply of smaller dwellings (with a greater percentage of one bedroom units proposed by the Concept Plan and Project Application) is important in promoting greater housing affordability.

Development to Date

The SIA has examined the availability of sites in the area that are appropriate for redevelopment or intensification. The following significant developments (of 50 or more dwellings) have been identified in the area. In total, there are approximately 2,500 new dwellings proposed in the area, these include:

- 3,450 student units (the equivalent of 1,380 dwellings) under the Macquarie University Concept Plan;
- 557 dwellings proposed at 120-128 Herring Road; and
- 600 dwellings proposed under this Concept Plan and Project Application.

In addition to those developments identified above, there are a number of sites in public ownership within the PAI including TIDC land on Delhi Road, as well as land in the Ivanhoe Place and Herring Road precincts which have the potential to deliver a further 4,000 dwellings. These are considered long term opportunities, and will not be realised in the near future.

The Concept Plan and Project Application makes a significant contribution to the number of proposed dwellings in the Ryde LGA. The need for additional dwellings is highlighted by population forecasts, which indicate that the population of the PAI will increase to 36,185 (an increase of 7,319) by 2036, at a rate of 0.76% per annum. Whilst this is slightly higher than the growth rate between 2001 and 2006 (outlined above), the need for dwelling growth to keep pace with population growth is evident, with the lack of affordable housing partially attributed to a lack of new housing stock.

Demographic Trends

Statistics indicate that the PAI has a lower than average household size, and a higher proportion of lone person households. These figures (outlined in **Table 11**) suggest that there would be a high demand for one bedroom dwellings in the PAI and LGA, and whilst statistically the area appears to be well provided for in terms of apartments, a large proportion of these existing units are either social or student housing.

Table 11 – 2006 ABS Household Characteristics

Household Structure	PAI	Ryde LGA	Sydney	NSW
Lone person households	28.3%	26.7%	23.1%	24.2%
Couple family with no children	44.1%	48.4%	49.3%	46.2%

The type of apartments provided by the Concept Plan and Project Application will ultimately influence the demographic profile of the area. The proposed development, which will provide predominantly one and two bedroom apartments, is likely to meet the needs of lone persons and families without children. Whilst it is expected that these groups will form the predominant household types, some families and students may be attracted to the development.

The scheme is expected to attract young professional singles or couples, together with a significant proportion of older citizens with non-dependent children living at home. It is expected that residents of the proposed scheme will be affluent, with above average weekly household incomes. It is also anticipated that the majority of future residents will be employed in white collar industries, with train links to the City further influencing the demographic of residents.

Access to Jobs and Services

Within the Ryde LGA, there is expected to be a moderate increase in job numbers of 0.93% per annum between 2006 and 2036. The development will be important in providing 'jobs closer to home', which is a key objective of the State Plan. The proposal provides an opportunity to provide a mix of housing choices, close to job opportunities and strategic transport links, thereby reducing car dependency and providing access to other parts of Sydney.

6.16.2 Community Services and Facilities

The impact of the development on existing social infrastructure has been considered as part of the SIA. Unlike the population of the existing hotel on the site, local residents are likely to require access to additional services and facilities. Council's Section 94 Contribution Plan has identified the need for the following facilities across the LGA:

- one multipurpose community facility;
- two libraries;
- 23 childcare facilities;
- civic centre;

- cultural facility;
- civic and urban improvements in line with Macquarie Park Master Plan; and
- open space.

Further consultation with Council has indicated that open space, community meeting rooms / facilities, design and adaptability of units, as well as the provision of child care facilities as the areas of greatest need. The development makes a significant contribution towards meeting the needs of residents by providing the following facilities:

- communal open space;
- residents swimming pool;
- residents gym; and
- publicly available communal meeting room.

The commercial / retail areas also provide the opportunity for a range of shops and services to be provided, to meet the needs of local residents. Potential uses include a restaurant / cafe and convenience store, which will be confirmed in the Stage 2 Project Application.

Finally, as part of the SIA, Hill PDA undertook a survey of the medical centres, dentists, child care centres and schools in the vicinity of the site to establish their capacity. There generally appears to be an adequate supply of the facilities surveyed, with new residents being able to access all of these services and facilities with relative ease. The exception to this is child care, where there appears to be a shortfall in the local area. The proponent will investigate the feasibility of providing a childcare centre on the site, post approval and during Stage 2 (it is not a commitment of the Concept Plan to provide a childcare centre on the site). The non-residential component of the development forms part of Stage 2, with the composition of the non-residential floor space to be resolved as part of the detailed design of that stage.

Social Impact

The SIA concludes that the proposed development will have an overwhelmingly positive social impact. The only potentially negative social impacts associated with the development are short term, and are associated with construction activities. To a large degree, these impacts are unavoidable if the longer term social benefits are to be achieved and can be managed as discussed at Section 6.26.

The key social benefits associated with the development include:

- supporting the continued growth of the City of Ryde by providing residential accommodation that meets local housing needs and improves the range of housing available;
- a contribution to the supply of housing, in-line with projected population growth, to avoid exacerbating issues around housing affordability;
- the proposal replaces transient hotel residents with a more stable residential community, helping to foster a stronger sense of community;
- the integrated design concept and non-residential uses ensure the development will promote social cohesion;
- the proposed development opens up the site to the wider community and enhances the appearance of the site which currently makes little contribution to the surrounding locality;

- the provision of a communal meeting space and public access to communal open spaces, as well as a gym and swimming pool for use by residents, will ensure undue pressure on existing community facilities does not result; and
- the inclusion of non-residential space provides the opportunity for conveniently located shops and services.

6.17 Economic Issues

Hill PDA has prepared an Economic Impact Assessment (EIA) report to examine the economic implications of the Concept Plan and Project Application, particularly in relation to the change in land use, and the quantum of non-residential floor space proposed (refer to **Appendix X**). Whilst Section 6.16 provides an assessment of the social implications of the mix of land uses proposed by the Concept Plan and Project Application, this Section of the report summarises the key economic reasons for the proposed mix of residential and non-residential floorspace. It should be noted that the economic assessment is based on a study area, or Trade Area, with a radius of 800m from the site. This equates to a walking distance of approximately 10 minutes, which is considered a reasonable distance which people may walk to frequent local shopping facilities.

The Macquarie Park Corridor is expected to accommodate the majority of the forecast employment floorspace growth in the Ryde LGA, with the number of workers expected to increasing from 40,000 workers in 2004, to 62,500 workers by 2034 (an increase of 56%). The Concept Plan proposes approximately 1,000m^2 of non-residential floor space. This quantum of non-residential space will complement the significant amount of commercial development that is planned in the area, by allowing a greater number of residents to live closer to their place of work and by providing locally accessible commercial / retail facilities.

Population forecasts suggest that the residential population within the 800m catchment area could increase by up to 1,036 people between 2006 and 2016 and by 3,448 people between 2006 and 2036. This level of growth is higher than both the Ryde LGA and Sydney, however is considered appropriate given the accessibility of the location, with rail facilities supporting the densification of dwellings. The report notes that the increased number of residents would increase the amount of expenditure available to support local shops and businesses, as well as increasing the number of workers needed for local businesses.

6.17.1 Loss of Hotel Accommodation

Prior to the GFC, the occupancy rate for Stamford Grand North Ryde (SGNR) was approximately 75%, however today there is an average occupancy rate of just 60%. This is well below the average occupancy rate for similar hotels in the Sydney Metropolitan Area (85.8%), despite the SGNR offering lower room rates than the Sydney CBD (the average SGNR room rate is currently around $120 per night). This is partly linked to the age and design of the hotel, which is now more than 20 years old. It is considered that the hotel has reached the end of its useable life, with the amount of maintenance required to bring it into line with current requirements and customer expectations making it less viable.

