_planning

ENVIRONMENTAL IMPACT STATEMENT

Royal Institute for Deaf and Blind Children (RIDBC)
Centre of Excellence
Macquarie University

(SSD 10451)

WMK

Submitted to
NSW Department of Planning, Industry & Environment
on behalf of

Royal Institute for
Deaf and Blind Children

November 2020

ENVIRONMENTAL IMPACT STATEMENT DECLARATION & CERTIFICATION

This Environmental Impact Statement (EIS) has been prepared for the Royal Institute for Deaf and Blind Children (RIDBC) and assesses the potential environmental impacts which could arise from the development of the new RIDBC Centre of Excellence at Macquarie University (SSD 10451).

This EIS has been prepared in accordance with clauses 6 and 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). It contains all available information that is relevant to the environmental assessment of the development to which the statement relates. The information contained in the statement is neither false nor misleading and provides a true and fair review of the activity / development in relation to its likely impact on the environment.

Version	Date
Version 1 – Client / MQU 100% Review	6 October 2020
Version 2 – Test of Adequacy	9 October 2020
Version 3 - Final - Lodgement	12 November 2020

Reproduction of this document or any part thereof is not permitted without prior written permission of _planning Pty Ltd.

_planning 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 and reviewed by:

Oliver Klein BA MURP MPIA RP
Director
_planning Pty Ltd
L6, 58 Pitt Street
Sydney NSW 2000

Date: 12 November 2020

Table of Contents

Table of Figures

Supporting Documents

A Quantity Surveyor Statement
Slattery

B Architectural Plan Set and Design Statement
WMK

C Landscape Plan Set and Design Statement
Oculus

D Survey
LTS

E Proposed subdivision plans
LTS

F Transport Impact Assessment
JMT Consulting

G Geotechnical Assessment
JK Geotechnics

H Detailed Site Investigation
JBS&G

I Stormwater and Flood Management and Services Infrastructure Report
LP Consulting

J BDAR Waiver Request / BDAR Waiver / Biodiversity addendum assessment
Lesryk

K Arboricultural Impact Assessment
Australis Tree Management

L Bushfire Hazard Assessment
Bushfire Planning & Design

M Aboriginal Cultural Heritage Assessment Report
Extent

N Statement of Heritage Impact
GBA Heritage

O External Lighting Strategy Report
LCI

P Operational Waste Management Plan
Elephant's Foot

Q ESD
JHA

R Preliminary Construction Management Plan
mProjects

S CPTED Design Assessment
LCI

T BCA Assessment Report
BM&G

U Access Review
Morris Goding Access Consulting

V Noise Impact Assessment
White Noise Acoustics

W RIDBC - Public Benevolent Institution and not-for-profit certificates
RIDBC

1.0 EXECUTIVE SUMMARY / INTRODUCTION

This Environmental Impact Statement (EIS) is submitted to the NSW Department of Planning, Industry & Environment (DPIE) in support of a State Significant Development (SSD) Development Application (DA) with respect to the proposed construction and operation of the new Royal Institute for Deaf and Blind Children (RIDBC) Centre of Excellence at Macquarie University within the City of Ryde Council LGA.

RIDBC is Australia's largest non-government not-for-profit provider of therapy, education and cochlear implant services for children and adults with vision or hearing loss. Established in 1861 as a school with residential facilities, RIDBC moved to North Rocks in 1961, where the main campus is still located. The RIDBC Mission is to provide quality and innovative services, to achieve the best outcomes for current and future generations of Australians with vision and/or hearing loss.

RIDBC provides a broad range of specialist services which include:

- Early Intervention;
- Allied Health & Therapy;
- Cochlear Implant Program;
- Schools (pre-school, primary to secondary programs);
- Research & Professional Education;
- School support; and
- Paediatric Audiology.

The services provided are delivered by a broad group of professionals including: teachers, speech pathologists, occupational therapists, audiologists, orthoptists, psychologists, social workers, technology consultants, physiotherapists, and Ear, Nose and Throat (ENT) surgeons.

As part of RIDBC's 2016-2020 Strategic Intent it will relocate its school and clinical services activities from North Rocks to a purpose-built centre at Macquarie University (MQU). The new Centre of Excellence will further strengthen the relationship between MQU and the RIDBC, benefit the Australian Hearing Hub, and reinforce the cluster of research, audiology, and healthcare which already exists on the campus, which also includes the Cochlear global headquarters.

The Centre of Excellence will serve a diverse range of employees, students, users and visitors who will visit the centre for diagnostic services, therapy and rehabilitation, research, education, and corelated services. The centre will provide an intricate design response to the needs of the users, in particular children and adults with vision and hearing loss and other cognitive impairments.

The proposed development generally seeks consent for the construction and operation of the new purpose-built 1-3 storey (including basement level) Centre of Excellence across two interconnected pavilions at the corner of Culloden Road and Gymnasium Road within the MQU Campus. The development includes:

- Pre-School and School accommodation for up to 80 pre-school children and up to 120 school children in a single-storey pavilion addressing Culloden Road; and
- The main RIDBC building (accommodating approximately 260 staff) of up to three storeys, including basement level. The main RIDBC building houses:
    - Public areas for staff and visitors;
    - RIDBC Renwick Centre classrooms (doubling also as conferencing facilities) and a business hub;
    - RIDBC Renwick Centre resource centre which is co-shared between RIDBC Renwick Centre staff, clinicians and pre-school / primary school teaching staff; and
    - Medical facilities for various clinical services.

The Centre of Excellence will replace RIDBC's existing headquarters at North Rocks. The proposed development is about 10,475m2 in GFA and includes a total of 58 parking spaces, including 38 underground / basement car parking spaces, as well as 18 drop-off or short-duration parking spaces for the school uses via a porte cochere off Culloden Road, and 2 short-term visitor parking spaces via a porte cochere to the main entrance of the building off Gymnasium Road.

The site is located at MQU addressing both its Culloden Road and Gymnasium Road frontages. The proposed development site sits within the western portion of the MQU campus, near the junction of Culloden Road and Gymnasium Road. The site sits partly within Lot 191 DP 1157041 and partly within Lot 8 DP 1047085 within the campus. Part of the development involves subdivision to rationalise this existing subdivision pattern and to create a new dedicated land parcel for RIDBC to facilitate the ground lease between MQU and RIDBC. MQU is the owner of the site and has granted landowner's consent for the DA.

The site is partly cleared and subject to stands of planted native vegetation and trees at the perimeter of a managed turfed area. 121 trees are proposed to be removed of a total of 287 trees on the overall development site. Accordingly, 166 trees are proposed to be retained and be augmented with new plantings, including 92 new trees within the development site.

The site's location at Culloden Road and with respect to the rest of the MQU campus is shown on **Figure 1**.

Figure 1 – MQU Campus with the site circled (SixMaps)

A detailed description of the proposed development is set out in Section 4.0 of this EIS, with additional commentary on the design and environmental aspects of the development.

The estimated Capital Investment Value (CIV) of the development is $74.513 million (excluding GST) as per the CIV definition. A Quantity Surveyor Statement accompanies this EIS at **Appendix A**.

In accordance with Schedule 1 (clause 15(1)) of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP), the development qualifies as SSD as it is a *development for the purpose of a new school (regardless of the capital investment value)*.

Architectural plans of the proposed development are included at **Appendix B**. Landscape plans are included at **Appendix C**.

We also note that Planning Circular *PS17-004 – Regulating expansion of schools* provides principles for consent authorities to consider in determining whether to place a condition on a consent that will impose any numerical limit on student and staff numbers at school sites. It is RIDBC's preference that no limits be imposed so that the intent of the available provisions of *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* is maintained and maximised to ensure appropriate flexibility. This EIS addresses the relevant principles as part of its assessment.

This EIS has been prepared by _planning Pty Ltd on behalf of RIDBC, the applicant. This EIS describes the site, its environs, the proposed development, and provides an assessment of the proposed development in terms of the matters for consideration under Section 4.15 of the *Environmental Planning & Assessment Act, 1979* (EP&A Act). This EIS also satisfies the various requirements of clauses 6 and 7 of the EP&A Regulation.

The DA has been prepared with reference to architectural drawings provided by WMK as well as other supporting documentation.

2.0 SITE ANALYSIS

2.1 The Site's Context

The proposed development site sits within the western portion of the MQU campus, near the junction of Culloden Road and Gymnasium Road – see **Figure 2** below. It also has a frontage to West Precinct Road to its south-east.

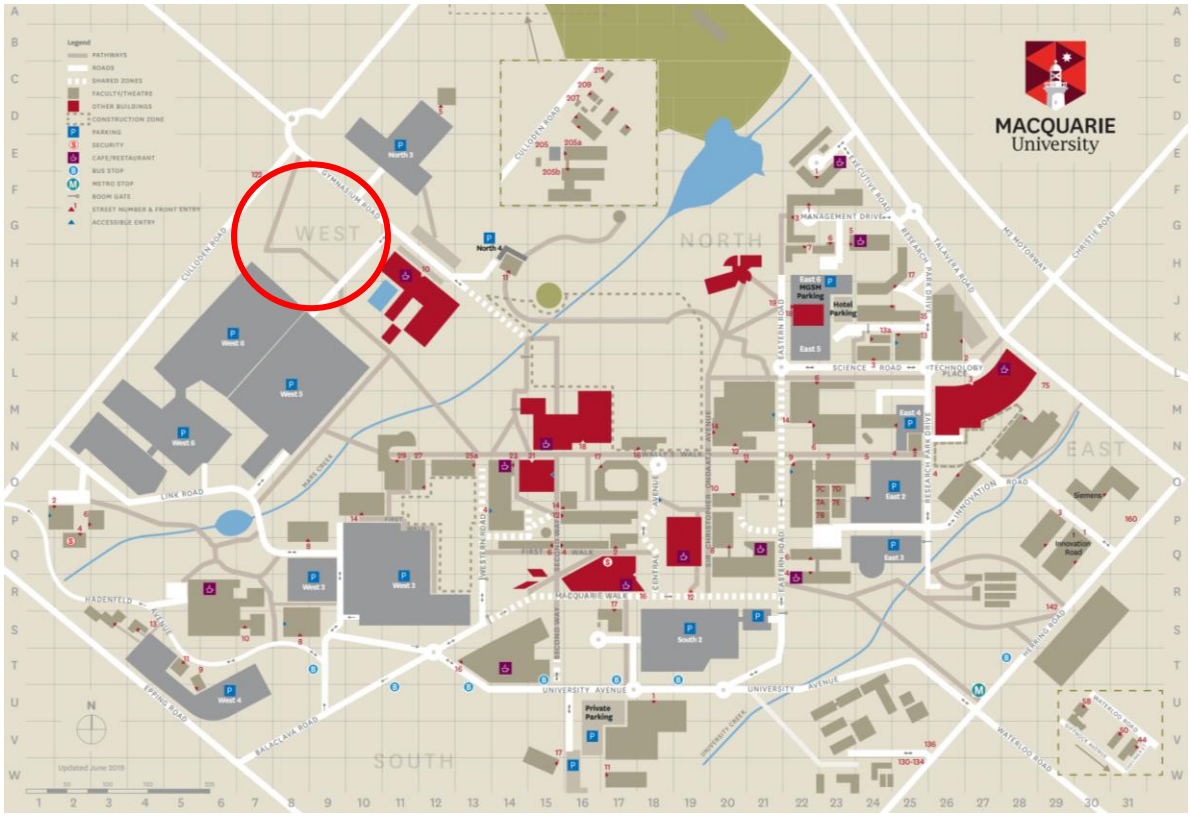

Figure 2 – MQU Campus Map with the site circled (MQU)

The site sits partly within Lot 191 DP 1157041 and partly within Lot 8 DP 1047085 within the campus. The site is partly cleared and subject to stands of planted native vegetation and trees at the perimeter of, and interspersed within, a managed turfed area. The aerial photographs at **Figures 3** and **4**, as well as site photos at **Figures 5-14** show the extent of this vegetation and existing managed and turfed areas.

The development site has been defined for subdivision purposes and is 1.934 ha in area – see the existing survey at **Appendix D** and the proposed subdivision plans at **Appendix E**.

The development site sits to the west (and uphill) of the existing MQU gymnasium, swimming pool and sporting facilities complex. Other university development existing along the Culloden Road frontage of main campus near the site is at this time generally confined to the temporary at-grade car parks. These sites are also defined as future development sites under the prevailing planning regime applicable to MQU, chiefly the approved MQU Part 3A Concept Plan.

Directly opposite the site on Culloden Road is the Macquarie University Village, a student housing precinct operated by Campus Living. Marsfield Park is located opposite the site along Culloden Road further to the west. This park amongst other things is also used by the Riding for the Disabled organisation. Residential development along Culloden Road is generally confined to the low-rise medium-density Marsfield Gardens strata-titled development at 94-116 Culloden Road near the intersection with Epping Road, and the strata-titled unit development at

140-144 Culloden Road, at the intersection with Waterloo Road to the site's north. Site context photos are included at **Figures 15-17**.

Figure 3 – The Site (SIX Maps)

Figure 4 – The development site – indicative boundary (SixMaps)

Figure 5 – Development site facing south

Figure 6 – Development site facing north

Figure 7 – Development site facing north-east towards the Gymnasium Road and MQU sporting facilities

Figure 8 – Existing pathway through middle of development site

Figure 9 – Development site facing north-east towards West Precinct Road

Figure 10 – Development site facing south-west

Figure 11 – Development site from West Precinct Road – facing north-west

Figure 12 – Development site from West Precinct Road – facing south-west

Figure 13 – Development site from Gymnasium Road

Figure 14 – Stand of trees to be retained at Gymnasium Road

Figure 15 – Macquarie University Village at Waterloo, Culloden, and Gymnasium Roads

Figure 16 – Marsfield Park and the Riding for the Disabled Facility

Figure 17 – Mid-rise development west of the development on Culloden Road

2.2 Property description and ownership

As noted, the site sits partly within Lot 191 DP 1157041 and partly within Lot 8 DP 1047085 within the campus. See survey at **Appendix D**.

The land is owned by Macquarie University. RIDBC will lease the subdivided site from Macquarie University – see proposed subdivision plans at **Appendix E**. The university has provided its landowner's consent to this development.

2.3 Existing Development

The site is presently an undeveloped part of the MQU campus, but which is identified as a development site arising from the 2009 approved MQU Part 3A Concept Plan and its supporting documents. The site presently operates as both a formal and informal pedestrian link between the Macquarie University Village student housing precinct and the MQU sporting facilities and the wider campus. The site is generally best described as partly vegetated managed lands.

The site was acquired by MQU in 1965, and prior to 1965 formed part of the 'green belt' around Sydney to contain urban growth under the 1948 County of Cumberland Planning Scheme. The site has historically and principally been used as market gardens or orchards from at least the 1930s, prior to the acquisition of the land by MQU. As noted, the site is a pre-existing disturbed environment and the current trees are all planted native specimens.

2.4 Transport, Traffic and Access

There is no existing direct vehicular access to the site. The site is however bounded directly by Culloden Road (a public Council-owned road), and Gymnasium Road and West Precinct Road (each MQU-owned roads internal to the campus). West Precinct Road enables access to the

temporary at-grade car parks to the south-west of the site. These roads each provide direct vehicular access to the site under this DA.

Broadly, MQU's campus is provided with excellent public transport connections in the form of both Metro and bus services.

The campus is served by both public and private bus services. A number of routes stop along University Avenue, with other routes stopping along Herring Road and Waterloo Road. In addition to public bus services, there are a number of private bus services in operation (i.e. Forest Coach Lines, Transdev NSW Buses and Hillsbus).

The following Sydney Buses routes (amongst many others) service the campus:

- Route 140 Epping to Manly Wharf via Macquarie University
- Route 459 Macquarie University to Strathfield via Ryde
- Route 506 Macquarie University to City Domain via East Ryde
- Route 507 Macquarie University to City Circular Quay via Putney
- Route 518 Macquarie University to City Circular Quay

Macquarie University Metro Station is serviced by the North-Western Metro line. The station is located at the eastern extremity of the campus at Herring Road, some 1,000 metres (10-15 minutes' walk) east of the RIDBC site.

MQU is also currently using on-demand transport (the Macquarie Park Keoride) as well as its own shuttle bus within the campus.