Historically, the SGNR has relied on corporate clients for the majority of its business, however the number of corporate clients has declined significantly since the GFC. Corporate customers are now choosing to stay in better, more modern hotels in the locality, with the resort style accommodation provided by the SGNR no longer attractive to corporate clients.

A preliminary assessment of the five closest hotels suggests that there are around 830 rooms available within close proximity to Macquarie Park, of which Stamford Grand accounts for 256 rooms. The other hotels located around Macquarie Park comprise:

- Macquarie Graduate School of Management (40 rooms);
- Marriot Courtyard North Ryde (188 rooms);
- Travel Lodge (120 rooms);
- Quest Hotel (173 apartments); and
- Medina Hotel (57 apartments).

The proposed development would result in a loss of approximately 30% of the hotel rooms currently provided in the area. However, because the hotel only achieves 60% average room occupancy, the real loss in rooms would be closer to 18.5%. The proposed redevelopment scheme would not have a significant impact upon the availability of rooms for corporate or tourist visitors to the Macquarie Park area. Even if the hotel market does improve, the SGNR site is not well placed to capture an increased level of demand due to its dated layout and condition, and the increasing preference of corporate clients for serviced apartments and CBD locations (now linked by the conveniently located Lane Cove Tunnel).

6.17.2 Drivers for the Quantum of Non-Residential Floor Space

Existing and Future Retail Facilities

The Macquarie Shopping Centre lies approximately 650m from the site, and contains around 99,000m^2 of retail GLA and entertainment floorspace. In addition to this, there are a number of other retail outlets which indicate that the area is well provided for in terms of major retail facilities, however there is little in the form of local convenience shops and services, particularly when considering the barrier that Epping Road and the M2 provide to pedestrian movement. Hill PDA has identified the following local convenience shops and services in the catchment area:

- Balaclava / Epping Road Neighbourhood Centre, Marsfield; and
- Agincourt Road Neighbourhood Centre, Marsfield.

In addition to these existing facilities, there are a number of proposed retail developments, which together, could provide an additional 40,596m^2 of retail floorspace. These developments include:

- the Macquarie Centre – an additional 35,000m^2 of retail floorspace development, including a David Jones store;
- 120-128 Herring Road – application seeking an additional 96m^2 of retail as part of mixed residential development on this site incorporating retail uses at ground-floor level; and
- 396 Lane Cove Road and 32-46 Waterloo Road – approximately 5,500m^2 of retail could be provided by this scheme if the entire ground floor was devoted to retail which is considered unlikely.

Local Shops and Services

Considering the retail hierarchy in Macquarie Park, which includes the Macquarie Centre as a Specialised Centre of sub-regional importance, it would not be suitable to provide a significant quantum of retail floorspace on the site, as it would undermine the existing retail hierarchy.

A small amount of retail floorspace may be appropriate to meet the needs of local residents and businesses subject to there being sufficient capacity for such facilities, and provided that any new floorspace would not adversely impact upon the existing hierarchy. Hill PDA considers that the provision of local shops in the quantity proposed is likely to be appropriate to support the planning objectives for the B4 Mixed Use zone, contributing to the range of uses provided across the zone and creating a vibrant mixed use area that meets the needs of new and existing residents and workers.

In line with the definition of a Neighbourhood Centre under the draft Inner North Sub-Regional Strategy, Hill PDA recommends that approximately 1,000m^2 of retail / commercial floorspace be provided on site (excluding SOHO apartments). This figure is considered appropriate as it will not compete with other centres (in particular the Macquarie Centre) but will be capable of providing a range of shops and services in keeping with its local shopping role, whilst still making a contribution to an increased supply of retail / commercial space that is required as a result of the increased available expenditure. The quantum proposed is also considered significant enough to provide a 'critical mass' of floorspace to ensure the viability of the retail and commercial uses.

Based on these finding, the EIA has determined the type of retail facilities that may be appropriate on the site. It is noted that there is a lack of easily accessible local convenience shopping facilities which could cater for the smaller scale, day to day needs of new and existing residents. Given the proposed future demographic of residents, particularly time-poor working couples, easily accessible convenience retail facilities are considered necessary. Examples of retail uses which may be appropriate include a small convenience store, child care, a restaurant / cafe or hairdresser.

Commercial Office Space

Commercial floorspace in the Macquarie Park Corridor is expected to grow by 1.25 million square metres by 2034. Whilst CBRE data indicates that the commercial market is performing well, vacancy rates were recorded at 10.1%, which is slightly higher than the Sydney wide average of 9.4% (however it is the lowest of any Sydney suburban market). CBRE data also indicates that the Macquarie Park is an attractive location for commercial office development, and despite a recent slowdown in activity, it is expected to continue to witness growth in the office market over the next few years. Notwithstanding the expected growth and demand for commercial floorspace in Macquarie Park, the site is not considered appropriate for commercial floorspace. Based on the current absorption rates, and the forecast growth in commercial floorspace over the next five years, the growth can easily be absorbed within the Business Park without the need to redevelop peripheral sites such as the Stamford Grand.

Small Office / Home Office (SOHO) Apartments

As discussed previously, the draft City of Ryde Employment Study recognises SOHO development as a way to capture the economic benefits associated with the growing home based (micro) business sector, with the Study encouraging such uses in and around commercial centres.

Approximately 35 SOHO apartment units are proposed under the Concept Plan and Stage 1 Project Application. Each unit will provide around 50m^2 of floor space with approximately 20m^2 to be used for office type accommodation. The provision of SOHO apartments in this location is entirely consistent with policy guidelines, providing jobs close to homes and reducing the need for workers to commute. Furthermore, it provides flexible space for emerging businesses which would contribute to the role of Macquarie Park. SOHO apartments in this location will also help activate the area during the day as well as at evenings and on the weekend.

6.17.3 Consideration of Uses across the Mixed Use Zone

As detailed above, it is considered that the proposal will make a positive contribution to the B4 Mixed Use zone, enhancing the range of uses provided across the zone. Within the broader zoning of Macquarie Park, the B4 Mixed Use zoning is the only zone which permits residential development. However, as shown in **Figure 45**, much of the B4 zoning is occupied by non-residential uses, including part of the Macquarie University Grounds and the Macquarie Shopping Centre. In addition, many of the existing residential developments in the zone along Herring Road are within strata title and are therefore unlikely to be redeveloped in the current statutory climate. This significantly limits the opportunity for increased residential densities within walking distance of the Macquarie University Train Station, and within close proximity to employment opportunities offered by the business park. The proposed development represents an important opportunity to provide residential accommodation near transport infrastructure and employment opportunities, as well as entertainment and retail facilities, and will ease pressure on established residential areas to accommodate state government targets for infill residential development. The location of residential uses on the periphery of the mixed use spine is entirely appropriate, with the core of the spine in proximity to the station dominated by retail, office and University uses, and the edges of the spine providing complementary residential uses. Further, the site's location on the periphery of business centres is more appropriate for residential uses.

Whilst only a small amount of non-residential floor space is proposed, the objectives of the zone are still upheld, with the development contributing to the mix of uses are provided across the zone.

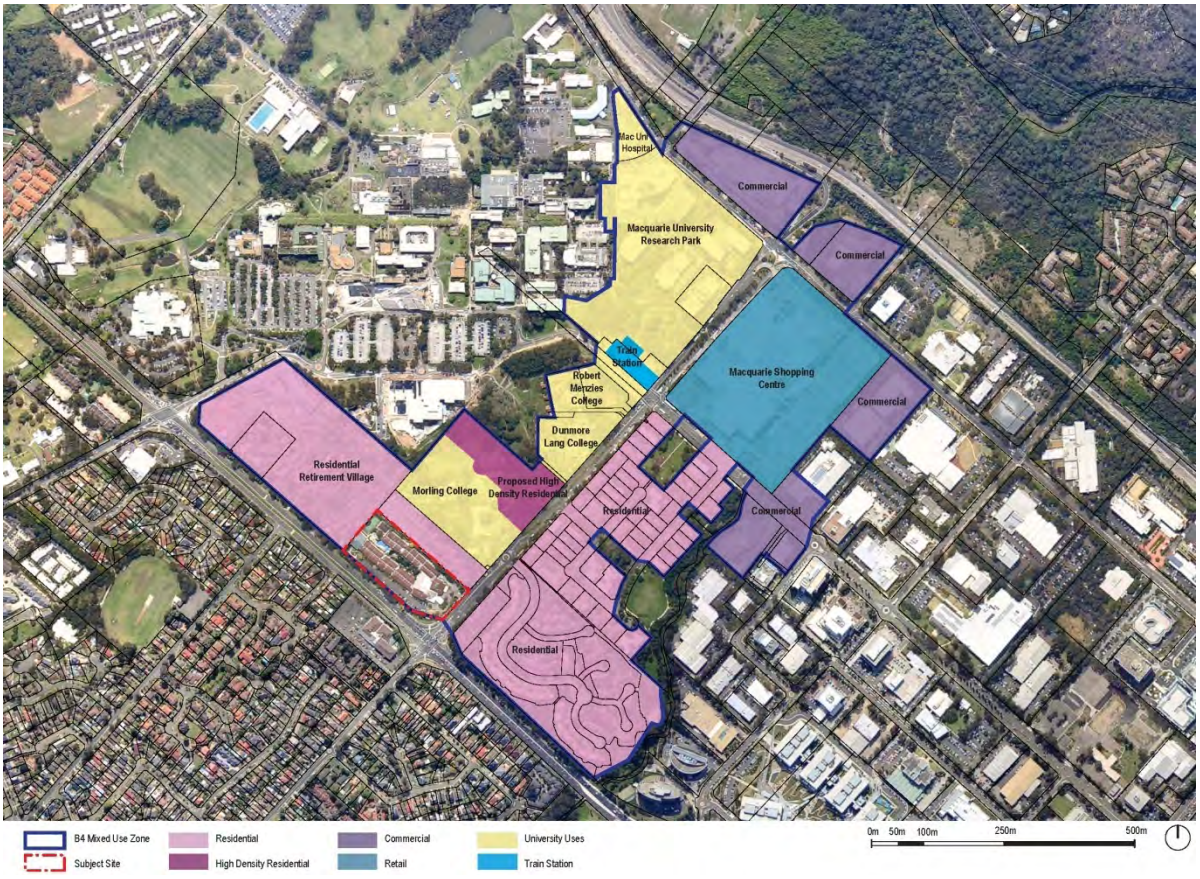

Figure 45 – Existing land uses within the B4 Mixed Use zone
Source: JBA Planning

6.17.4 Other Economic Impacts

The EIA has briefly examined the other economic impacts of the proposed development, concluding that the proposal would positively support many of the economic objectives of Sydney and Ryde LGA. Other economic considerations include economic multiplier impacts, construction related employment, post-construction employment and investment stimulus. These can be summarised as follows:

- based on the estimated construction cost of $163m, the total economic activity generated by the construction of the proposed Concept Plan and Stage 1 Project Application is approximately $467m, based on potential production induced effects and consumption induced effects;
- based on the cost of construction, the development would create approximately 911 job years (one full time job per year of construction). These are direct jobs and there would also be additional jobs created through the employment multipliers, which could equate to up to 3,745 job years;
- SOHO apartments could equate to 1.5 Full Time Equivalent (FTE) jobs per unit based on Hill PDA research. The provision of 35 SOHO apartments in this development could support an additional 53 FTE jobs;
- assuming that the commercial / retail floorspace of approximately 1,000m^2 was made up of small speciality stores at a ratio of 1 worker per 30m^2, a total of 33 FTE jobs could be accommodated on the site. In total, the SOHO apartment units and additional retail / commercial floorspace could create an estimated 86 FTE jobs on site. Whilst this is marginally lower than the 90 FTE jobs currently provided on site, it only equates to a modest loss of 4 FTE jobs; and
- the proposal will stimulate and attract further investment to the immediate area, with major property investment decisions viewed as a strong positive commitment for the local area.

6.18 Environmentally Sustainable Development

An ESD Assessment and Green Star Matrix has been prepared by Inhabit (refer to **Appendix Y**) which details the results of the ESD assessment on the proposed development. It provides an assessment of both the preliminary BASIX results and Preliminary Green Star results. The report assesses the proposal's compliance against the BASIX requirements relating to energy, water and thermal comfort. The report confirms that BASIX can be achieved, however a final BASIX certificate will be provided with the PPR for Stage 1.

Energy

The criteria states the building is required to achieve a 20% reduction in energy from the BASIX benchmark 3,929kg of CO_2 per person per year. The proposal is able to achieve a 30% reduction in this figure, and as such, the buildings exceed minimum BASIX criteria. It is noted that this rating is the minimum required to achieve BASIX compliance, and does not include commitments to achieve a 4 star Green Star Rating.

Water

BASIX criteria state that buildings are required to achieve a 40% reduction in water from the BASIX benchmark of 90,340L per person per year. Based on the design specifications and water saving devices proposed in the Integrated Water Management Plan at Section 4.7 and **Appendix P**, a 46% reduction is anticipated to be achieved and as such, the building passes and complies with BASIX. Again, it is noted that this rating is the minimum required to achieve

BASIX compliance, and does not include commitments to achieve a 4 star Green Star Rating.

Thermal Comfort

BASIX requires a specified thermal comfort load based on the building's location. Macquarie Village is required to achieve an average heating load of 66MJ/m^2/annum and a cooling load of 59MJ/m^2/annum. Currently, not all apartments are able to achieve compliance with this control, however it is noted that the glazing requirements outlined in the Noise Impact Assessment (refer to Section 6.16 and **Appendix S**) would further improve the performance of the buildings. Given that window layouts and screening arrangements are generally finalised at Construction Certificate stage, Inhabit recommend that the thermal comfort be re-assessed to confirm compliance with BASIX prior to the issue of a Construction Certificate.

It is recommended that glazing be further upgraded to all to ensure that BASIX is achieved and potentially achieving Green Star credit points.

Green Star

In order to achieve a 4 star Green Star rating, many of the items that are required for BASIX compliance will be required to be improved upon. Inhabits note that in order to achieve the 4 star rating, a minimum of 45 weighted points is required. If a 4 star rating is to be achieved, Inhabit recommend that the proposal aim to achieve 50 weighted points to ensure that there is a buffer. The results from the preliminary Green Star assessment indicate that the proposal could pursue 52 weighted points, and as such, is on target to achieve a 4 star Green star rating.

6.19 Geotechnical and Contamination

Geotechnical

A Geotechnical Report has been prepared by Douglas and Partners (**Appendix Z**). The report addresses the geotechnical requirements of the proposal, including:

- site preparation requirements;
- excavation conditions;
- excavation support (including batters, the design of lateral support and ground anchors);
- vibrations;
- seismic design;
- pavements;
- floor slabs; and
- drainage

The report provides key recommendations for each requirement above. Douglas Partners have recommended that aspects of the proposal be inspected by a geotechnical professional at various times of the construction process to confirm construction methods will have no adverse impacts. These recommendations are reflected in the draft Statement of Commitments at Section 7.

Waste Classification of In-Situ Materials

A Waste Classification of In-Situ Materials Report has been prepared by Douglas and Partners (refer to **Appendix AA**). The report determines the classification of fill and natural soils already on the site, in accordance with DECCW's *Waste Classification Guidelines 2008*, as it is proposed that the majority of excavated materials will be disposed of off-site.