The development site itself is also served by two bus routes with a nearby bus stop on Culloden Road. Routes 292 - Marsfield to City Erskine St via Macquarie Park, and 410 – Hurstville to Macquarie Park run seven days per week and around the clock.

There are currently approximately 4,800 on-site parking spaces across the campus in a mixture of multi-storey and at-grade car parks available to staff, student and visitors. This includes some 1,360 spaces in the temporary at-grade car parks to the south-west of the site. These are time-limited ticketed spaces. The maximum car parking permitted across the campus is 10,800 spaces, comprising a maximum of 5,000 car parking spaces for commercial uses and 5,800 spaces for other uses.

In addition to private and public transport modes outlined above, four car share (GoGet) pods are located to the south of the MQU campus along Herring Road. A further GoGet pod is located within Macquarie Shopping Centre.

A Traffic Impact Assessment has been prepared by JMT Consulting and accompanies this EIS at **Appendix F**.

Note also, that whilst the campus is serviced by the Metro, the development site itself is well removed from the Epping-Chatswood Rail Tunnel and its reserve areas which run underneath the MQU campus. As seen in **Figure 18**, the development site is not sufficiently close to the tunnel and its reserve areas to require detailed consideration of impacts during either the design or the assessment of the development.

Figure 18 – MQU and Epping-Chatswood rail easement (Cox and LTS)

2.5 Utilities and Services

The site is currently serviced by, or is able to connect to:

- Sydney Water potable water at Culloden Road;
- Sydney Water sewer infrastructure to the east of the site;
- Ausgrid electricity supply at Culloden and Gymnasium Roads;
- Jemena natural gas at Culloden Road;
- NBN and telecommunications through the site and at Culloden and Gymnasium Roads; and
- MQU stormwater infrastructure.

New services or augmentation will be needed in relation to some of these existing connections and utilities to service the site and development.

2.6 Topography

The development site generally slopes from the south-west and north-west to the east and north-east. It falls from RL 80 at Culloden Road to RL 73 at its boundary with the junction of Gymnasium Road and West Precinct Road. This is a fall of about 7m over a diagonal length of over 200m across the site. The southern boundary of the development at West Precinct Road sits at RL 70 at its lowest point, with a fall of about 10m over a distance of 120m.

A survey of the site prepared by LTS accompanies this EIS at **Appendix D**.

2.7 Geology, Groundwater, Acid Sulphate Soils and Contamination

Geology

The NSW OEH eSPADE website and Sydney 1:100,000 Geological Series Sheet identifies the site as having soils underlain by Wianamatta Group Ashfield Shale (laminate and black to dark grey shale) and Bringelly Shale (shale, calcareous claystone, laminate and fine to medium grained lithic-quartz sandstone) formations and Hawkesbury Sandstone. The site was identified as situated on the Glenorie (gn) soil landscape which consists of a dominant brown loose loamy sand with a coarse-grained texture (OEH 2020). The soil profile is dominated by clays, silty clays, and clayey shales. Some sandstone bedrock was encountered in testing at depth.

Groundwater

In undertaking its Detailed Site Investigation in September 2020, JBS&G, searched the National Groundwater Information System database for licensed groundwater bores within 500 m of the

site. The search did not identify any bores within this distance of the site. However, during the site inspection two groundwater monitoring wells were identified within the site. The wells were identified as having total depths of 4.6m and 3.85m, respectively. Given the clayey soils at the site, any groundwater movement is considered to be minimal.

Similarly, JK Geotechnics identified in its September / October 2020 testing that no groundwater seepage was encountered during auger drilling, but groundwater was measured on completion of augering at a depth of 6.8m in one borehole only.

Acid Sulfate Soils

No acid sulfate soils are found at the development site, and the MQU campus is not mapped by Council in its LEP as containing these soils. Acid sulfate soils are generally associated with low-lying coastal areas, including estuarine flood plains, rivers and creeks. Accordingly, there is no known occurrence of acid sulfate soils, consistent with the topography and geology of the site. Based on this information, the risk of encountering acid sulfate soil materials at the site or in the immediate vicinity is considered to be negligible. An acid sulfate soil management plan is not considered to be required. A Geotechnical Assessment has been prepared by JK Geotechnics and accompanies this EIS at **Appendix G**.

Contamination

A Detailed Site Investigation (DSI) was prepared by JBS&G in September 2020– see **Appendix H**. Assessment comprising the DSI was completed at the site to address the Department's issued SEARs and to provide preliminary waste classification consistent with EPA-made and endorsed guidelines including NEPC (2013) National Environmental Protection Measure (NEPM).

The following findings were made in relation to the site by JBS&G:

- *A total of 27 soil sample locations were advanced across the site. With the exception of isolated reworked natural soil to 1.2 m below ground level (bgl) the site lithology generally consists of a 0.15 – 0.35 m sandy silt fill/topsoil underlain by silty clays, clays and clayey shales;*
- *Analysis of selected samples of surficial and sub-surface soils for a broad range of compounds of potential concern (COPCs) including heavy metals, polycyclic aromatic hydrocarbons (PAH), total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene and xylene (BTEX), organochloride pesticides (OCPs), polychlorinated biphenyls (PCBs) and asbestos. All COPC concentrations were below the NEPC (2013) health-based and ecological assessment criteria with the exception of one soil sample in which benzo(a)pyrene (a PAH compound) exceeded the adopted ecological criterion.*
- *Groundwater was assessed through consideration of soil data and obtaining data on potential for elevated COPC to leach from the soil profile. As soil data did not indicate any contamination at depth, and low COPC concentrations were reported in soil at all locations, data indicating low leaching potential provides further line of evidence that groundwater impacts are not likely at the site;*
- *The investigation did not identify unacceptable contamination or aesthetic risks for the intended land use;*
- *Preliminary waste classification results indicate that should fill or topsoil require off-site disposal it could be classified as GSW. Subject to confirmatory sampling prior to removal, fill/topsoil where concentrations were below CT1 criteria may be able to be recycled. Undisturbed natural soils are likely to be classifiable as virgin excavated natural material (VENM). Waste classification should be confirmed prior to disposal of any surplus soil during future earthworks; and*
- *It is considered that the site is suitable for the proposed development.*

2.8 Drainage and Flooding

The site sits within the drainage catchment of Mars Creek which sits some 200m to the east of the development site. Mars Creek further drains to the north into the Lane Cove River. Flood

mapping and modelling carried out by Brewsher Pty Limited for City of Ryde Council in February 2011 indicates that the site is generally unaffected by flooding in the 1:100 year (1% AEP) event – see **Figure 19** below.

A flood and stormwater assessment is included as part of **Appendix I**.

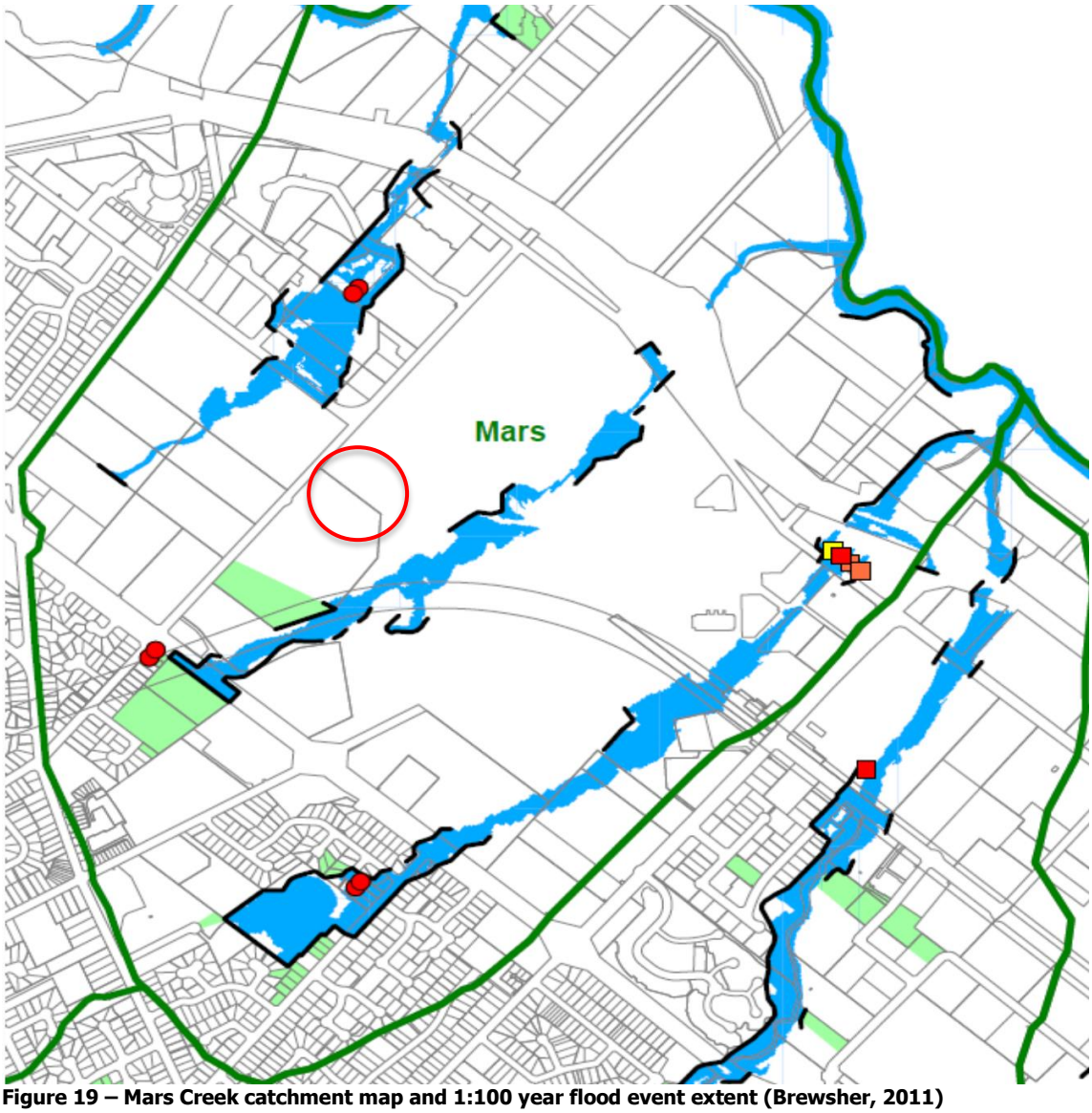

Figure 19 – Mars Creek catchment map and 1:100 year flood event extent (Brewsher, 2011)

2.9 Biodiversity and Arboricultural Matters

Lesryk previously prepared a detailed flora and fauna assessment following a site inspection and desktop review to establish the biodiversity characteristics and status of the site in relation to Commonwealth and NSW biodiversity requirements. This was prepared to support the successful BDAR Waiver request at the time of the SEARs Request. The assessment addressed the specific requisite matters at Section 1.5 of the *Biodiversity Conservation Act 2016* (BC Act) and Clauses 1.4 and 6.1 of the *Biodiversity Conservation Regulation 2017* as well as other legislative considerations and requirements.

On the basis of the conclusions reached by Lesryk (August 2019 and again in March 2020) in the Biodiversity Development Assessment Report (BDAR) waiver request, the condition of the site from a biodiversity perspective is as follows:

- No threatened species, populations, or communities listed under the Commonwealth EPBC Act were recorded, nor were any likely to occur, or rely upon the resources present, within the proposed development area;
- The vegetation present is not considered to conform to either of the two threatened ecological communities known to occur within the locality, these being:
    - Sydney Turpentine Ironbark Forest (STIF) - critically endangered ecological community (EPBC and BC Acts)
    - Blue Gum High Forest - critically endangered ecological community (EPBC and BC Acts);
- No threatened species, populations, or communities listed under the BC Act were recorded;
- 10 hollow-bearing trees were observed, these having the potential to provide habitat for those threatened hollow-dependent microchiropterans (BC Act listed) that have been previously recorded within the study region;
- Of the hollow-bearing trees observed three may require removal as part of the development though with adequate site planning all could be retained;
- An assessment referring to the criteria provided under Section 7.3 of the BC Act (i.e. the assessment of significance or as it is commonly known, the five-part test) found that the proposed development is unlikely to have a significant effect on these species, or their habitat;
- Referral of the matter to the Commonwealth Minister for the Environment and Energy for further consideration or approval is not required;
- Based on a review of the Biodiversity Value Map, no areas of high biodiversity value, as defined by the NSW Biodiversity Conservation Regulation 2017 (the Regulation), occur within the subject site;
- No Areas of Outstanding Biodiversity Value listed under Part 3 of the Regulation are present within, or close to, the proposed development; and
- The preparation of a Biodiversity Development Assessment Report (BDAR) is not required.

Figure 20 sets out the results of Lesryk biodiversity assessment at the time of the BDAR waiver request, showing the predominance of Urban Exotic/Native vegetation at the site.

Note also that the requirement for a BDAR in relation to the development has been jointly waived by DPIE and DPIE's Environment, Energy and Science Group on 27 April 2020 and 16 April 2020, respectively. The waiver and the supporting waiver request documentation is included as part of this EIS package at **Appendix J**. The waiver issued reinforces the findings of Lesryk as set out above.

The development site contains 287 planted (predominantly native) trees of varying ages and health. Details relating to these trees, their proposed removal and proposed protection measures for those to be retained are provided within the Arboricultural Impact Assessment appended to this EIS at **Appendix K**. In that assessment, it was confirmed that there does not appear to have any remnant vegetation on site. The subject site has been highly modified with the removal of native under storey and ground cover plants and shrubs. The subject dominant trees *Eucalyptus microcorys* (Tallowwood) together with other indigenous trees in the surrounding residences are lightly connected to ecological communities nearby, noting Tallowwoods are naturally occurring from the Central Coast of NSW north into Queensland. To that end, the findings of the ecologist and arborist accord.

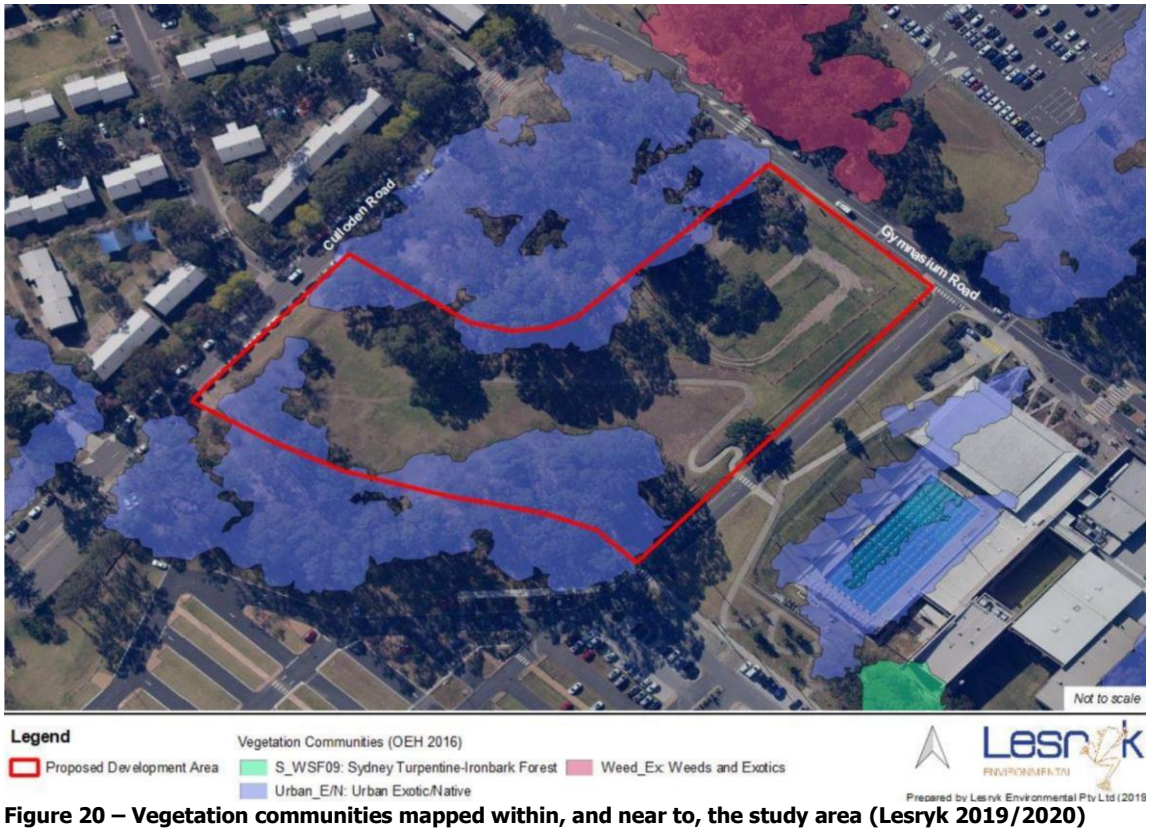

Figure 20 – Vegetation communities mapped within, and near to, the study area (Lesryk 2019/2020)

2.10 Bushfire

The site is identified as bushfire affected on the most recent available Council-based bushfire map – see **Figure 21** over. This is solely by virtue of the site presently sitting within part of Lot 191 of DP 1157041 which is in part affected by Vegetation Category 2 and 100m Buffer bushfire risk. The development site is some 220m from the nearest point of the bushfire threat within the campus and 170m from a bushfire threat to the rear of Marsfield Park.