An assessment of the fill, found that it does not have hazardous waste characteristics, or contain any liquid waste or special waste such as clinical, asbestos or tyres. However, initial testing results indicate that elevated concentrations of nickel, lead and benxo(a)pyrene were present in several samples. Based on the results of the field investigation and laboratory testing, a preliminary in situ waste classification of General Solid Waste has been assigned to fill soils on site. Douglas Partners recommends that an environmental scientist or engineer undertake a site inspection once the site has been stripped of filling and excavated soils are stockpiled on site. Once the classification of waste on site is confirmed as General Waste, it can then be transported to a facility licensed to accept General Solid Waste.

In relation to natural soils on site (below the fill), the findings of the laboratory testing indicate that natural soils beneath the filling on site are classifiable as Virgin Excavated Natural Material (VENM). As such, the natural soils are suitable for off-site beneficial reuse. Again, Douglas Partners recommend that the preliminary classification be confirmed with a site inspection once filling has been removed.

Preliminary Contamination Assessment

A Preliminary Contamination Assessment has been prepared by Douglas Partners (refer to **Appendix R**). The report has been prepared to assess the potential for contamination on the site based on past and present site usage. Based on title deeds and aerial photographs, it appears that the site may have been used for residential, orchards and other agricultural uses until the 1950s. Since this time, the site has been used for various residential and commercial uses, before being developed for its current use as a hotel. On the basis of the site features and historical uses, it is considered that the likelihood for contamination is generally low. Similarly, the significance of chemical contamination (i.e. the ability of chemicals to affect the site in the long-term) from previous agricultural uses, is also considered to be low. These results have been confirmed by laboratory testing on a limited number of soil samples, with all contaminants below the adopted Site Assessment Criteria (SAC). As such, the site is considered suitable for the proposed residential development and therefore satisfies the requirements of SEPP 55.

In addition to the recommendations put forward in the Geotechnical and Waste Classification Assessments, the Preliminary Contamination Assessment makes the following recommendations:

- sampling should be undertaken beneath the on-ground floor slabs and the soil checked for pesticides; and
- should any indicators of asbestos be indentified during early civil works, further assessment should be conducted.

These requirements have been included in the Statement of Commitments.

Groundwater Assessment

In addition to the Preliminary Contamination Assessment and Geotechnical Reports prepared by Douglas Partners, a Groundwater Statement has been prepared to address the issues raised by the NSW Office of Water (refer to **Appendix JJ**). Each point raised by the NSW Officer of Water is addressed in detail in summary Table within the Douglas Partners report.

In summary, the groundwater bores identified groundwater between RL 62.3 and RL68. However, because the site is located on gently sloping ground and is underlain by stiff clay soil and rock with relative permeability, seepage flows along the rock surface and through the rock mass would be significantly less than for other, more permeable soil types. As such, groundwater seepage both during construction and in the long-term should be readily controlled by 'sump-and-intermittent pump' systems within a drained basement. This system involves the collection of seepage, which is disposed of via the stormwater drainage system, and does not involve pumping to extract groundwater or lowering of a water table.

Douglas Partners concludes that temporary or long-term collection and disposal of seepage should be possible on the site, and should not have a significant impact on groundwater flows or licensed groundwater users surrounding the site. Further, a Temporary Dewatering License under Part V of the *Water Act 1912* is unlikely to be required on the site.

6.20 Accessibility

A Statement of Compliance of Access for People with a Disability has been prepared by Accessible Building Solutions to assess the suitability of the Concept Plan and Stage 1 Project Application from an accessibility perspective (refer to **Appendix BB**). The proposal has been assessed against the following criteria:

- Access to Premises Standard 2010 and the draft BCA 2011;
- City of Ryde DCP 2010 part 9.2 Access for People with a Disability;
- Australian Standards AS1428.1 – 2010 Design for Access and Mobility; and
- Australian Standard AS 4299 – 1995 Adaptable Housing.

Compliance with the Access to Premises Standard and the draft BCA 2011 is deemed as compliance with the *Disability Discrimination Act 1992*.

Assessment

The Access Report identifies the following features provided by the Concept Plan:

- footpaths providing an accessible path to each building from the street;
- on-street and basement car parking;
- kerb ramps to AS 1428.1 to provide access from the road to the footpath level;
- access to all levels of each building by way of a lift complying with BCA 2011; and
- access to communal facilities.

In relation to the Stage 1 Project Application, the Access Report notes that the proposal is able to comply with the draft BCA 2011. It also concludes that the development is able to meet the requirements of Ryde's DCP, with 10% of units provided as adaptable dwellings. Whilst the proportion of units required to be adaptable under Council's DCP is considered appropriate, the DCP requires adaptable units to be Class A.

The relevance of this requirement is questionable, with Class A dwellings generally required in retirement villages, or where a high level of adaptability and occupant turnover is envisaged. It is noted in the Access Report that even State Environmental Planning Policy (Housing for Seniors of People with a Disability) 2004 only requires Class C compliance. As detailed below, whilst compliance with Class B and / or A is achievable in most cases, compliance with Class C is considered appropriate in this instance.

The Stage 1 adaptable units have been integrated with conventional dwellings, with a proportional representation of 1, 2 and 3 bedroom units, located on a range of floor levels with a variety of orientations.

Recommendations

The assessment concludes that the proposal will provide appropriate access for people with disabilities throughout the development. In relation to the provision of adaptable dwellings, the report recommends that compliance with Class C of AS4299 would be sufficient. However, it is noted that the spatial requirements are generally the same for all classes of adaptable units, with the main differences lying in the detail of the fit-out. The requirements of Class B and / or Class A are able to be achieved in most cases. The requirement for 10% Class C adaptable units across the site has been included in the draft Statement of Commitments at Section 7.

6.21 Building Code of Australia

Advance Building Approvals has prepared a BCA Assessment Report and BCA Statement to assess compliance of the proposed Concept Plan and Project Application against the deemed to satisfy provisions of the BCA (refer to **Appendix CC**). The report confirms that the proposed works are generally able to comply with the relevant deemed to satisfy provisions with respect to:

- fire resistance;
- access and egress;
- services and equipment;
- health and amenity;
- ancillary provisions;
- maintenance; and
- energy efficiency.

Where non-compliances arise, Alternative Solutions will be employed to address these matters. All Alternative Solutions will be developed for approval prior to the issue a Construction Certificate.

6.22 Fire Engineering

A Fire Safety Engineering Statement has been prepared by AECOM (refer to **Appendix DD**). The statement has been prepared with reference to the BCA Assessment Report prepared Advanced Building Approvals, and concludes that the proposed Alternative Solutions can be supported by performance based fire safety requirements.

6.23 Structural Adequacy

As detailed in the Structural Design Certificate of Intent prepared by Meinhardt (refer to **Appendix EE**), the structural design will be in accordance with normal engineering practice and principles and the relevant Code of Standards Australia including:

- AS / NZS1170.0 - 2002 General Principles;
- AS / NZS1170.1 - 2002 Permanent, Imposed and Other Actions;
- AS / NZS1170.2 - 2002 Wind Actions;
- AS3600 – 2009 Concrete Structures;
- AS3700 – 2001 Masonry;
- AS4100 – 1998 Steel Structures;
- AS1720.1 – 1997 Timber Structures; and
- BCA – 2009 Building Codes of Australia.

6.24 European and Indigenous Heritage

European Heritage

The only listed heritage items of European Heritage within the vicinity of the site are locally listed ruins in the north of the Macquarie University campus. The site of the proposed Concept Plan and Project Application is approximately 1km from the heritage item, and as such will have no impact upon it. There are no other listed heritage items in the vicinity of the site. No further assessment is considered necessary.

Indigenous Heritage

A search through the Aboriginal Heritage Information Management System (AHIMS) has revealed that there are no Aboriginal objects that have been reported to the Director General of the Department of Environment, Climate Change and Water within 200m of the subject site. The nearest item of Aboriginal Heritage is located within the Macquarie University, near the intersection of Epping and Culloden Roads, some 700m from the site. The proposal will have no impact on this item, and as such, no further assessment is considered necessary.