The proposed subdivision of the site would have the effect of the site not being bushfire affected or on bushfire prone land. Notwithstanding, the proposed development is considered to be a Special Fire Protection Purpose (SFPP) development as defined under section 100B of the *Rural Fires Act 1997*. A Bushfire Safety Authority from the NSW Rural Fire Service (RFS) is required for the development.

The Bushfire Hazard Assessment at **Appendix L** indicates that the development site is categorised as managed lands and there is no mapped bushfire prone vegetation within a minimum radius of 150m of the proposed development in all directions. Based on the above, it is deemed that the proposed development is assessed as BAL-LOW as specified in AS-3959.

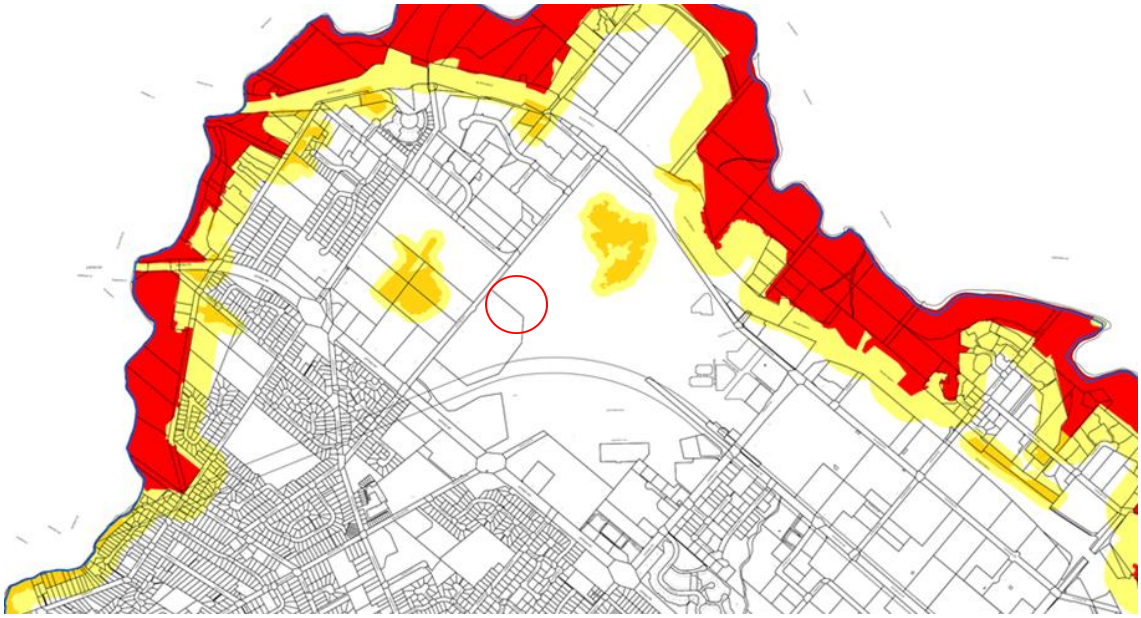

Figure 21 – Bushfire Prone Land map (Ryde Council) – site circled.

2.11 Aboriginal Cultural Heritage

A campus-wide Aboriginal Cultural Heritage Assessment Report (ACHAR) has been prepared by Extent. It broadly concludes the development site has moderate archaeological potential only and is not identified as one of the areas of high archaeological potential.

With respect to this site, a site- and development-specific ACHAR has further been prepared by Extent. Archaeological test excavation of the RIDBC site was undertaken between 22 and 25 September 2020. The archaeological excavation program consisted of the excavation of 43 50x50cm test pits across the proposed impact footprint, in a systematic grid with 20m spacing (amounting to a total excavated area of 10.75m2).

Post excavation analysis and reporting of the results of the archaeological test excavation indicates that no Aboriginal cultural material or objects were recovered, and despite the presence of natural (albeit shallow) silty clay topsoils on an elevated ridgeline spur, the study area is unlikely to retain evidence of Aboriginal occupation in the form of Aboriginal stone objects.

The cultural significance of the Lane Cove River, 1.2km to the northeast of the study area, and the importance of early Aboriginal and settler interaction following colonisation of the Field of Mars Creek Common (in which the study area broadly sits) was noted by Registered Aboriginal Parties (RAPs) during consultation. No intangible cultural values specific to the study area were identified.

The site-specific ACHAR by Extent is attached to this EIS at **Appendix M**.

2.12 Heritage

The larger part of the MQU campus is affected by heritage mapping under the Ryde LEP 2014 (LEP). As seen from **Figure 22** over, Lot B03 sits partly within the heritage affectation and partly outside of it due to the site spanning Lot 191 DP 1157041 and Lot 8 DP 1047085 within the campus.

Clause 5.10 of the LEP, Heritage Conservation, seeks to conserve the environmental heritage of Ryde including its listed heritage items, conservation areas, archaeological sites and Aboriginal heritage. Although a large portion of Macquarie University is identified as an item of local

heritage significance on the LEP Heritage Map, the heritage item itself is item No. 10 'Macquarie University Ruins' as identified under Schedule 5 of the LEP (see extract below).

Macquarie University (ruins) - 192 Balaclava Road Part Lot 18, DP 1058168 Local item 10

The ruins are the remains of a stone farm building predating the university use, but however known as the 'Macquarie University ruins', which is situated towards the central part of the University campus adjacent to the Lighthouse Theatre car park – the location of which is indicatively circled on **Figure 22** and is shown in **Figure 23**. It is important to note that although a broad area of the campus is identified on the LEP heritage map, the listing is clarified under Schedule 5 of the LEP. See also the Statement of Heritage Impact at **Appendix N**.

Through planning processes over a number of years and over a number of applications, it has generally been established that the mapping is an anomaly arising from the LEP mapping convention in place at the time which mapped whole lot and cadastral boundaries rather than the individual heritage item itself. Numerous other planning instruments and LEPs map individual items and their curtilages.

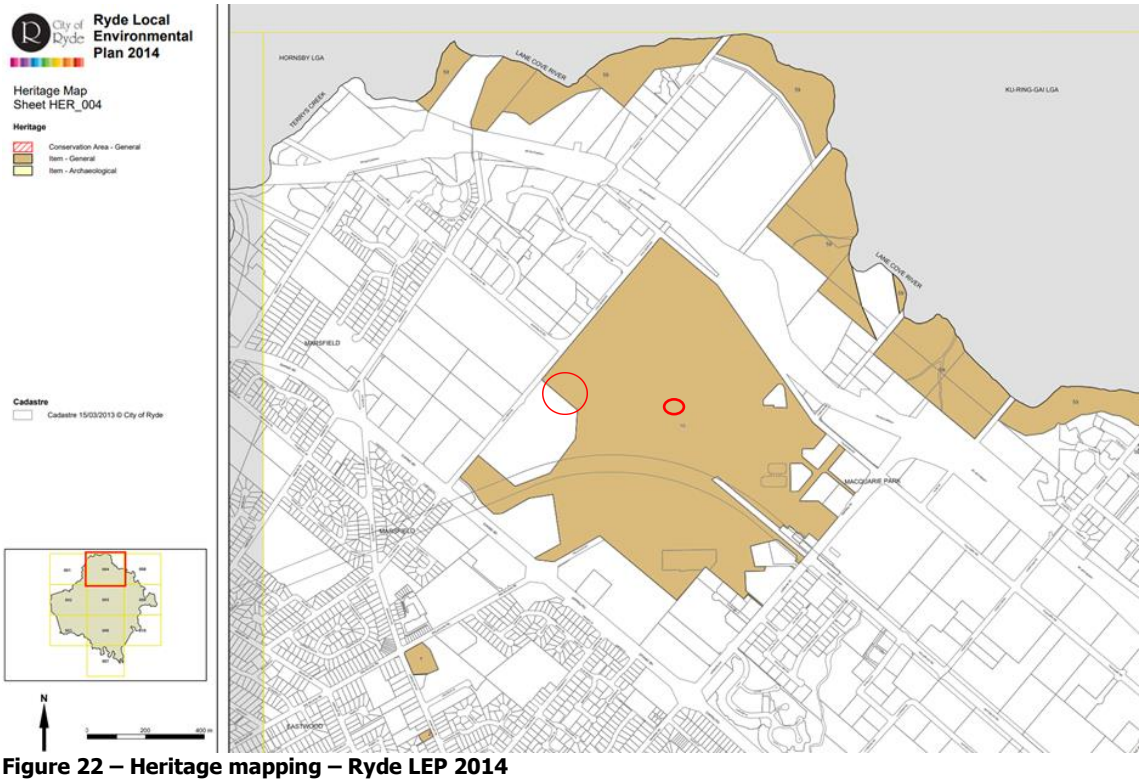

Figure 22 – Heritage mapping – Ryde LEP 2014

Figure 23 – Macquarie University Ruins

2.13 Review of site-specific environmental or planning constraints

Based on the above, and a review of information from Council's LEP and the current NSW Planning Portal eplanning spatial viewer webpage, the following reinforces the lack of key environmental or planning issues with respect to the site's characteristics. The development site is generally unaffected by:

- The Epping-Chatswood Rail Tunnel, its easement, and its reserve areas;
- Flood planning controls and flooding;
- Landslide risk;
- Mine Subsidence;
- Acid Sulfate Soils;
- Salinity;
- Groundwater vulnerability;
- Riparian Lands or watercourses;
- Wetlands;
- Environmentally Sensitive Lands;
- Biodiversity;
- Green Grid – Existing Green Assets (Sydney);
- Bushfire risk;
- Heritage and Aboriginal cultural heritage; and
- Contamination.

It is also well serviced by transport links and public transport, is readily able to be serviced with utilities and is an appropriately located site to cater for development as envisaged by the approved MQU Part 3A Concept Plan for the site.

2.14 Summary

In summary, based on the above, the site is highly suitable to accommodate the proposed development, subject to appropriate design considerations, and construction and operational management to mitigate any possible impacts. Based on the site's prevailing characteristics, location, and the scale of the development, the likely impacts will be negligible or minor. No significant environmental impacts are likely to arise. Site suitability is further addressed at the conclusion of the assessment at Section 7.0 of this EIS.

3.0 RELEVANT PLANNING POLICIES, INSTRUMENTS, AND CONTROLS

3.1 Strategic Planning Framework

The site, proposal, and LGA are subject to the following strategic planning policies:

- *NSW State Priorities.*
- *The Greater Sydney Regional Plan, A Metropolis of three cities.*
- *Future Transport Strategy 2056.*
- *State Infrastructure Strategy 2018 – 2038 Building the Momentum.*
- *North District Plan.*
- *Macquarie University Master Plan 2014.*
- *Sydney's Cycling Future 2013.*
- *Sydney's Walking Future 2013.*
- *Sydney's Bus Future 2013.*
- *Better Placed: An integrated design policy for the built environment of New South Wales (Government Architect NSW (GANSW), 2017).*
- *Healthy Urban Development Checklist (NSW Health, 2009).*
- *Draft Greener Places Policy (GANSW)*

The proposal's consistency with these strategies is set out in the subsections that follow.

3.1.1 NSW Premier's and State Priorities

The NSW government has identified a series of 12 Premier's and 18 State priorities, targeting economic growth, infrastructure delivery, protection of the vulnerable, and improvement of both school education and public services across NSW. The NSW State priorities that are applicable to this development are considered and addressed below.

The Premier's priorities are:

- Creating jobs
- Building infrastructure
- Reducing domestic violence
- Improving service levels in hospitals
- Tackling childhood obesity
- Improving education results
- Protecting our kids
- Reducing youth homelessness
- Driving Public Sector diversity
- Keeping our environment clean
- Faster housing approvals
- Improving Government services

The NSW State priorities are:

- Making it easier to start a business
- Encouraging business investment
- Boosting apprenticeships
- Accelerating major project assessment
- Increasing housing supply
- Protecting our credit rating
- Delivering strong budgets
- Improving Aboriginal education outcomes
- Transitioning to the National Disability Insurance Scheme
- Better Government digital services

- Cutting wait times on planned surgeries
- Increasing cultural participation
- Ensuring on-time running of public transport
- Creating sustainable social housing
- Reducing violent crime
- Reducing adult re-offending
- Reducing road fatalities
- Improving road travel reliability

Of these, those relevant to the project are:

- Creating jobs
- Improving education results

Overall, the development provides an opportunity to enhance the achievement of these priorities.

Premier's Priorities

Creating jobs

The Premier of NSW is targeting jobs growth via an additional 150,000 jobs. Within the immediate short term timeframe the project is likely to only contribute construction-related jobs growth. An estimated figure of the jobs that will be created by the future development during the construction phase of the development is 205 full time equivalent construction jobs directly connected with the project and 137 indirect jobs connected with supply chain - material suppliers, logistics / transport and the like. The total operational employment at the development is about 300 staff in both the school and pre-school and the main RIDBC building, noting also that many of these are existing jobs within RIDBC's existing facilities.

Improving education results

Other priorities of the Premier related to education and improving education results appear to be more directly related to services and provision of education through the government funding of the public school system. Notwithstanding, the provision of new, improved and upgraded specialist education facilities will enhance the provision of education services and correspondingly contribute to enhanced results for the school's population.

3.1.2 The Greater Sydney Regional Plan – A Metropolis of three cities

MQU lies within the Macquarie Park Corridor, which features prominently in the Greater Sydney Commission's 40-year plan for the future of the Greater Sydney Metropolitan Area as a major Strategic Centre and a Health and Education Precinct. Specifically, the Macquarie Park Corridor is identified as a key location for Global Sydney's jobs growth, skills and productivity as part of the Eastern Economic Corridor. **Figure 24** locates Macquarie Park centrally within the proposed three cities vision.