6.25 Soil and Water Management

A Civil Engineering Design Report has been prepared by Meinhardt Infrastructure and Environment (refer to **Appendix L**) to assess the impacts of the proposed development on sedimentation, erosion, stormwater drainage, groundwater and flooding. The Civil Engineering Design Report also identifies relevant mitigation measures and strategies for managing soil and water during construction and for the life of the development.

Statutory Requirements and Standards

The Stage 1 civil works have been designed in accordance with the following relevant legislation, acts, standards and references:

- RTA Road Design Guide;
- AUSTROADS – Guide to Traffic Engineering Practice;
- Australian Standards
  - AS2890.1 – Off Street Parking
  - AS2890.2 – Commercial Vehicle Facilities
  - AS2890.5 – On-Street Parking

- Australian Rainfall and Runoff (AR&R) 4th Edition;
- Managing Stormwater: Soils and Construction 4th Edition Volume 1, Landcom 2004 (Blue Book);
- Managing Urban Stormwater Guidelines, Department of Housing (2004); and
- Ryde Council's Development Control Plan, and Engineering Requirements.

Erosion and Sediment Control

An Erosion and Sediment Control Plan will be prepared prior to the issue of a Construction Certificate. Soil control measures will include:

- diversion drains;
- stockpile locations will minimise soil loss and will be surrounded by sediment fences;
- revegetation of exposed soil;
- gross pollutant traps and inlet filters;
- truck shaker grid; and
- silt fences.

Earthworks

The extent of excavation is identified in the Civil External Works Drawings at **Appendix L**. Bulk earthworks will be undertaken to:

- remove and reconsolidate uncontrolled fill on the site;
- regrade the site to ensure all stormwater over land flows are directed to the proposed stormwater easement;
- regrade the site to provide effective grades for vehicular, pedestrian movements and disabled access;
- provide embankments / batters at maximum slope of 1 in 4 for roadways; and
- regard the site to provide areas suitable for the basement construction.

Impacts of excavation will be mitigated in accordance with the recommendations of the Construction Management Plan at Section 6.26.

Stormwater

The proposed stormwater drainage network is identified in the Civil Drawings at **Appendix L**. All stormwater drainage infrastructure will be designed in accordance with AS3500.3, City of Ryde Council's specifications, the Concrete Pipe Association of Australia Guidelines and the Australian Rainfall and Runoff (ARR) publication. The drainage system comprises a minor / major system in accordance with the ARR. The minor system comprises a pit and pipe system, whilst the major system relies on surface overland flows within the road cross-section. The minor system will collect the surface water from landscaped areas, pavements and roads and convey it to a pit and pipe system which discharges to the proposed stormwater drainage easement. The pipe system will be designed to a 20 year ARI. The major system comprises overland flow paths along roads and pathways and will be designed for storms up to the 100 year ARI.

Stamford has begun negotiations with Ryde Council and the owners of 143 Epping Road to create an easement to facilitate stormwater connection to Council's stormwater system. The stormwater system, and the connection to Council's system, will be designed to minimise disruption to the downstream property owner's site, existing vegetation and the watercourse.
The securing of the easement will be provided to the Department of Planning prior

to the issue of a Stage 1 Construction Certificate. On-site Stormwater Detention (OSD) will be provided in the form of an irregularly shaped concrete tank to conform to the shape of the underground car park. The tank will have an approximate surface area of 170m^2 and an internal height of 2.7m.

Water Sensitive Urban Design

A gross pollutant trap will be located near the north-western corner of the site to treat stormwater discharge prior to discharge into the proposed drainage easement. Within the internal road system, the landscaped tree pits will act as rain gardens to assist in the removal of fine and course sediment, hydrocarbons and nutrients. The gross pollutant trap and rain gardens have been designed for the Treatable Flow Rate (TFR) which is defined as the runoff from the peak storm expected to exceed four times per year.

Additional WSUD principles have been detailed in the Integrated Water Management Plan has been prepared by AECOM (**Appendix P**) and include:

- rainwater harvesting for non-potable reuse including toilet flushing, clothes washing and irrigation;
- harvested rainwater will be treated via a gross pollutant trap to remove suspended solids prior to discharge into the rainwater tank; and
- water efficient fixtures and fittings including 4 WELS star rating dual flush toilets, 4 WELS star taps and 3 WELS star shower heads will be used to reduce water demand.

The proposed WSUD principles will reduce potable water consumption, stormwater runoff and the associated environmental impacts of stormwater runoff. The proposed gross pollutant trap will also improve the quality of rainwater discharge from the site.

MUSIC Modelling

In accordance with the requirements of the DGRs, MUSIC modelling has been undertaken to assess:

- stormwater quality and pollutant exports under existing conditions;
- impacts of the proposed development on stormwater quality; and
- and identify additional supporting measures if current best practice is not met.

The results of the modelling demonstrate that, through the implementation of the proposed WSUD measures, the development will achieve the pollutant reduction objectives of the Australian Runoff Quality (ARQ) Guidelines.

6.26 Construction and Waste Management

A suite of management plans have been prepared to establish the measures that will be put in place to ensure that the construction process does not result in unacceptable amenity impacts. These include a:

- Construction Management Plan (CMP);
- Construction Noise and Vibration Management;
- Waste Management Plan (WMP); and
- Construction Traffic Management Plan (CTMP).

The measures set out in these plans are detailed below, and are reflected in the Statement of Commitments at Section 7.0.

Construction Management

In addition to the measures outlined in the Civil Design Report as discussed above in Section 6.25, a number of measures outlined in the CMP prepared by Stamford Property Services (refer to **Appendix FF**) which will be adopted to mitigate construction impacts. These include:

- for the duration of construction, safe access for pedestrians and vehicles will be maintained, with traffic management plans developed to manage safe pedestrian and traffic movements into and out of the site. Pedestrian access along Epping and Herring Roads will be delineated with a construction fence. The footpaths will be checked on a regular basis to ensure they have not been affected by any works;
- the erection of temporary security fencing around the perimeter of the site, to prevent unauthorised access. In order to minimise air borne material leaving the site during the excavation and construction process, the fence will be covered by shade cloth;
- soil and erosion control measures will be developed prior to the issue of a construction certificate. The measures will ensure that the quality of water leaving the site is maintained at the desired levels. Sediment control measures will be inspected following extended periods of rain to ensure they remain fully functional;
- any materials stockpiled on the site for a prolonged period will be covered to prevent material becoming air borne in adverse weather;
- in order to prevent dirt contaminating the surrounding street network work on site will be monitored, particularly during high wind conditions, to ensure that excessive dust is not created. Further measures including the 'watering down' of lose materials, as well as the provision of shaker grids at the site's exit point and the washing down of vehicles will assist in preventing the spread of dirt and dust from the site;
- in accordance with the recommendations of the Arborists Report at **Appendix E**, all trees nominated for retention will be protected and monitored to ensure that they are not adversely affected by the development;
- site accommodation will be established in two locations on land adjacent to each stage of the development, until such time as it can be accommodated in the basement levels. Facilities will be provided in accordance with industry practice;
- all loading and unloading of materials will be done off the public road system to prevent congestion of the surrounding street network. Once unloaded, materials will be stored in areas nominated as materials handling zones and (once cleared of formwork) the basement levels. Any combustible liquids will be stored in the appropriate security cages, with the appropriate safety measures put in place;
- noise shall be managed in accordance with the recommendations put forward by the Acoustic Report and Construction Noise and Vibration Management Plan prepared by Acoustic Logic and Stamford Property Services' established Noise Management Policy; and
- once Stage 1 of the development is complete, amenity of residents will be ensured by the provision of a dedicated construction entrance to the development, there will also be a construction fence separating Stage 1 and Stage 2 with fabric installed on it to minimise dust and other impacts. As the car park will be built in its entirety during Stage 1 works there will also be fencing installed so as to limit the use of the area.