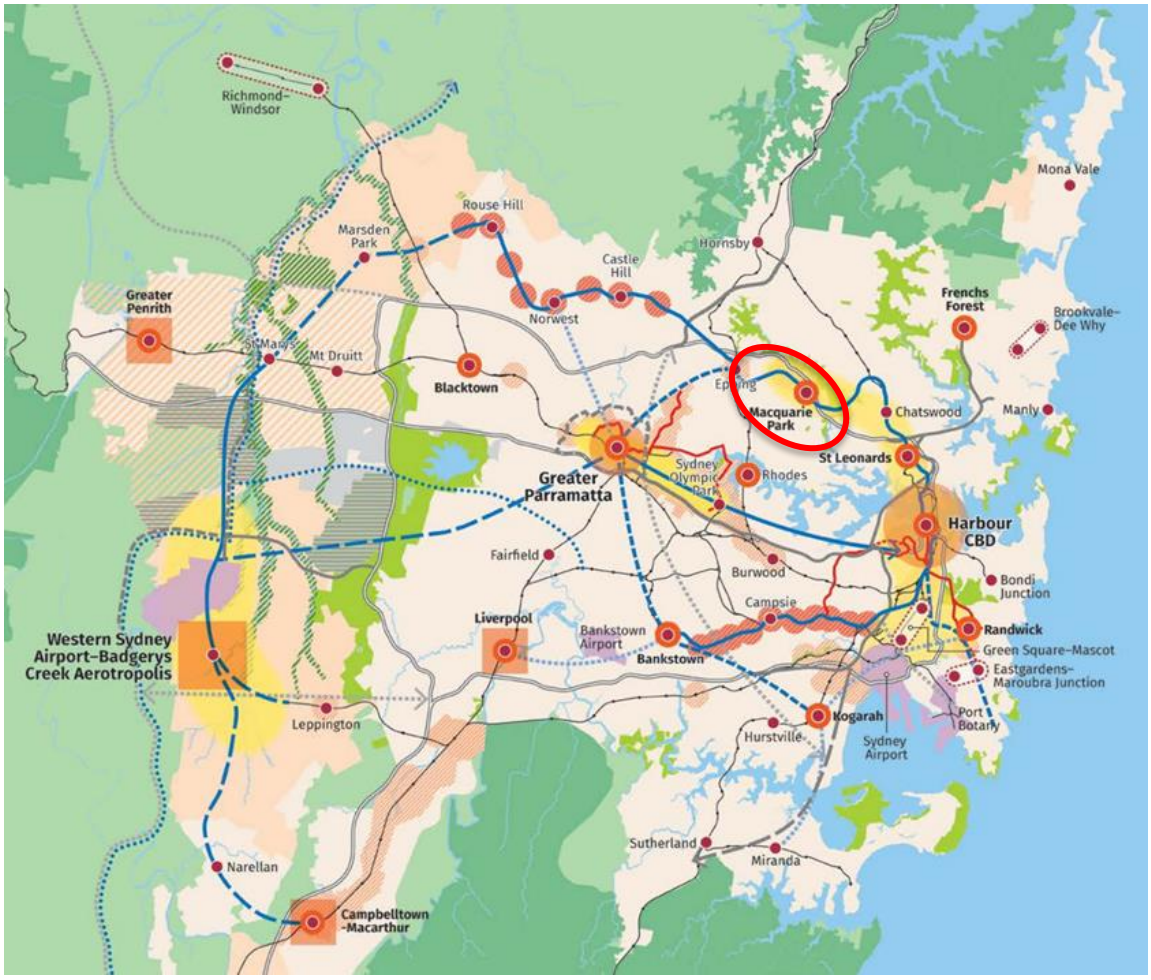

Figure 24 – Greater Sydney Structure Plan 2056 – the three cities structure plan (GSC)

3.1.3 North District Plan

The Greater Sydney Commission (GSC) published the revised and finalised District Plans in March 2018. The North District Plan forms the basis for strategic planning within the North District comprising Ryde, Hornsby, Hunters Hill, Ku-ring-gai, Lane Cove, Northern Beaches, Mosman, North Sydney, and Willoughby.

In recognition of the complex nature of the Macquarie Park Corridor and the range of stakeholders involved in planning and development of the area, the Corridor is identified as a Collaboration Area where a significant productivity, liveability or sustainability outcome is better achieved through the collaboration of different levels of government and in some cases the private sector or landowners.

Macquarie Park is also identified by the District Plan as a 'strategic centre' with a job target range of between 73,000 (baseline target) and 79,000 (higher target) by 2036. This represents growth of an additional 20,500 jobs; the most ambitious target of any centre within the North District. The strategic centre is identified as one of Metropolitan and Global Sydney's foremost CBDs in terms of jobs, investment, innovation clusters, and GSP/ GDP generation.

Of direct relevance to the proposal are the following Planning Priorities (and Actions) under the North District Plan.

- *Planning Priority N8 - Eastern Economic Corridor is better connected and more competitive*
- *Planning Priority N9 - Growing and investing in health and education precincts*
- *Action 29 - Facilitate health and education precincts that:*
  - *create the conditions for the continued co-location of health and education facilities, and services to support the precinct and growth of the precincts*
  - *have high levels of accessibility*
  - *attract associated businesses, industries and commercialisation of research*
  - *include housing opportunities for students and workers within 30 minutes of the precinct.*
- *Action 32 - Deliver and implement a Place Strategy and Infrastructure Plan for the Macquarie Park health and education precinct.*
- *Action 33 - Strengthen Macquarie Park through approaches that:*
  - *enable additional capacity for commercial floor space and maintain a commercial core*
  - *improve urban amenity as the centre transitions from business park to a vibrant commercial centre, including reducing the impact of vehicle movements on pedestrian and cyclist accessibility*
  - *deliver a finer grain road network to enhance pedestrian connections and provide new access points*
  - *promote design excellence in urban design by upgrading public areas*
  - *deliver an innovation ecosystem in Macquarie Park, capitalising on the relationship with Macquarie University and nearby high-tech and medical corporations*
  - *improve public transport connections to Parramatta and the District's other strategic centres, including the Northern Beaches Hospital.*

The District Plans outline the GSC's ambition for Greater Sydney to be a 30-minute city in which residents can access health, employment, education and centres within 30 minutes of their home. The 30-minute city, it is hoped, will promote healthier lifestyles and community cohesion with improved walking, cycling and transport access to a wider range of services and opportunities. In the context of Macquarie Park this means establishing priorities and mechanisms to achieve a vibrant urban centre with an effective mix of commercial, residential, retail, health and education activities.

3.1.4 Macquarie University Master Plan 2014

MQU was founded in 1964 with a strong educational philosophy based on the concept of a university adjoining a technology park, closely following the Stanford University model. The original campus master plan by Walter Abraham has been periodically updated in 1983 and 2004 prior to the adoption of the most recent 2014 iteration.

MQU has adopted a Campus Master Plan prepared by Cox Richardson in 2014 to guide future development across the campus. It is noted that the Campus Master Plan carries no statutory weight but will inform the urban design of the development and its environs in tandem with the approved Part 3A Concept Plan (as modified), which does carry statutory weight.

The master plan sets out an updated physical framework to accommodate the University's predicted needs, while ensuring flexibility into the future and enhancing the existing qualities of the campus. It acknowledges that change will be continuous and new directions will evolve as the University grows. The plan also identifies a strong but flexible framework for growth with a series of initiatives aimed at improving the amenity of the campus and that sites can be developed to their full potential and future growth can be accommodated.

It outlines the key elements of the plan and any new initiatives. It is important to note that this master plan is not intended to be prescriptive in any way. Instead, it provides a general framework to guide and assist the University in its decision making around future development of the campus.

With respect to the development site, it has been identified as a location for buildings and development since the initial 1960s master plan for the campus. Under the 2014 Master Plan it is:

- Reinforced as a development site;
- Adjacent an entry location into the campus (Gymnasium Road) and opportunity as a landscaped gateway, noting however it is not identified as a primary or secondary area of public domain;
- Flanked by secondary pedestrian access links into the campus and from the campus to the student housing precinct to the west;
- Flanked by primary road and cycle access into the campus and road circulation within the campus;
- A stop along the shuttle bus route around the campus; and
- A location where edge planting and existing vegetation would be retained and/or enhanced (in the context of a development site and the entry gateway opportunity).

3.1.5 Future Transport Strategy 2056

The Future Transport Strategy 2056 is an update of the 2012 Long Term Transport Master Plan for NSW. It is a 40-year strategy, supported by plans for regional NSW and for Greater Sydney. The Future Transport Strategy 2056 provides a framework for delivery of integrated and modern transport systems. The plan acknowledges the vital role transport plays in the land use, tourism, and economic development of towns and cities. It includes issue-specific and place-based supporting plans that shift the focus away from individual modes of transport, toward integrated solutions. The Future Transport Strategy 2056 is the first plan to identify how rapid advancements in technology and innovation can be harnessed to transform the customer experience and boost economic performance across NSW.

The Strategy provides a range of six State-wide outcomes to guide investment, policy and reform and service provision. The "six State-wide transport outcomes" identified by the Future Transport Strategy 2056 are:

- Customer focused;
- Successful places;
- A strong economy;
- Safety and performance;
- Accessible services; and
- Sustainable.

MQU is the only Sydney Metropolitan university with its own railway / Metro station located within its campus and is exceptionally well placed to further contribute to the already significant improvements in public transport mode share to and from the campus. The railway / Metro coupled with bus movements to and through the campus contributes up to 52% of all visits based on 2017 transport surveys. The traditional car-based reliance for travel to and from the campus has progressively reduced from 51% in 2010 to 24% in 2017 in the years since the station opened and the scope of public transport services have concurrently improved.

The current level of public transport usage for academic uses now significantly exceeds the original 40% non-car mode share target established in the approved MQU Part 3A Concept Plan. In line with the targets set out in Modification 1 to the Concept Plan (MP 06_0016 MOD 1) a 40% non-car mode share target applies to commercial uses on the campus whilst a 62% non-car mode share target is adopted for academic / other uses on the campus.

Based on the above the proposal is considered to be consistent with the Future Transport Strategy 2056.

3.1.6 Sydney's Cycling Future 2013 / Sydney's Walking Future 2013 / Sydney's Bus Future 2013

Sydney's Cycling Future
This document has been referenced to consider the future cycling connections in the vicinity of the site as well as bicycle parking opportunities

Sydney's Walking Future
This document has informed the development of the enhanced walking connections proposed as part of the project.

Sydney's Bus future
This document has been referenced to review the planned rapid, suburban and local bus routes in the vicinity of site to inform the overall public transport assessment. This document identifies a number of 'rapid' bus routes in close proximity to the site as shown in Figure 1 of the Transport Impact Assessment at **Appendix F**. These routes focus on Macquarie Park as Specialised Centre and key employment and education destination.

3.1.7 State Infrastructure Strategy 2018 – 2038 Building the Momentum

The NSW State Infrastructure Strategy (SIS) 2018–2038 builds on the NSW Government's major long-term infrastructure plans over the last seven years. The strategy sets out the government's priorities for the next 20 years, and combined with the Future Transport Strategy 2056, the Greater Sydney Region Plan and the Regional Development Framework, brings together infrastructure investment and land-use planning for NSW's cities and regions.

The strategy assesses infrastructure problems and solutions, and provides recommendations to best grow the State's economy, enhance productivity and improve living standards for our NSW community. It is updated every five years.

The 2018 update to the SIS, Building Momentum State Infrastructure Strategy 2018-2038 looks beyond the current projects and identifies policies and strategies needed to provide the infrastructure that meets the needs of a growing population and a growing economy.

The Strategic Directions under the Strategy are:
- Integrating land use and infrastructure planning;
- Infrastructure planning, prioritisation and delivery;
- Asset management – assurance and utilisation;
- Resilience;
- Digital connectivity and technology; and
- Innovative service delivery models.

Whilst these appear largely to be focussed on the State's delivery, management and availability of infrastructure to promote economic strength and growth, the proposed development is not at odds with and otherwise supports these achievements. The development itself is likely to benefit from, rather than hinder or act to undermine any of these investments in infrastructure.

From a geographic standpoint, MQU / Macquarie Park sits within the Strategy's nominated Eastern Harbour City. The key focus for the Eastern Harbour City is movement, with transport projects the main infrastructure projects. The key driver of the economy for Macquarie Park in this regard is the already in place Sydney Metro Northwest.

The State's broader infrastructure response is to:
- Improve access to international gateways.

- Improve intercity and intracity transport connectivity.
- Improve intracity walking and cycling infrastructure.
- Improve mass transit connections to the Harbour CBD, especially from the west and south east of the Eastern Harbour City.
- Invest in improvements in cultural infrastructure and institutions.
- Support the population with social infrastructure investments.
- Provide more school education facilities, exploring joint and shared use.

Again, the proposed development will complement rather than hinder these achievements.

3.1.8 Healthy Urban Development Checklist (NSW Health)

The 2010 Healthy Urban Development (HUD) Checklist was prepared by NSW Health to help build the capacity of NSW Health to provide valuable feedback to local councils, and other relevant organisations, on health issues in relation to urban development plans and proposals. The intended use of the Guideline is to facilitate strengthened partnerships and collaboration between NSW Health and urban planners and developers as part of NSW Health's initiatives to promote healthy communities in NSW.

The HUD is structured into ten chapters, each one focused on a characteristic that is important for healthy urban development. Each characteristic has up to five key considerations, formulated as questions. The checklist is principally about helping to answer the questions:

- What are the health effects of the urban development policy, plan or proposal? and
- How can it be improved to provide better health outcomes?

The types of plans and proposals that this checklist is intended for include:

- Master Plans (may also be called concept plans);
- Town Centre Plans; and
- Development applications for projects like large housing developments, shopping centres, and community and health care facilities.

Key themes under the checklist are:

- Healthy Food
- Physical Activity
- Housing
- Transport and Physical Connectivity
- Quality Employment
- Community Safety and Security
- Public Open Space
- Social Infrastructure
- Social Cohesion and Social Connectivity
- Environment and Health

In relation to this DA, the following are relevant considerations and comments:

- Existing levels of active transport will be maintained and further encouraged. This will be reinforced through travel demand measures arising from the approved Part 3A Concept Plan for the campus and its developments;
- Existing high levels of public transport use and connectivity will be maintained and enhanced;
- The design satisfies and enhances a sense of community safety and security;
- The location of the development does not diminish the availability of open space to the wider community;
- The development's design and location reinforces a strong sense of local identity and a sense of place, but also creates a new visual identity built upon the principles of design excellence;

- The development will maintain existing high levels of social interaction and connection among people of all ages; and
- Provides for an environmentally responsible response to water, energy, and non-renewable resources use.

With regard to the above, the proposal is consistent with the relevant provision of the HUD checklist.

3.1.9 Better Placed – An integrated design policy for the built environment of NSW (2017)

Better Placed was released in May 2017 by Government Architect NSW and is intended to set a policy direction for the State's collective aspirations, needs and expectation for well-designed places, spaces and building, and thereby creating better cities, towns and suburbs.

Seven objectives define the key considerations in the design of the built environment being as follows. Consideration of these as derived from the project's Architectural Design Statement includes – see also **Appendix B**.

Better fit: contextual, local and of its place
Well-designed school and childcare facilities respond to and enhance qualities and identity of the area including adjacent sites. streetscapes and neighbourhood. The RIDBC Centre of Excellence takes into account the local topography, local natural amenity and views into the MQU campus. Strategically located on the corner of Culloden and Gymnasium Roads, the development is positioned to connect with the local community and greater catchment area for children and families working with the charity.

The RIDBC schools are designed to respond and enhance the experience of the site's natural green space, taking advantage of the views to the rest of MQU. This designed connectivity to the outdoors and the greater landscape is a direct response to indigenous heritage. Classrooms are designed to orient themselves to exterior learning environments and are completely openable to the outdoors.

The design and spatial organisation responds to solar amenity with learning modules arranged in a series of block forms for optimum solar capture and response. Within the primary school these modules are oriented around a central COLA canopy, aligning with considerations towards equal access to amenity.

Landscape here is designed into the centre of the school with biophilic elements drawn into learning spaces and shared facilities. This approach to landscape and amenity is echoed in the porte cochere design with landscape and accessibility considerations encouraging a traversable ground plane that blends in with the streetscape. This design should enhance neighbouring sites and encourage continuity with the neighbouring gateway to the greater University.

The extent of the grounds and proposed building is designed to retain existing trees, including Wallangara White Gum species located to the north-east of the site. The overall proposal is oriented and positioned to retain as many of the existing trees as possible, as an asset to enhance the experience of the future centre.

Better performance: sustainable, adaptable and durable
The design of the school pavilions incorporates at its core sustainable environmental principles. The skillion roof design encourages water capture, energy consumption and passive ventilation strategies, while maintaining connectivity to the green space surrounding the new precinct.

The school's resolution of elements and use of materiality takes into account durability and resilience. A concrete base enables smooth, touchable surfaces to line the passive and active recreation areas. Bagged brick construction lines the central COLA area and enables use of a

sustainable and easily sourced material to achieve the core expression of the learning architectures.

Better for community: inclusive, connected and diverse
The design of the school from first principles is designed to consider diverse needs by students who are hearing impaired or vision impaired and have additional needs.
The primary school is designed as a series of separable pavilions, centrally located around a singular COLA space. With the central COLA as the defining feature within the school, each classroom module is to maintain direct connectivity to this space. The design of the COLA space is inclusive and limits ball play activities, noting vision-impaired students may require more considered environments.

Better for people: safe, comfortable and liveable
Front of mind in the new design for the new schools is child safety and protection - with the school facilities designed to maximise passive surveillance and security for both staff and students.

The shared waiting area is designed to act as an 'invited space' post 9am - with visitors being screened prior to entry to the space. Following a visual assessment to the invited area, visitors are further screened prior to entry to the grounds. A similar framework of highly-transparent retreat zones within the primary school also enables best practice to be achieved in terms of the passive surveillance of students with teachers.

All learning environments are designed to encourage a singularity to spaces in that children are highly visible and supervised from key vantage points. Security surveillance will also be provided at core points within the school to enable best practice to be achieved as the children have additional needs.

Better working: functional, efficient and fit for purpose
The shared schools lobby is designed to accommodate entry by parents, carers and students onto the grounds to reinforce the sense of community within the facilities. Soft furnishings and additional amenity have been provided to encourage long-stay by visitors, enabling families to further interface with the facility.

The hall is intended as a facility that further enables the schools' community interaction; with the space designed to be serviced by the reheat kitchen/canteen. This highly flexible learning area is intended to facilitate family events - ie. Mothers' Day morning teas, Fathers' Day celebrations, book week events and easter parades, where parents and carers actively participate in the event with the children.

Amenity for the children is designed into the very framework of the learning facilities and includes equal access to the outdoors, considered daylight and learning space orientation, along with play areas for all abilities. These considerations also take into account the location of wet areas - with dual access wet areas designed to be located near the vision impaired learning spaces; equipped with hoists to enable ease of use.

Staff amenity is also front of mind - with shared facilities strategically located near reception and to the south-east in the consultation building as part of the Hub space.

Better value: creating and adding value
The modular approach to the learning spaces throughout both of the schools encourages future use and flexibility of the spaces, and further adaption throughout the life time of the school. These learning spaces are highly specialised due to the in-depth acoustic and visual requirements and therefore cannot be completely open or agile in comparison to a normal school. The learning module in itself however maintains a flexible interior and may be utilised in an 'agile way.'

Better look and feel: engaging, inviting and attractive

The architectural realisation of the school is to take into account best practice environments for vision impaired students - maintaining differentiation between surfaces, consistent approaches to volumes and 'visual bands' or datums enabling the spaces to be read easily and consistently as part of the wayfinding approach to the school. These approaches are highlighted through a 'domestic' approach to construction - or 'human scale' to the facilities.

Skillion roofs are maintained as the consistent language throughout the learning areas with this design methodology extending to the central COLA zones. Apertures to the learning spaces are realised through folding glazed doors and sliding windows; with practical activity areas externalised to encourage workshopping to occur undercover, outdoors. Bagged brick construction above consistent concrete datums enables to building to welcome enriched, vibrant activities in terms of the realisation of the outdoor areas and adaptive learning areas. Timber-enriched learning areas enable the facility to encompass a sense of 'home' for students.

Design Guide for Schools

The GANSW Design Guide for Schools is a design guide for new school development and upgrades in NSW and accompanies the *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP). The Education SEPP requires that a consent authority take into consideration the design quality of a proposed school development when evaluated in accordance with seven design quality principles before determining a DA.

The design quality principles are outlined in Schedule 4 of the Education SEPP. The Design Guide for Schools provides practical guidance on how school projects can be designed to best address the design quality principles in the Education SEPP. It should be noted that, as a specialised school, all principles may not be completely satisfied in the design of the school due to the bespoke needs and learning environments required.

The Design Guide for Schools is more formally addressed via a response to the requirements of Schedule 4 of the Education SEPP, as set out further in the Architectural Design Statement (at **Appendix B**), the Landscape Design Statement (see **Appendix C**), and in the following assessment section of this EIS.

3.1.10 Draft Greener Places Policy

Greener Places is a draft policy to guide the design, planning, design and delivery of Green Infrastructure in urban areas across NSW. Green Infrastructure is the network of green spaces, natural systems and semi-natural systems including parks, rivers, bushland and private gardens that are strategically planned, designed and managed to support good quality of life in the urban environment.

The aim of the policy is to create a healthier, more liveable, more resilient and sustainable urban environment by improving community access to recreation and exercise, walking and cycling connections.

The Policy is supported by the current exhibition of the Draft Greener Places Design Guide. This addresses open space for recreation, the urban tree canopy, and connecting bushland and waterways.

With respect to creation of new or additional recreation space, the site sits adjacent to wider existing areas of formal and informal open and recreation space within MQU and other recreation areas (such as Marsfield Park). These areas are primarily chosen first for recreational uses. The existing site would not be seen as a missed opportunity for new recreation space in a broader context in dealing with expected population growth and increased density in urban areas.

The site has been long-identified as a development site, well before this policy. There is capacity to design the development to retain a significant quantum of the planted native vegetation and contribute additional plantings to meet the objective of preserving and enhancing the urban tree canopy.

As the site is remote from significant areas of bushland and any adjacent waterways, and sits in a highly modified environment, there are limited opportunities to improve any connectivity between bushland and waterways and its supporting habitat and biodiversity.

Relevantly, Oculus, in designing the landscape for the development has addressed and considered Section 01. Open space for Recreation; Section 02. Urban tree canopy; and 03. Bushland and Waterways, of this policy.

See also the Landscape Design Statement and plans at **Appendix C**.

3.2 Statutory Planning Framework

The key and relevant statutory planning legislation and instruments applicable to the site and proposed development include:

- *Environmental Planning and Assessment Act 1979*
- *Biodiversity Conservation Act 2016*
- *State Environmental Planning Policy (State and Regional Development) 2011.*
- *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017*
- *State Environmental Planning Policy No.55 – Remediation of Land.*
- *State Environmental Planning Policy (Infrastructure) 2007.*
- *State Environmental Planning Policy No.64 – Advertising & Signage.*
- *Draft State Environmental Planning Policy (Remediation of Land).*
- *Draft State Environmental Planning Policy (Environment).*
- *Ryde Local Environmental Plan 2014.*
- *Ryde Development Control Plan 2014.*

It is noted that the recently commenced *State Environmental Planning Policy (Koala Habitat Protection) 2019* does not apply to this general area of Metropolitan Sydney and therefore also not to the site.

Further discussion on compliance and relevant assessment with each of the above is set below and in Section 7.0.

3.2.1 Environmental Planning and Assessment Act 1979

The objects of the Act are:

> *(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,*
> *(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,*
> *(c) to promote the orderly and economic use and development of land,*
> *(d) to promote the delivery and maintenance of affordable housing,*
> *(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,*
> *(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),*
> *(g) to promote good design and amenity of the built environment,*

(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,
(i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,
(j) to provide increased opportunity for community participation in environmental planning and assessment.

The proposed development satisfies these objects as detailed in the sections that follow.

The proposed development and the documentation and assessment under this EIS also satisfy the relevant provisions of the Act and Regulation as set out elsewhere and throughout this EIS.

3.2.2 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* applies to the State with the purpose of maintaining a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. In particular, amongst other things, it aims to:

- conserve biodiversity at bioregional and State scales, and
- maintain the diversity and quality of ecosystems and enhance their capacity to adapt to change and provide for the needs of future generations, and
- improve, share and use knowledge, including local and traditional Aboriginal ecological knowledge, about biodiversity conservation, and
- support biodiversity conservation in the context of a changing climate, and
- assess the extinction risk of species and ecological communities, and identify key threatening processes, through an independent and rigorous scientific process, and
- regulate human interactions with wildlife by applying a risk-based approach, and
- support conservation and threat abatement action to slow the rate of biodiversity loss and conserve threatened species and ecological communities in nature.

In accordance with section 7.9(1) the *Biodiversity Conservation Act 2016*, any SSD DA must be accompanied by a biodiversity development assessment report (BDAR) unless the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values.

Where it is believed that a BDAR is not required, a waiver should be requested from DPIE prior to the lodgement of the SSD DA. DPIE will liaise with the (now former) NSW Office of Environment & Heritage (OEH) to determine if a waiver is to be granted. Any waiver request is required to provide sufficient evidence to determine whether the proposed development is likely to have a significant impact on biodiversity values including a specific assessment against the relevant Biodiversity Values contained at Section 1.5 of the *Biodiversity Conservation Act 2016* and Clause 1.4 of the *Biodiversity Conservation Regulation 2017*.

A BDAR waiver was lodged for this project on 3 April 2020 with supporting information and assessment by Lesryk. A BDAR Waiver was granted by the Planning Agency Head on 27 April 2020 and the Environment Agency Head on 16 April 2020.

Accordingly, this EIS is not accompanied by any further detailed biodiversity assessment, other than to address any tree removal arising from the development. The BDAR Waiver documentation and BDAR Waiver granted are each found at **Appendix J** to this EIS, along with an addendum assessment of the tree removal.

3.2.3 State Environmental Planning Policy (State and Regional Development) 2011

State Environmental Planning Policy (State and Regional Development) 2011 identifies development that is State Significant Development (SSD). Clause 15(1) of Schedule 1 of the

SEPP specifies certain development for the purpose of *development for the purpose of a new school (regardless of the capital investment value).*

The project qualifies as a State Significant Development (SSD) by virtue of its status as a new school at the MQU campus. It is noted that RIDBC is identified on the NSW Government register of non-Government schools.

Further, clause 11 of this SEPP excludes the application of development control plans from SSD DAs. Notwithstanding, DPIE's SEARs have required consideration of Council's DCP. This is addressed further below within this section of the EIS and primarily in relevant appendices.

3.2.4 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) is generally not applicable to the development given the applicant is not a public authority for the purposes of this SEPP and the nature and type of the development is not covered by its various provisions, or is otherwise excluded from operation due to the SSD status of the development.

However, Schedule 3 of the SEPP specifies development that qualifies as traffic generating development and that must be referred to the Roads and Maritime Services (RMS). Schedule 3 applies to *car parks (whether or not ancillary to development)* as well as *any other purpose* that is not a listed development type. In each instance the referral trigger is:

- 200 or more car parking spaces where the site access is to a (non-Classified) road; or
- 200 or more motor vehicles per hour where the site access is to a (non-Classified) road, respectively.

Based on the above and the proposed overall amount of car parking within the development, clause 101 of the Infrastructure SEPP is also not applicable, and the development is not traffic-generating development for the purposes of this SEPP.

In any case, similar provisions relating to school developments have been transferred to the more recently commenced *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017.* This is addressed immediately below.

Additionally, as noted earlier, under clause 86 of the SEPP the consent authority must give the relevant rail authority notice of an application for development proposing the penetration of ground to a depth of 2 metres below ground level on land within or above a rail corridor, or within 25m of a rail corridor. As demonstrated in **Figure 18** earlier, the land subject of this DA does not lie above or within 25 metres of the nearest rail corridor.

Clause 87 of the SEPP nominates heads of consideration in the determination of a DA relating to development for certain purposes on land in or adjacent to a rail corridor that is likely to be adversely affected by rail noise or vibration. Nominated purposes include development for the purpose of a building for residential use, a place of public worship, a hospital, an educational establishment or child care centre. Given the distance of the site from the rail corridor under MQU, it is unlikely to be adversely affected.

3.2.5 State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017

State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 (Education SEPP) commenced in early September 2017. It seeks to improve regulatory certainty and efficiency through a consistent planning regime for educational establishments that includes schools.

Part 4 – Schools – specific development controls, in particular, seeks to simplify planning approval pathways for schools (including identification of certain development of minimal environmental impact as exempt development and complying development).

The SEPP has limited provisions applying to this school development given the nature and scale of the proposed works, particularly as it is not an 'existing school' at this site. The SSD approval pathway in this case is unlikely to be altered by the SEPP. Further consideration of the SEPP is unnecessary, other than for the following.

The SEPP does however assist in defining *educational establishment* for the purposes of determining SSD under the SRD SEPP. Clause 5 of the Education SEPP states an ***educational establishment*** *means a building or place used for education (including teaching), being:*

> *(a) a school, or*
> *(b) a tertiary institution, including a university or a TAFE establishment, that provides formal education and is constituted by or under an Act.*

In the event the development is not permissible under the Ryde LEP 2014, clauses 33 and 35 of the SEPP serve to confirm that the development is permitted with consent in the B4 – Mixed Use zone within which the proposed development sits. The B4 – Mixed Use zone forms part of the definition of a prescribed zone under clause 33 for the purposes of defining development permitted with consent under clause 35(1).

Similar to the traffic-generating development provisions of Schedule 3 and clause 104 of the ISEPP, clause 57 of the Education SEPP sets out referral requirements to the RMS, as well as matters for consideration.

In this instance referral is required as the school will satisfy the following as set out (and bolded) below:

> *This clause* ***applies to development for the purpose of an educational establishment****:*
> *(a)* ***that will result in the educational establishment being able to accommodate 50 or more additional students****, and*
> *(b)* ***that involves****:*
> *(i) an enlargement or extension of existing premises, or*
> *(ii)* ***new premises****,*
> ***on a site that has direct vehicular or pedestrian access to any road****.*

In addition to the consideration of RMS comments, the DPIE will need to consider

- *the accessibility of the site concerned, including:*
  - *the efficiency of movement of people and freight to and from the site and the extent of multi-purpose trips, and*
  - *the potential to minimise the need for travel by car, and*
- *any potential traffic safety, road congestion or parking implications of the development.*

Schedule 4 of the SEPP sets out seven design quality principles to be addressed in the design of the development. These seven design quality principles are:

- Principle 1—context, built form and landscape
- Principle 2—sustainable, efficient and durable
- Principle 3—accessible and inclusive
- Principle 4—health and safety
- Principle 5—amenity
- Principle 6—whole of life, flexible and adaptive
- Principle 7—aesthetics

The architectural design statement by WMK has addressed these directly. See **Appendix B** attached. The Landscape Design Statement (at **Appendix C**) has similarly addressed those of relevance to that discipline.

Additionally, Part 3 Early education and care facilities—specific development controls provides for regulation of centre-based child care facilities, design provisions, and matters for consideration variously applicable to this development via clauses 22, 23 and 25 of the Education SEPP and its accompanying Child Care Planning Guideline. Section 7 of this EIS and the architectural design statement by WMK has addressed these directly. See **Appendix B** attached.

3.2.6 State Environmental Planning Policy No.64 – Advertising & Signage

State Environmental Planning Policy No 64-Advertising and Signage seeks to ensure that signage (including advertising) is compatible with the desired character of an area, provides effective communication in suitable locations, and is of high-quality design and finish. SEPP 64 does not regulate the content of signage.

At this stage no signage is identified or proposed. Signage zones are however proposed at the Culloden Road, Gymnasium Road, and West Precinct Road frontages of the site to serve as business identification and wayfinding signs and the provide the school and RIDBC generally with an address. This is shown in the architectural plan set / Design Statement at **Appendix B**. It is ultimately intended to either include details of signs as part of the post-exhibition phase of the assessment process or to defer to the use of other approval opportunities via available legislation at a future point, eg Exempt Development under the Education SEPP.

3.2.7 State Environmental Planning Policy No.55 – Remediation of Land and

draft State Environmental Planning Policy (Remediation of Land) 2017

State Environmental Planning Policy No. 55 – Remediation of Land provides for a State-wide planning approach to the remediation of contaminated land. A consent authority must consider whether the land subject of a proposal is contaminated and, if the land is contaminated, be satisfied that the land is suitable in its contaminated state for the use proposed. If the land requires remediation to be made suitable for the proposed purpose, the determining authority must be further satisfied that the land will be so remediated before the land is used for that purpose.

Subclause 7(4) of the SEPP specifies land in relation to which the consent authority must consider the findings of a preliminary investigation of the land carried out in accordance with the contaminated land planning guidelines before determining a development application for change of use.

> *(4) The land concerned is:*
>
> *(a) land that is within an investigation area,*
>
> *(b) land on which development for a purpose referred to in Table 1 to the contaminated land planning guidelines is being, or is known to have been, carried out,*
>
> *(c) to the extent to which it is proposed to carry out development on it for residential, educational, recreational or child care purposes, or for the purposes of a hospital—land:*
>
> *(i) in relation to which there is no knowledge (or incomplete knowledge) as to whether development for a purpose referred to in Table 1 to the contaminated land planning guidelines has been carried out, and*

(ii) on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge).

The recently exhibited draft Remediation of Land SEPP (an update to SEPP 55) will not substantially alter the fundamental requirements of the legislation. At present a DA is required for any Category 1 remediation works, that is works which amongst other things are Designated Development (with a volumetric threshold of 30,000m3 of contaminated earth).