The successful contractor will compile a detailed CMP for each separate stage of the development to address site specific issues prior to the commencement of work.

Construction Noise and Vibration Management

A Construction Noise and Vibration Management has been prepared by Acoustic Logic (refer to **Appendix GG**) to minimise noise and vibration emissions from the excavation and construction works.

The noise and vibration plan has been developed in accordance with the following standards and guidelines:

- Australian Standard AS2436:1981 "Guide to noise control on construction, maintenance and demolition sites"; and
- DECCW's "Interim Construction Noise Guideline".

The management plan outlines the control methods that will be adopted to ensure that the noise and vibration criteria set out in these documents are met. These include:

- selection of alternative appliances or processes where a particular appliance is found to be generating excessive noise or vibration levels;
- construction of acoustic barriers either at the source or receiver;
- the use of silencing devices;
- the use of rubber matting over material handling area to reduce the sound of objects being dropped; and
- treating of specific equipment to reduce sound emissions and the regular checking of equipment.

Ongoing noise monitoring and complaints handling procedures will be put in place to ensure the effectiveness of mitigation measures, and that impacts on surrounding receivers are addressed and minimised.

Construction Traffic Management

A preliminary Construction Traffic Management Plan (CTMP) has been prepared by Traffix (**Appendix HH**). The CTMP provides the following details in relation to construction traffic management:

- access for construction vehicles will be available from both Herring and Epping Roads via a new staged road connection to Epping Road (in the location of the proposed new Type 3 Road) and via the existing driveway crossing on Herring Road. It is expected that Epping Road will facilitate exit movements only, with the Herring Road access to accommodate both entry and exit movements. If, on occasions, access to the site is required via Epping Road, a plan of management will be implemented to ensure that no conflicts occur;
- whilst truck movements will vary depending on construction activities, truck movements have been estimated at approximately 30-50 truck movements per day. During the demolition and excavations stages, trucks will generally be 'truck and dog' combinations with occasional rigid vehicles. During subsequent stages of construction, trucks will vary depending on deliveries. Both the Epping and Herring Road accesses will be designed to ensure that all vehicles can exit the site in a safe and efficient manner; and

- workers will be encouraged to use public transport or car pool, to reduce car usage. Due to the location of the site, it is anticipated that up to 15% of workers will utilise public transport with an additional 20% car pooling. The arrival and departure of workers will generally be outside of peak periods, and as such, will have minimal impact on the operation of key intersections. Parking for workers who do drive will generally be provided on site, with staff parking able to be accommodated in the basement following the demolition and excavation phases.

Demolition and Construction Waste Management

A preliminary Waste Management Plan (WMP) for the demolition and construction phases has been prepared by as part of the CMP. A detailed WMP for each stage will be prepared prior to the issue of a Construction Certificate. The following measures will be adopted to mitigate against construction impacts:

- the applicant seeks to reduce the volume of waste transferred to land-fill through the implementation of a management process on site. A waste contractor will be engaged to ensure all waste removed from the site is sorted at the waste depot for recycling / reuse. Monthly reports will ensure that recycling and reuse targets are achieved;
- products selected for use on the site will be supplied with the view to reducing the volume and type of packaging, so as not to generate excessive waste;
- waste materials will be restricted to the bins provided on site. No stockpiles of waste material will be permitted; and
- large bins measuring $9m^3$ – $15m^3$ will be used at ground level to collect the waste. These bins will be fed by smaller bins lifted from the working floors and emptied by crane or forklift on a regular basis. Full bins will be covered at all times when being transported on the public road network.

Operational Waste Management

A separate WMP has been prepared by Stamford Property Services to address operational waste management for Stage 1 (refer to **Appendix II**). The proposed waste management system comprises of:

- a waste room containing a chute for general waste and two 240L mobile bins for co-mingled recyclable waste will be located on each residential floor level;
- a garbage room containing a mechanical compactor and space for filled and empty 240L bins will be located at the base of each chute at either ground or basement B1 level; and
- holding rooms for the general waste, the recyclable waste bins and the bulky waste such as discarded furniture and large electrical appliances will be located on the ground floor level with direct access to the street.

The layout of the street system, as well as the 'back of house' areas at the ground level will enable garbage trucks to drive through and gain access to the holding rooms. It is noted that the truck driveway system is generally separated from the residents' car driveway system.

Residents will be responsible for the following:

- sorting their waste into the general waste and recyclable streams, carrying the waste to the adjacent floor-level waste room and disposing of it in either the chute or bins as appropriate for the waste type; and
- transporting to and placing bulky waste items in the appropriate ground-level holding room.

The building manager will be responsible for:

- collecting and transporting the recyclable waste bins from the residents' waste rooms to the appropriate ground-level holding room;
- exchanging bins on the waste compactor equipment and transporting them to the appropriate ground-level holding room;
- making available the bulky waste items for collection by Council on its kerbside 'clean-up' dates;
- cleaning all waste collection and holding rooms; and
- collection and removal of garden waste.

It is noted that there will not be any compost facility.

6.27 Consultation

In accordance with Part 3A of the EP&A Act, consultation is required to occur at the following stages:

- the Director-General of the Department of Planning is required to consult with relevant public authorities in preparing the environmental assessment requirements (DGRs) for the Concept Plan / Project Application; and
- the Director-General is required to advertise and exhibit the Environmental Assessment and appended reports and documentation.

Comments and issues raised by these authorities and groups are included in the DGRs at **Appendix C** and have been considered by the Department in preparing the DGRs. When the Director-General advertises and exhibits the Environmental Assessment (together with the appended reports and documentation) agencies will have a further opportunity to comment.

Following Concept Plan / Project Application approval, further consultation with relevant agencies and the community will take place as part of future application stages. The subsequent DAs and supporting documentation will also be exhibited in order that any agencies and community members may make submissions at that time.

The requirement of the DGRs to undertake an appropriate and justified level of consultation has been met given the extent of:

- prior consultation regarding the Concept Plan / Project Application;
- future consultation in relation to this Concept Plan / Project Application;
- future consultation in relation to Development Applications; and
- the targeted consultation outlined in Section 6.27.1 below.

Given the extent of prior consultation regarding the Concept Plan and Stage 1 Project Application, future consultation proposed in relation to this and subsequent applications, and the targeted consultation detailed below, it is considered that the requirements of the DGRs are satisfied.

6.27.1 Council, Agency and Adjoining Landowner Consultation

Consultations were conducted by the proponent with a number of authorities in June 2010 and October 2010 before and after the issue of the DGRs. Those authorities consulted include:

- Ryde City Council;
- The Department of Planning;
- Sydney Water; and
- Jemena Gas Networks.

In accordance with the Environmental Assessment Requirements for this project issued by the Director-General, an appropriate and justified level of consultation is required. As outlined above, relevant public authorities have been consulted. In addition to the above, the City of Ryde Council's Manager of Community and Culture, Senior Cultural Planner and Open Space Planner have been consulted with, to gain a more detailed understanding of the likely needs of residents.

7.0 Draft Statement of Commitments

In accordance with the Director-General's Environmental Assessment Requirements, the proponent is required to include a Draft Statement of Commitments in respect of environmental management and mitigation measures on the site. The following are the commitments made by Stamford Property Services Pty Ltd to manage and minimise potential impacts arising from the Concept Plan and Stage 1 Project Application. As this is an integrated application, the draft Statement of Commitments for the Stage 1 Project Application and the future Stage 2 Development Application are set below.