Under the new exhibited, but yet to commence, draft Remediation of Land SEPP, Category 1 remediation works are at this stage proposed to be reduced to a volumetric threshold of 3,000m3, amongst a range of other criteria.

As noted in Section 2.7 of this EIS and the findings of JBS&G, it is concluded the site is suitable for the proposed development and land use without further investigation or contamination management. The development satisfies SEPP 55.

Development of a construction environmental management plan (CEMP) which includes an unexpected finds protocol (UFP) and appropriate waste classification procedures will facilitate appropriate excavation and lawful disposal of fill/natural material during proposed basement excavation works.

3.2.8 Draft State Environmental Planning Policy (Environment)

The NSW government has been working towards developing a new State Environmental Planning Policy for the protection and management of the natural environment (the Environment SEPP). Changes proposed include consolidating and updating the following seven existing SEPPs:

- State Environmental Planning Policy No. 19 – Bushland in Urban Areas
- State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011
- State Environmental Planning Policy No. 50 – Canal Estate Development
- Greater Metropolitan Regional Environmental Plan No. 2 – Georges River Catchment
- Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River (No.2-1997)
- Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005
- Willandra Lakes Regional Environmental Plan No. 1 – World Heritage Property.

The Environment SEPP was on exhibition from 31 October 2017 until the 31 January 2018 but has so far not further progressed towards gazettal and implementation. None of the above listed SEPPs being replaced apply to the site or the proposed development.

Of the drafted provisions of the Environment SEPP itself, it is intended to set out provisions under four parts being:

- Catchments
- Waterways
- Bushland
- Protected areas

Again, the specific provisions do not relate to Macquarie University, the site or the development as the focus of the currently drafted provisions apply to Sydney Harbour, the Sydney Harbour Catchment, Sydney's Drinking Water Catchment, the Hawkesbury-Nepean Catchment, the Georges River Catchment, Canal Estate Developments, the Willandra Lakes in far western-NSW, and urban bushland areas.

In transplanting the same or similar provisions of the Sydney Harbour Catchment SREP, whilst the Macquarie University campus is located within the Sydney Harbour Catchment the provisions relate only to plan-making under Part 3 of the EP&A Act. Those of relevance to

development under Part 4 of the EP&A Act are confined to the foreshores area, which the site is not within or close to.

3.2.9 Ryde Local Environmental Plan 2014

The subject land lies within the Ryde Local Government Area and is subject to the *Ryde Local Environmental Plan 2014* (LEP). The relevant clauses of the LEP are addressed in the subsections that follow.

3.2.9.1 Part 2 Permitted or Prohibited Development

Under Part 2 Permitted or Prohibited Development of the LEP, the land is zoned B4 Mixed Use. Development for the purpose of *educational establishments* is permitted with consent in the B4 zone – see **Figure 25**. The proposed development, therefore, is permissible within the zone. Note also that clause 11A of Schedule 1 of LEP also permits a further and wider range of permitted land uses in the B4 zone at MQU which would permit the wider range of uses within the broader scope of RIDBC's general activities. This includes *centre-based child care facilities* and *health services facilities*, noting however the ancillary nature of a wide range of RIDBC co-related activities at the site.

3.2.9.2 Part 4 principal development standards

Neither a maximum building height nor maximum floor space ratio is applicable to the land subject of this EIS under Part 4 of the LEP.

A maximum number of off-street parking spaces for commercial and industrial development in the Macquarie Park Corridor of 1 space per 80m2 of gross floor area is applied under Clause 4.5B. As this control is consistent with the maximum number of parking spaces permitted under the approved MQU Part 3A Concept Plan, the LEP control applies to the proposal. Matters relating to traffic are discussed under section 7.4 of this EIS.

Remaining principal development standards – namely, minimum subdivision lot size (of which no control applies) and rural subdivision – are consequentially not relevant to this proposal.

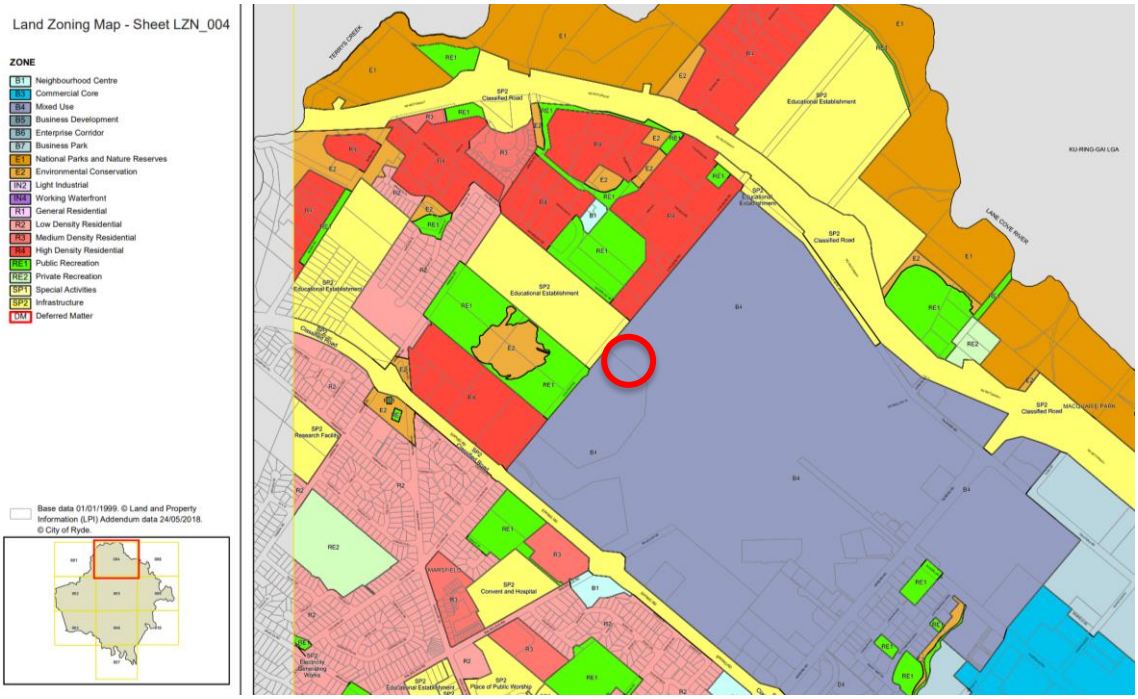

Figure 25 - LEP land use zone map (Sheet LZN_004)

3.2.9.3 Part 5 Miscellaneous provisions

Clause 5.9 Preservation of Trees or Vegetation seeks to preserve the amenity of the area, including biodiversity values, through the preservation of trees and other vegetation. Selected tree removal is sought under this DA. Matters related to tree protection and biodiversity are addressed in section 7.10 of this EIS.

As noted, clause 5.10 Heritage Conservation of the LEP seeks to conserve the environmental heritage of Ryde including its listed heritage items, conservation areas, archaeological sites and Aboriginal heritage. Although a large portion of Macquarie University is identified as an item of local heritage significance on the LEP Heritage Map, the heritage item itself is item no 10 'Macquarie University Ruins' as identified under Schedule 5 of the LEP (see extract below).

Suburb	Item name	Address	Property description	Significance	Item no
Macquarie Park	Macquarie University (ruins)	192 Balaclava Road	Part Lot 18, DP 1058168	Local	10

The ruins are the remains of a stone farm building, known as the 'Macquarie University ruins', which is situated towards the central precinct of the University campus adjacent to the Lighthouse Theatre car park. It is important to note that although a broad area of the campus is identified on the LEP heritage map, the listing is clarified under Schedule 5.

Further, a Statement of Heritage Impact has been prepared to address this matter and is included at **Appendix N**.

3.2.9.4 Part 6 Additional Local Provisions

Clause 6.2 Earthworks seeks to ensure that earthworks for which development consent is required will not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land. Before granting development consent for earthworks, the relevant consent authority must consider the following matters:

(a) the likely disruption of, or any detrimental effect on, drainage patterns and soil stability in the locality of the development,

(b) the effect of the development on the likely future use or redevelopment of the land,

(c) the quality of the fill or the soil to be excavated, or both,

(d) the effect of the development on the existing and likely amenity of adjoining properties,

(e) the source of any fill material and the destination of any excavated material,

(f) the likelihood of disturbing relics,

(g) the proximity to, and potential for adverse impacts on, any waterway, drinking water catchment or environmentally sensitive area,

(h) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.

Clause 6.4 Stormwater Management of LEP seeks to minimise the impacts of urban stormwater on land to which this clause applies and on adjoining properties, native bushland and receiving waters. Development consent must not be granted to development on land to which this clause applies unless the relevant consent authority is satisfied that the development:

(a) is designed to maximise the use of water permeable surfaces on the land having regard to the soil characteristics affecting on-site infiltration of water, and

(b) includes, if practicable, on-site stormwater retention for use as an alternative supply to mains water, groundwater or river water, and

(c) avoids any significant adverse impacts of stormwater runoff on adjoining properties, native bushland and receiving waters, or if that impact cannot be reasonably avoided, minimises and mitigates the impact.

Clause 6.6 Environmental sustainability of LEP seeks to ensure that development on land in a business or industrial zone (such the site's B4 zone) embraces principles of quality urban design and is consistent with principles of best practice environmentally sensitive design. The proposal relates to land zoned B4 Mixed Use and proposes a gross floor area greater than 1,500 square metres. Clause 6.6, therefore, applies. Development consent must not be granted to the development unless the consent authority is satisfied that the development has regard to the following:

(a) water demand reduction, including water efficiency, water recycling and minimisation of potable water usage,

(b) energy demand reduction, including energy generation, use of renewable energy and reduced reliance on mains power,

(c) indoor environmental quality, including daylight provision, glare control, increased outside air rates, thermal comfort,

(d) a reduction in new materials consumption and use of sustainable materials, including recycled content in concrete, sustainable timber and PVC minimisation,

(e) emissions reduction, including reduced flow to sewer and light pollution,

(f) transport initiatives to reduce car dependence such as providing cycle facilities, car share and small vehicle parking spaces,

(g) land use and ecology, including reduced topsoil removal and contaminated land reclamation

A review of the LEP revealed no other relevant matters that require further consideration in this instance.

The compliance of the proposed works with the relevant LEP provisions is set out under Section 7.0 of this EIS.

3.2.10 Ryde Development Control Plan 2014.

As set out in clause 11(a) of the SRD SEPP, Development Control Plans (DCPs) do not apply to SSD DAs. Notwithstanding, as required by this project's SEARs, the few relevant provisions applicable to the site and the proposed development are assessed at Section 7.0, noting the role of a DCP is largely supplanted by the MQU Design Excellence Strategy and Urban Design Guidelines (the Design Guidelines).

3.2.11 Part 3A Concept Plan 06_0016

Development opportunity within the MQU campus arises, principally, from Concept Plan 06_0016 approved under Part 3A of the *Environmental Planning & Assessment Act 1979* (the Act) on 13 August 2009, and as modified on 9 November 2018. The plan was developed in response to, and to complement, the 2004 Macquarie Park Corridor Master Plan prepared by the NSW State Government.

Amongst other things, the approved MQU Part 3A Concept Plan (as modified on 9 November 2018) generated the following development outcomes for MQU, subject to lodgement of subsequent applications:

(a) An additional 400,000m2 of commercial GFA and associated car parking;

(b) An additional 157,000m2 of academic GFA;
(c) An additional 3,450 beds for university purposes only;
(d) Infrastructure upgrading and improvements to the road network as required;
(e) Rationalisation of university car parking locations; and
(f) A maximum of 171,000m2 of GFA for Precinct D.

Modification 1 to the Concept Plan was approved on 9 November 2018. It has:

- modified height controls and increased floorspace provisions to ratify recent amendments to local controls (principally along the Herring Road frontage of MQU);
- increased academic floorspace from 61,200m2 to 157,000m2 campus-wide;
- Removed restrictions capping floorspace within certain precincts and redistributed floorspace, including realignment of Precinct boundaries;
- increased student population projections to the year 2036;
- modified terms of approval and Statement of Commitments; and
- revised and consolidated Design Excellence Strategy and Urban Design Guidelines.

Of note, Schedule 2 of the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017* at clause 3B(2)) variously states (with emphasis added):

> *(c)* ***any development standard that is within the terms of the approval of the concept plan has effect****,*
>
> *(d) a consent authority must not grant consent under Part 4 for the development unless it is satisfied that the development is* ***generally consistent*** *with the terms of the approval of the concept plan,*
>
> *(e) a consent authority may grant consent under Part 4 for the development without complying with any requirement under any environmental planning instrument relating to a master plan,*
>
> *(f) the provisions of any environmental planning instrument or any development control plan* ***do not have effect to the extent to which they are inconsistent with the terms of the approval of the concept plan****,*

The approved Part 3A Concept Plan divides MQU's campus into eight (8) precincts, which reflect particular uses and development parameters and outcomes. The land subject of this DA lies within Precinct B. Precinct B is generally devoid of any development controls or parameters under the approved MQU Part 3A Concept Plan – see **Figure 26**.

The site itself is Lot B03 in Precinct B – see **Figures 27** and **28** over showing the location and extent of Precinct B and Lot B03 within the Precinct. As noted, Lot B03 is not sufficiently close to the Epping-Chatswood railway tunnel and its reserve areas to require detailed consideration of impacts during either the design or the assessment of the development.

The Part 3A Concept Plan controls and limits development capacity in relation to commercial and academic uses campus-wide, as well as controlling the amount of GFA within the largely already developed business park environment in Precinct D. Areas along Herring Road to the east of the campus are subject to new specific GFA and height controls. Precinct B is unaffected by these controls.

A maximum car parking rate of 1 space per 80m2 applies campus-wide as part of an overall campus-wide cap of 10,800 car parking spaces, split to a maximum of 5,000 for commercial uses and 5,800 for other uses.

As set out above, the approved MQU Part 3A Concept Plan prevails over all environmental planning instruments (SEPPs and LEPs) in the event of an inconsistency. The only likely inconsistency to arise in a campus-wide context would relate to possible development controls

(height, density and the like) under Council's LEP and potential land use constraints under the LEP. This is covered below.

As noted, the approved MQU Part 3A Concept Plan is supported by the August 2018 updated version of the MQU Design Excellence Strategy and Urban Design Guidelines. This effectively operates as the campus' Development Control Plan (DCP) in lieu of Council's DCP. In any case, for SSD, DCPs do not apply. The MQU Design Excellence Strategy and Urban Design Guidelines would operate flexibly as a guidance tool informing the siting, scale, and form of development at the site.

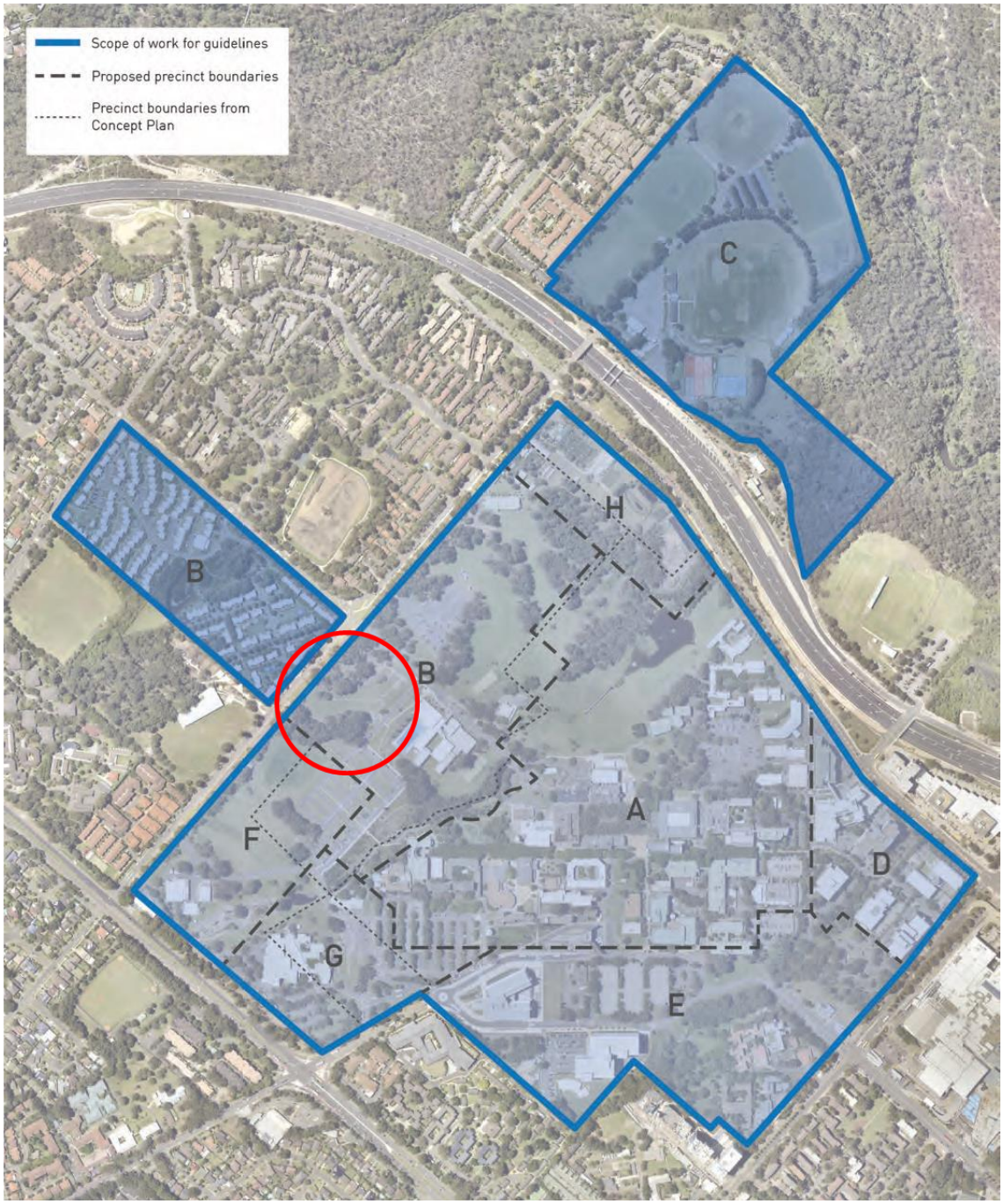

Figure 26 – MQU Concept Plan Precincts – MOD 1 application 2018 – site circled (Ethos Urban / Cox)

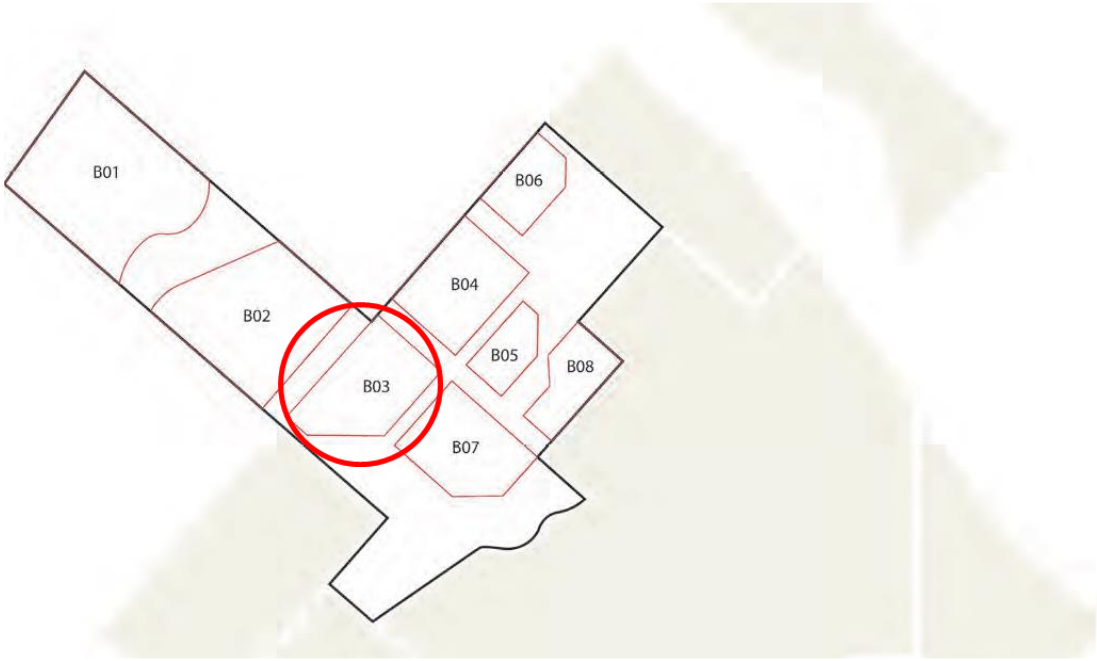

Figure 27 – MQU Concept Plan Precinct B Lots (Cox)

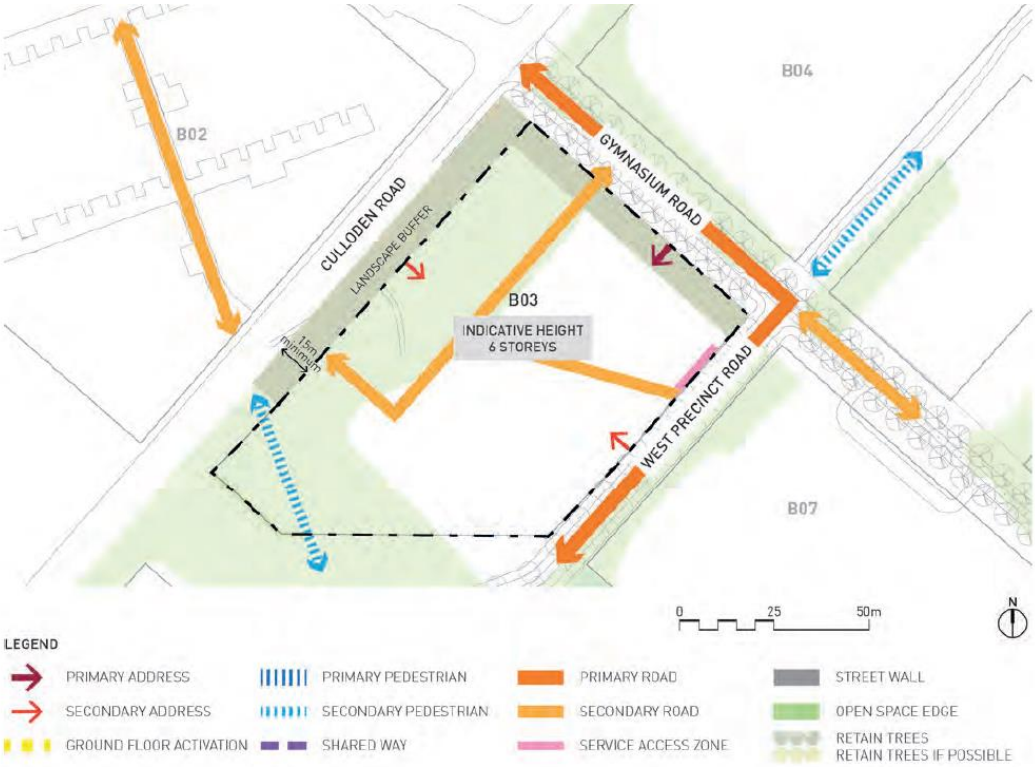

Figure 28 – MQU Concept Plan Lot B03 (Cox)

Under the Part 3A Concept Plan approval (as modified), development within the university shall be generally in accordance with the following plans and documentation (including appendices)

> *Macquarie University State Environmental Planning Policy (SEPP) amendment and Concept Plan"* dated *April 2008, as amended by Macquarie University Concept Plan and SEPP (Major Projects) Amendment Preferred Project Report dated March 2009,*

prepared by JBA Planning Consultants and Cox Richardson Architects and MP06_0016 MOD 1.
Except as provided by the Department's modifications of approval as set out in Schedule 2, Part B, and the Proponent's Statement of Commitments set out in Schedule 3.

The compliance of the proposed development with these requirements is set out under Section 7.0 of this EIS.

As noted, the approved Part 3A Concept Plan is also subject to the recently approved MOD 1. MOD 1 has:

- Increased height and floor space ratio (FSR) / gross floor area (GFA) controls along the campus' Herring Road frontage (part Precincts E and D) to align with the recent changes to Ryde Local Environmental Plan 2014 (Ryde LEP 2014);
- Increased the permissible additional academic (and support) GFA by 95,800m2 to a total of 157,000m2 across the campus;
- Increased the maximum permissible GFA in Precinct D (Macquarie University Research Park) by 35,000m2 to a total of 171,000m2;
- Partially removed the precinct-by-precinct GFA limitations to provide greater flexibility to locate floor space across the campus;
- Extended the timeframe of the Concept Plan by 5 years to 2036;
- Increased the anticipated number of students;
- Modified Condition C15 to enable separate agreements to be entered into with City of Ryde Council for construction of the missing cycleway connection / Shared Use Path, and the Minister for the remaining intersection upgrades; and
- Approved consequential amendments to the Design Excellence Strategy and Urban Design Guidelines and Statement of Commitments.

The modification has not changed the quantum of commercial floor space approved (400,000m2) on the campus (outside of Precinct D), but has instead applied this generally across the campus to align with the campus-wide B4 Mixed Use zone. Correspondingly, total car parking numbers (10,800 campus-wide) are retained, but these are now also applied campus-wide at the same 1 space per 80m2 rate with a cap on commercial parking spaces at 5,000 and 5,800 spaces for other uses. Based on no changes to commercial floor space, no changes are required to the executed VPA between Council and MQU.

The impact of this modification on the subject development is limited and inconsequential. The proposed development is outside of the areas of Precinct E subject to the regularisation of development heights, GFA, and FSR controls, which is focussed at and towards the MQU Herring Road frontage. The proposed GFA of this DA (whether commercial or academic in nature) sits well within pre-existing and now modified and increased GFA thresholds or targets.

Modification to existing conditions of the Concept Plan approval and to the approved Statements of Commitment are largely inconsequential to the proposed scope of MOD 1 and to concurrently bringing the approval into a contemporary and comprehensive position based on prior approvals / consents at the Campus since 2009 and related to the review and revision of ongoing development at MQU. In any case, the intent of modified conditions or Statements of Commitment are retained, where they are applicable to the development. The subject development is not inconsistent with any of the changes proposed under MOD 1, as applicable. Detailed assessment against the approval conditions and Statements of Commitment is found in Section 7.0.

3.2.12 Design Excellence Strategy and Urban Design Guidelines (August 2018)

The preparation of a Design Excellence Strategy and Urban Design Guidelines (the Design Guidelines) was required under the Part 3A Concept Plan Condition B4 originally only in relation

to Precinct E. As the Design Guidelines are required by, and form part of, the Concept Plan approval, they prevail over the provisions of any environmental planning instrument (i.e. LEP or SEPP) and any development control plan to the extent of any inconsistency.

The Design Excellence Strategy and Urban Design Guidelines (August 2018) have also recently been updated and refined as part of the MOD 1 process. These new guidelines now apply campus-wide but have retained the pre-existing lot controls as they apply to lot 'B03' for this DA.

Broadly, the Design Guidelines establish a Precinct Plan that builds on the Concept Plan's principles of extension of the existing geometric layout, the creation of clear orientation and efficient formation of streets. The creation of an open space network, building layout and pedestrian links that generate freedom of movement and a sense of place is a priority.

A review of consistency with these guidelines is also provided at Section 7.1.2 of this EIS, noting the guidelines now define the height control for the subject land in this part of the campus.

4.0 THE PROPOSED DEVELOPMENT

4.1 Project Need, Justification and Options explored

RIDBC is, amongst other things, Australia's largest non-government not-for-profit provider of therapy, education and cochlear implant services for children and adults with vision or hearing loss. Established in 1861 as a school with residential facilities, the RIDBC moved to North Rocks in 1961, where the main campus is still located.

RIDBC provides a broad range of specialist services which include:

- Early Intervention;
- Allied Health & Therapy;
- Cochlear Implant Program;
- Schools (pre-school, primary to secondary programs);
- Research & Professional Education;
- School support; and
- Paediatric Audiology.

The services provided are delivered by a broad group of professionals including: teachers, speech pathologists, occupational therapists, audiologists, orthoptists, psychologists, social workers, technology consultants, physiotherapists, and Ear, Nose and Throat (ENT) surgeons.

The RIDBC Mission is to provide quality and innovative services, to achieve the best outcomes for current and future generations of Australians with vision and/or hearing loss.

RIDBC relies significantly on fundraising and community support to continue to provide its services.

As part of RIDBC's 2016-2020 Strategic Intent it will relocate its school and clinical services activities from North Rocks to a purpose-built centre at MQU. The new Centre of Excellence will further strengthen the relationship between MQU and RIDBC, benefit the Australian Hearing Hub, and reinforce the cluster of research, audiology, and healthcare which already exists on the campus, and which also includes the Cochlear Global headquarters.

The Centre of Excellence will serve a diverse range of employees, students, users and visitors who will visit the centre for diagnostic services, therapy and rehabilitation, research, education, and co-related services. The centre will provide an intricate design response to the needs of the users, in particular children and adults with vision and hearing loss and other cognitive impairments.

The RIDBC 2020 Vision is to:

- Reach more people through expansion and partnerships;
- Develop, deliver and demonstrate best practice in all activities; and
- Secure RIDBC's future, continue to strengthen organisational identity and operations whilst remaining relevant and responsive to the needs of the children, adults, families and professionals who need RIDBC.

Part of this vision is the establishment of Centres of Excellence for vision and hearing, including relocating to MQU.

4.2 Development Objectives and Design Principles

The objectives and architectural design principles adopted for the proposed development can be summarised as follows, based on the overall aspirations of achieving:

- **Sensory spaces**
  - Tactile
  - Bespoke
  - Therapeutic

Creating a tactile, tailored and therapeutic space that addresses specific needs and presents unique experiences - the spaces are contemporary and incorporating technology.

- **Networked spaces**
  - Interconnected
  - Collaborative
  - Community-oriented

An environment that is interconnected, collaborative and community-oriented - the space as a platform in which different groups can come together and there is connection between function, people, space.

- **Purposed spaces**
  - Celebrates purpose
  - Showcase
  - Inclusive

A space where the organisation's purpose, culture and innovation can be incorporated and celebrated - creating a distinct and adaptable identity through design solutions.

The landscape design principles for the development are based on reinforcing the clusters of vegetation around the outskirts of the precinct which serve to visually and acoustically shield the area from neighbouring roads and other uses. The strategic use of trees lining the roads of the area help soften the pedestrian experience and provides visual interest from the building interiors.

Overall, the design and landscape response is one that addresses the existing built context of the campus, its bushland /parkland setting, and its evolution as a modern university campus consistent with both the original design principles of the university and the approved MQU Part 3A Concept Plan.

The objectives and architectural design principles adopted for the proposed development of the land can be summarised as follows:

- Consolidation
  The different functions of RIDBC are seamlessly integrated into two interconnected blocks - giving a physical manifestation of the fundamental aim and the premise of the project which is to form a networked environment for this multi-faceted organisation.

- Differentiation
  The two blocks are organised into smaller pavilions to break down the scale and the bulk of the development. The architectural language of the School is expressed through pitched roof forms and brick facades in response to the residential character of the university village to the northwest, while the elongated sweeping linear forms of the Consulting Building with the cantilevered roof, acknowledge the institutional character of the University Campus to the south-east.

- Response to topography
  A solid base connects all the individual pavilions into one sinuous form, which steps up and down with the natural ground, sometimes appearing as sculpted corner, while other times dissolving behind planted edges and landscape terraces. Mediating the topography of the site, it unifies the two blocks physically, visually and materially.

- Integration with landscape
  The pavilions are arranged around a series of courtyards. Within the School not only does every classroom have a direct access to an open area, in most cases they have been designed as if they are rooms within a garden, where one could either easily cross from one open space to another or have a visual link to the spaces. The same strategy has been applied to the Consulting Building where the internal walls and spaces are configured to provide views out to the site, and in framing those views to reinforce the connection between people and landscape.