Subject	Commitments	Approved by Whom	Timing
Concept Plan and Stage 1 Project Application			
Approved Project	Development on the site will be implemented in accordance with the Concept Plan entitled 'Part 3A submission' prepared by AJ+C Architects and dated 21 January 2011.	Department of Planning.	No timing. General Statement of Commitment
	Stage 1 will be implemented in accordance with the Project Application Plans entitled 'Part 3A submission' prepared by AJ+C Architects and dated 21 January 2011.	Department of Planning.	No timing. General Statement of Commitment
Approved Floor Space	The total floor area of the development shall generally be in accordance with the approved Concept Plan and shall not exceed 56,892m^2. The development shall contain a minimum 1,110m^2 non-residential land uses.	Department of Planning.	No timing. General Statement of Commitment
Apartment Mix / Accessibility	Approval is granted for a Stage 1 apartment mix of: - Maximum 52% one bedroom apartments; - Minimum 38% two bedroom apartments; - Minimum 10% three+ bedroom apartments.	Department of Planning.	No timing. General Statement of Commitment
	In order to ensure flexibility and options to live close to work, 35 SOHO apartments will be provided across the development site.	Department of Planning.	No timing. General Statement of Commitment
	10% of apartments will be provided as Class C adaptable units across the development site.	Department of Planning.	No timing. General Statement of Commitment
Parking	Approval is granted for a maximum number of 790 parking spaces.	Department of Planning.	No timing. General Statement of Commitment
Road Access and Traffic	In accordance with the recommendations of the Traffic Report prepared by Traffix and dated January 2011, a Travel Plan will be prepared which addresses: ▪ Local bus stop locations;	Department of Planning.	Prior to the issue of a Stage 1 Construction Certificate

Subject	Commitments	Approved by Whom	Timing
	▪ Bus and rail timetables; ▪ Location of taxi ranks in the locality; ▪ Location of local services within walking distance such as convenience stores, supermarkets and other retail related areas; ▪ Location of car share vehicles; and ▪ Local cycle routes including the City of Ryde cycle map.		
	The proponent commits to consulting with a car share operator such as Go Get to determine the feasibility of a car share scheme on-site.	-	Outcome of consultation submitted with Stage 2 Development Application.
Flora and Fauna and Tree Manage-ment	In accordance with the Flora and Fauna Assessment prepared by Total Earth Care dated December 2010 and the Arborist Report prepared by Earthscape Horticultural Services dated February 2011, the following will be implemented: ▪ Removal of trees should be offset with the revegetation of the Epping Road setback buffer zones and removal of exotic species from the site; ▪ Any landscaping or revegetation works are to incorporate locally indigenous native plant species, including those that are characteristic of STIF; ▪ the protection measures as recommended with the Arborists Report prepared by Earthscape Horticultural Services ▪ temporary fencing is to be installed around the construction area and machinery or materials storage areas to eliminate the potential for accidental damage to the STIF remnants and all retained trees on the site during construction works; ▪ native trees or limbs of trees that are removed as part of the clearing for the current proposal should be mulched and used on site in rehabilitation or landscaping works, for temporary sediment and erosion control during construction, or as habitat features in any restoration works.	Department of Planning.	No timing. General Statement of Commitment

Subject	Commitments	Approved by Whom	Timing
	▪ implementation of the Tree Management Plan; and ▪ planting of 20 new trees capable of attaining a height of thirteen metres at maturity.		
Structural Adequacy	The structural design will be in accordance with: ▪ AS / NZS1170.0 - 2002 General Principles; ▪ AS / NZS1170.1 - 2002 Permanent, Imposed and Other Actions; ▪ AS / NZS1170.2 - 2002 Wind Actions; ▪ AS3600 – 2009 Concrete Structures; ▪ AS3700 – 2001 Masonry; ▪ AS4100 – 1998 Steel Structures; ▪ AS1720.1 – 1997 Timber Structures; and ▪ BCA – 2009 Building Codes of Australia.	The relevant consent authority at the relevant stage	No timing. General Statement of Commitment
Construction, Waste and Traffic Impacts	Works will be carried out in accordance with the recommendations of the preliminary Construction Management Plan and Waste Management Plan prepared by Stamford Property Services and dated January 2011, and the preliminary Construction Traffic Management Plan prepared by Traffix and dated January 2011.	Department of Planning	No timing. General Statement of Commitment
	A detailed Construction Management Plan, Waste Management Plan and Construction Traffic Management Plan will be prepared and submitted when a builder is appointed and Construction Certificate documentation prepared. Further consultation regarding construction access will be undertaken with the RTA and Council prior to the completion of these Plans.	The relevant consent authority at the relevant stage.	Prior to issue of Construction Certificate.
Soil and Water Management	Details of the easement recommended in the Civil Engineering Design Report prepared by Meinhardt and dated January 2011 will be provided to the Department of Planning prior to the issue of a Stage 1 Construction Certificate.	To be negotiated with adjoining landowners	Prior to issue of a Stage 1 Construction Certificate.
	The stormwater and drainage network will be in accordance with the Civil Engineering Design Report prepared by Meinhardt and dated January 2011. Stormwater drainage infrastructure will be designed in accordance with: ▪ AS3500.3; ▪ City of Ryde Council's specifications;	Department of Planning	No timing. General Statement of Commitment

Subject	Commitments	Approved by Whom	Timing
	▪ the Concrete Pipe Association of Australia Guidelines; and ▪ the Australian Rainfall and Runoff (ARR) publication.		
	A bulk earthworks model will be provided with the Construction Certificate documentation for each stage, indicating the final cut and fill volumes.	The relevant consent authority at the relevant stage.	Prior to issue of Construction Certificate.
Environmentally Sustainable Development	Residential development will need to meet the BASIX energy consumption benchmark with a target of achieving a 4 star Green Star rating. A further ESD statement will be submitted with the Stage 2 DA.	No timing.	No timing. General Statement of Commitment
Infrastructure and Services	Future development on the site will include upgrades to energy, water, sewer and telecommunications infrastructure in accordance with service provider requirements.	Relevant Service Provider	No timing. General Statement of Commitment
Public Benefits	Public benefits provided to the wider community will include public access (provided by a covenant on the title) to communal open space areas and a proposed public meeting room on-site.	Department of Planning	No timing. General Statement of Commitment
Residential Amenity	The proponent commits to provide: ▪ a residential swimming pool; ▪ residents gym; ▪ provision of a herb / vegetable garden, the design of which will be detailed in the Stage 1 landscape plans, prior to the issue of a Construction Certificate; ▪ provision of a bicycle voucher, offering 50% off a range of bicycles approved by Stamford, for every residential purchaser; and ▪ provision of a bicycle voucher, offering 50% off a range of bicycles approved by Stamford, for every 100m^2 of non-residential GFA.	Department of Planning	No timing. General Statement of Commitment
WSUD	WSUD measures for both stages will be in accordance with the Integrated Water Management Plan prepared by AECOM and dated January 2011: ▪ rainwater harvesting for non-potable reuse including toilet flushing, clothes washing and irrigation; and ▪ harvested rainwater will be treated via a gross pollutant trap to remove suspended solids prior to discharge into the rainwater tank. In addition, the gross pollutant trap and rain gardens will be designed for the Treatable Flow Rate.	Department of Planning	No timing. General Statement of Commitment

Subject	Commitments	Approved by Whom	Timing
	Water efficient fixtures and fittings including 4 WELS star rating dual flush toilets, 6 / 5 WELS star bathroom taps and 3 WELS star shower heads are being considered to meet GBCA targets.	Department of Planning	No timing. General Statement of Commitment
Geotechnical and Contamination	Works will comply with the recommendations of the Geotechnical Investigation and Waste Classification of In-Situ Materials Report prepared by Douglas and Partners and dated January 2011, and the Preliminary Contamination Assessment prepared by Douglas and Partners and dated February 2011. The proponent commits to: ▪ carry out filling in accordance with the report; ▪ undertake regular inspection by a geotechnical engineer following each progressive lift in excavation; ▪ all load bearing foundations inspected and spoon tested by an experienced geotechnical engineer or engineering geologist; ▪ preparation of a dilapidation survey of adjacent buildings prior to and at the completion of bulk excavation works; ▪ once the site has been stripped of fill and excavated soils are stockpiled on site, an environmental scientist or engineer will inspect the site to confirm the classification of fill as General Solid Waste; ▪ fill classified as General Solid Waste will only be transported to a facility licensed to accept General Solid Waste; and ▪ the preliminary classification of natural soils as VENM will be confirmed subject to an inspection once all filling has been removed.	Department of Planning	No timing. General Statement of Commitment

Subject	Commitments	Approved by Whom	Timing
	Final or detailed design of retaining walls will be undertaken using an interactive computer software program such as WALLAP or FLAC during the progressive stages of wall construction, anchoring and bulk excavation.	Department of Planning	Prior to issue of Construction Certificate.
Building Regulations	Where non-compliances with the BCA, Alternative Solutions will be employed to address these matters.	PCA	All Alternative Solutions will be developed for approval prior to the issue a Construction Certificate.
Erosion and Sediment Control	An Erosion and Sediment Control Plan measures outlined in the Meinhardt Civil Engineering Design Report and dated January 2011 will be incorporated into a detailed Erosion and Sediment Control Plan.	PCA / Relevant Consent Authority for each stage	Prior to issue of Construction Certificate.
Landscaping	Landscaping and public domain works on the site will be implemented in accordance with the Landscape Plans entitled 'Macquarie Village Stage 1' prepared by Oculus and dated 31 January 2011, and the 'Landscape Concept Plan' (contained with the Macquarie Village Concept Plan Design Report) prepared by Oculus and dated January 2011. A further detailed landscape plan in accordance with the principles of the approved Concept Plan will be submitted prior to issue of a Construction Certificate for each stage.	The relevant consent authority at the relevant stage.	With the relevant PA / DA and prior to issue of CC.
Acoustic	Glazing will be provided in accordance with the recommendations of the Acoustic Report dated January 2011.	PCA	On plans, prior to the issue of a Construction Certificate for each stage.
	The following noise attenuation measures will be adopted for future retail / commercial tenancies as outlined in the Noise Impact Assessment prepared by Acoustic Logic and dated January 2011: ▪ locating seating below awnings and overhangs to limit noise impact to residence above; ▪ limit the number of seats within the courtyard; ▪ locating external areas where noise transmission is limited; and ▪ limit deliveries and waste removal to day time hours.	Ryde City Council	Details submitted with the Stage 2 Development Application

Subject	Commitments	Approved by Whom	Timing
	A detailed construction noise and vibration plan will be developed once construction programs have been developed further. The noise and vibration plan will be developed in accordance with the following: ▪ Australian Standard AS2436:1981 "Guide to noise control on construction, maintenance and demolition sites"; and ▪ DECCW – "Interim Construction Noise Guideline".	The relevant consent authority at the relevant stage.	Prior to the issue of Construction Certificate
Wind	The following recommendations of the Wind Report prepared by Vipac dated January 2011 will be implemented: ▪ plantation on the Epping Road, Herring Road and north-eastern boundary as per the approved landscape plans; ▪ balconies to the south facades; ▪ use of balustrades and dividing screens; and ▪ balconies or equivalent surface roughness features to the facade between Buildings Y and M as well as between Buildings M and D.	The relevant consent authority at the relevant stage.	Provided on Project / Development Application plans
	The effectiveness of wind control mechanisms will be validated prior to the issue of a Construction Certificate.	PCA or the relevant consent authority.	Prior to the issue of a Construction Certificate.
Public Art	A detailed Public Art Plan will be prepared by a suitably qualified Public Art Consultant.	Ryde City Council	To be submitted with the Stage 2 Development Application
Waste	Allowance will be made for the future collection of waste by waste contractors in accordance with all relevant regulatory requirements.	The relevant consent authority at the relevant stage.	During construction
Dedication of Type 3 Roads	The proponent will construct a Type 3 road for the proposed development as proposed on the AJ+C Concept Plans that it can be dedicated to Council as a local road. This will deliver additional public benefits to the community by providing a more permeable road network in the corridor. This commitment is however contingent on achieving the scale of development proposed in the Concept Plan and Project Application.	Ryde City Council	To be dedicated to Council prior to the issue of the Occupation Certificate for the final building of Stage 1.

Subject	Commitments	Approved by Whom	Timing
Security	In accordance with the Electrical Design Principles Statement prepared by Schelmerdines and dated December 2010, the following security features will be provided: ▪ each building will be equipped with an electronic security system which controls access using proximity card readers. Readers will be installed at key points on the site including the main entry, the entry to each residential unit and the entry / exit points of the residential car parks; ▪ PIR detectors will be installed within the common areas, lift lobbies and at the ground floor of each building; ▪ a CCTV system monitoring the entry and exit to the car parks, lift lobbies, car parks and gymnasium / pool areas; and ▪ lighting in communal open spaces, and lit footpaths on internal roads.	PCA	Prior to occupation of each building.

8.0 Conclusion

Suitability and Opportunity of the Site

The site is located in a transitioning area, which is moving from low-medium design residential developments to high-density mixed use forms. The development of higher density built form across the site has been envisaged by Council in their strategic planning for the future.

The size of the site and its proximity to infrastructure continues to provide an opportunity to provide a significant quantum of housing with superior urban design, diversity and amenity, within a mixed use development that has excellent access to public transport and amenities.

The site provides the opportunity for a residential development of a substantial scale, which will alleviate pressures faced by established residential areas to accommodate in-fill development. Further, the location of residential uses on the periphery of the mixed use spine is entirely appropriate with the core of the spine in proximity to the station dominated by retail, office and University uses, and the edges of the spine providing complementary residential uses.

Amelioration of Impact

Specialist studies accompanying this report are of a level of detail to demonstrate the suitability of the site for the Concept Plan and Stage 1 Project Application. The studies demonstrate that the proposed development is capable of being implemented without resulting in adverse environmental impacts.

The key environmental assessment issues identified on the site relate to compliance with relevant Acts, Environmental Planning Instruments and guidelines, urban design and built form, internal residential amenity, solar access and overshadowing, economic and social impacts, view analysis, traffic and transport, wind impact, noise, environmentally sustainable development, soil and water management, structural adequacy, geotechnical as well as construction and waste management. The suitability of the scheme with respect to these aspects has been assessed, and it is considered that any proposed impacts of the Concept Plan and Project Application will be effectively mitigated by the draft Statement of Commitments, which supplements the findings of the Environmental Assessment.

Compliance with Sustainability Design Objectives

Assessment of the Concept Plan and Stage 1 Project Application has demonstrated that the detailed and indicative building envelopes are generally consistent with the 10 design quality principles of SEPP 65.

Expert opinion has been sought on measures through which the energy efficiency of the proposal may be maximised. The Concept Plan and Stage 1 Project Application have been assessed for their fulfilment of sustainability objectives and strategies and seeks to commit to a 4 Green Star Energy Rating. The assessment concludes that the proposal directly implements desirable sustainability strategies and also allows for the subsequent implementation of more detailed strategies in the future development of the site.

Fulfilment of Strategic Objectives

This environmental assessment demonstrates that the Concept Plan will guide future development of the site so as to be consistent with regional strategic objectives. It shall help meet anticipated sub-regional housing targets in a built form that better responds to market conditions and levels of amenity demanded by purchasers.

Discussion in this report and appended specialist consultant reports demonstrates that the Concept Plan is consistent with the relevant provisions of the State Plan, the Sydney Metropolitan Strategy and the State Environmental Planning Policies applying to the site. The proposal provides high density residential uses within close proximity of transport services and employment opportunities.

Recommendation

The Concept Plan and Stage 1 Project Application raise no adverse environmental impacts that cannot be effectively managed via the Statement of Commitments.

Given the justification for the proposal, its fulfilment of strategic objectives and the matters discussed in this report, we have no hesitation in recommending the Concept Plan and Stage 1 Project Application for approval.