The landscape design principles for the development similarly are based on:

- Responding to existing topography;
- Integrating with the wider pedestrian and cycle network;
- Responding to wider context including the MQU master plan and the Design Guidelines;
- Creating diverse landscape spaces which address the varied needs of students, staff and visitors;
- Retaining as many existing trees as possible;
- Creating strong visual and physical connections with the landscape;
- Addressing adjacent street frontages; and
- Creating rich, interesting and educational sensory landscape outdoor environments

Suitability of the site for RIDBC

The suitability of the site has been subject to, and tested via, a rigorous business case process in preceding years, much of it in conjunction with MQU. In short, the site provides RIDBC with a suitably dimensioned and located opportunity to meet its Mission, Vision, and Strategic Intent. This is emphasised by the reinforcement of the strong co-locational opportunities this provides within MQU and associated facilities and academic functions within and of the campus.

The site provides RIDBC with a number of clear advantages. It allows RIDBC to rationalise its current operations at North Rocks, better spatially organise its services and functions, and refocus its provision of services to achieve its Mission and Vision. It also enables the realisation of capital from the North Rocks site to allow re-investment into its necessary and critical services.

Modern, contemporary design and facilities will concurrently emit outwardly that the organisation is also a modern-thinking and forward-looking pedagogical and research institute.

Instrumental are the direct synergies and co-locational advantages of new and improved access to Cochlear, the Australian Hearing Hub, and academia and research within MQU itself.

More specifically, RIDBC Renwick Centre is Australia's leading centre for research and professional studies in the field of education for children with sensory disabilities, specifically hearing loss and vision impairment will be directly advantaged, as will its existing and future students.

RIDBC Renwick Centre offers webinars, short courses, and degree programs for parents, carers, educators, and health professionals. In partnership with MQU since 2018, the RIDBC Renwick Centre offers the Master of Disability Studies program. This is the only degree of its kind in Australia which prepares education, disability services, health professionals, and others interested in working in the field of sensory disability to take on new challenges and make a difference in the lives of others.

4.3 Description of Development

The new RIDBC Centre of Excellence is proposed to open for the 2023 academic year and will include accommodation for separate functional units, including:

- Clinical Services Operational Management and Support Services;

- Library Spaces and Resource Collections;
- Specialist Pre-schools, Schools and School Support Program;
- RIDBC Renwick Centre (research and professional studies);
- Assessment and Diagnostics;
- Therapy and Rehabilitation; and
- Early Intervention.

The approximate gross floor area (GFA) of the centre will be 10,475m2 across the above service areas and functional units. A breakdown of uses by GFA is included further below. The Building Use Diagrams and GFA Schedule by WMK is also attached at **Appendix B**.

In general, the proposed development generally seeks consent for the construction and operation of the new purpose-built 1-3 storey (including basement level) Centre of Excellence across two interconnected pavilions at the corner of Culloden Road and Gymnasium Road within the MQU Campus. The development includes:

- Pre-School and School accommodation for up to 80 pre-school children and up to 120 school children in a single storey pavilion addressing Culloden Road; and
- The main RIDBC building (accommodating approximately 260 staff) of up to three storeys, including basement level. The main RIDBC building houses:
    - Public areas for staff and visitors;
    - RIDBC Renwick Centre classrooms (doubling also as conferencing facilities) and a business hub;
    - RIDBC Renwick Centre resource centre which is co-shared between RIDBC Renwick Centre staff, clinicians and pre-school / primary school teaching staff; and
    - Medical facilities for various clinical services.

The Centre of Excellence will replace RIDBC's existing headquarters at North Rocks. The proposed development (as noted above) is about 10,475m2 in GFA and includes a total of 58 parking spaces, including 38 underground / basement car parking spaces, as well as 18 drop-off or short-duration parking spaces for the school uses via a porte cochere off Culloden Road, and 2 short-term visitor parking spaces via a porte cochere to the main entrance of the building off Gymnasium Road.

This is described and set out in detail below, along with a series of figures setting out the spatial arrangements and proposed appearance of the development. See the proposed layout of the development at **Figures 29-32** over.

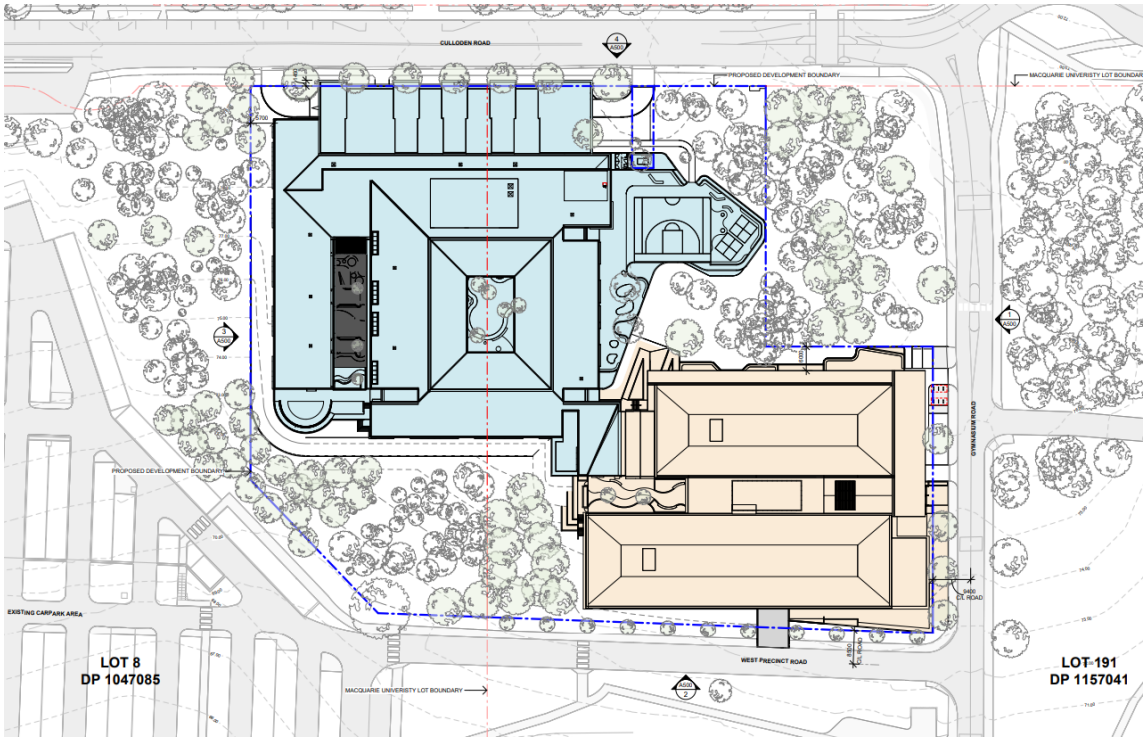

Figure 29 – Proposed layout of the development (WMK)

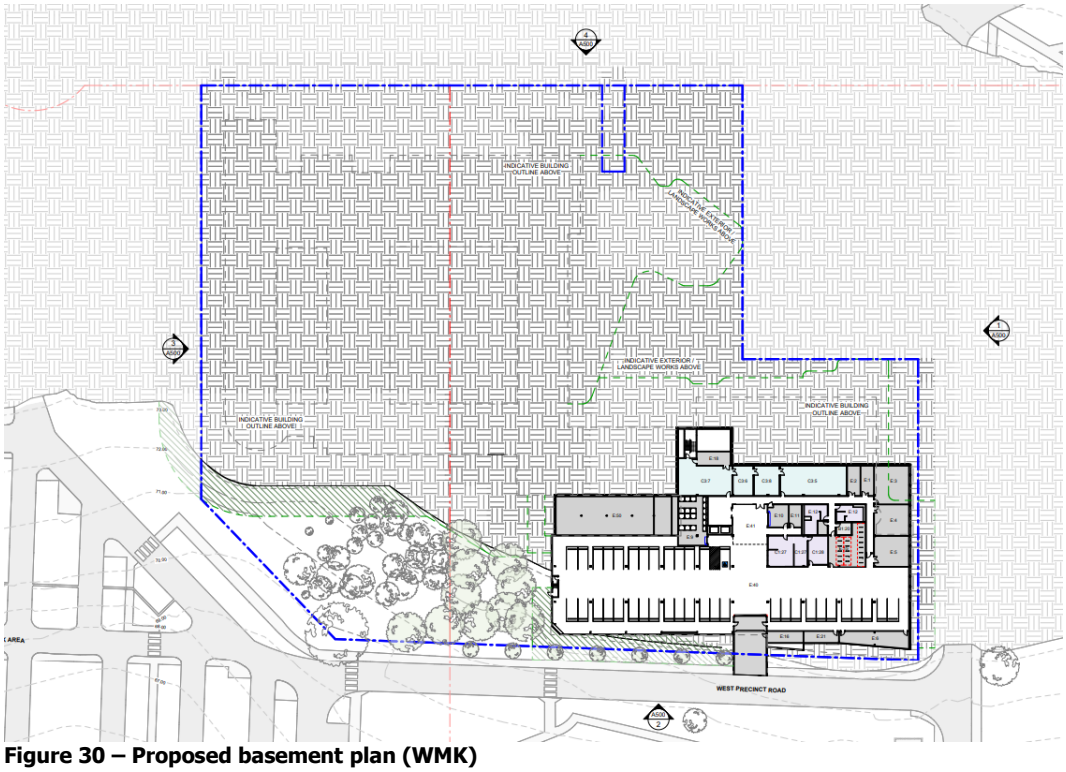

Figure 30 – Proposed basement plan (WMK)

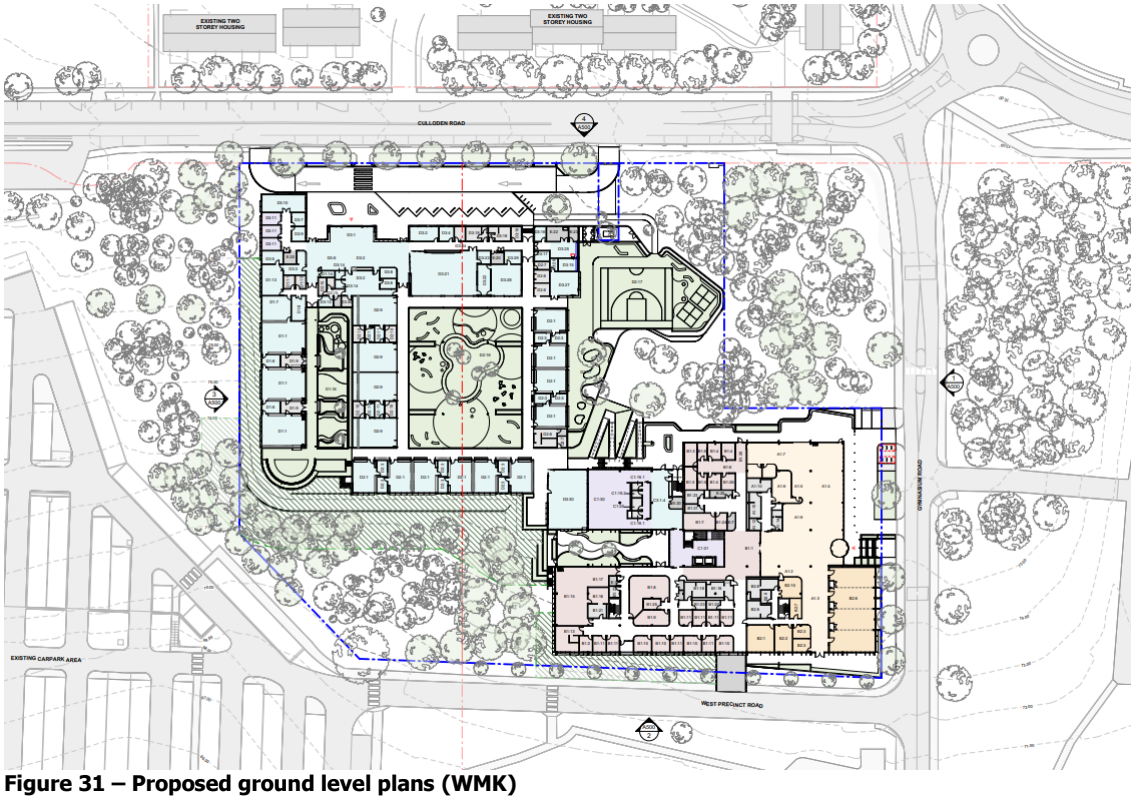

Figure 31 – Proposed ground level plans (WMK)

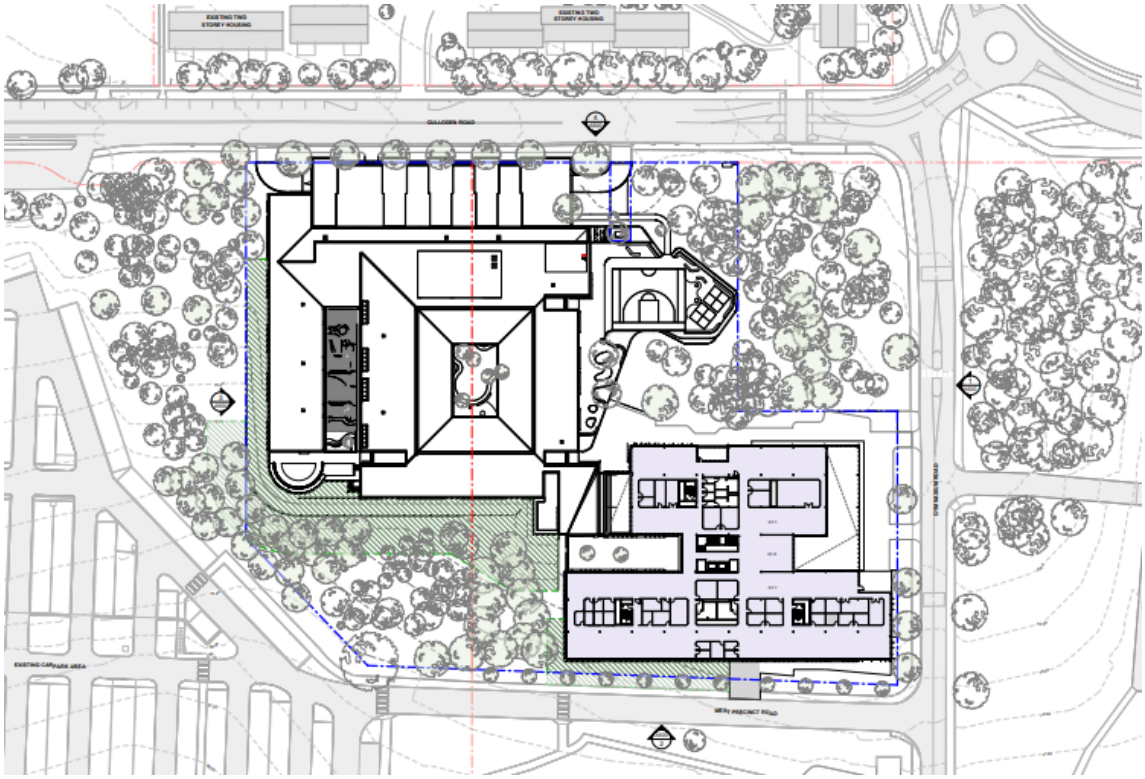

Figure 32 – Proposed first floor plan (WMK)

Pre-School and Primary School

The Pre-school and Primary School pavilion (3,306m2 GFA) comprises the following:

- Shared main entry off Culloden Road via the porte-cochere;
- Shared facilities, therapy suite and music and maker facilities;

- Three-room Pre-School and dedicated outdoor play space (up to 80 children);
- Primary School facilities for up to 120 students, including:
    - Vision-impaired Learning Areas (four rooms);
    - Hearing Impaired Learning Areas (ten rooms);
- Library; and
- Outdoor learning space.

Both the Pre-school and Primary School will have a shared entry and drop-off porte-cochere with a Culloden Road address and have been designed to cater specifically to 3 streams for focus teaching / learning, being:

- Vision impairment
- Hearing impairment (for children who use Auslan and English in its written and spoken form)
- Hearing impairment (for children who are learning to listen and speak)

The Pre-School's three separate rooms focus on the above target areas, with mixed ages within each room. Hours of operation are 8:30am to 4:00pm, Mondays – Fridays only.

Similarly, the Primary School has been designed with different classroom types also focussed on the above target areas. The school's hours of operation are between 8:30am – 3:00pm. Note, the school facilities will not be open to general use by the public after school hours.

A diagrammatic overview of the schools is set out in **Figure 33**.

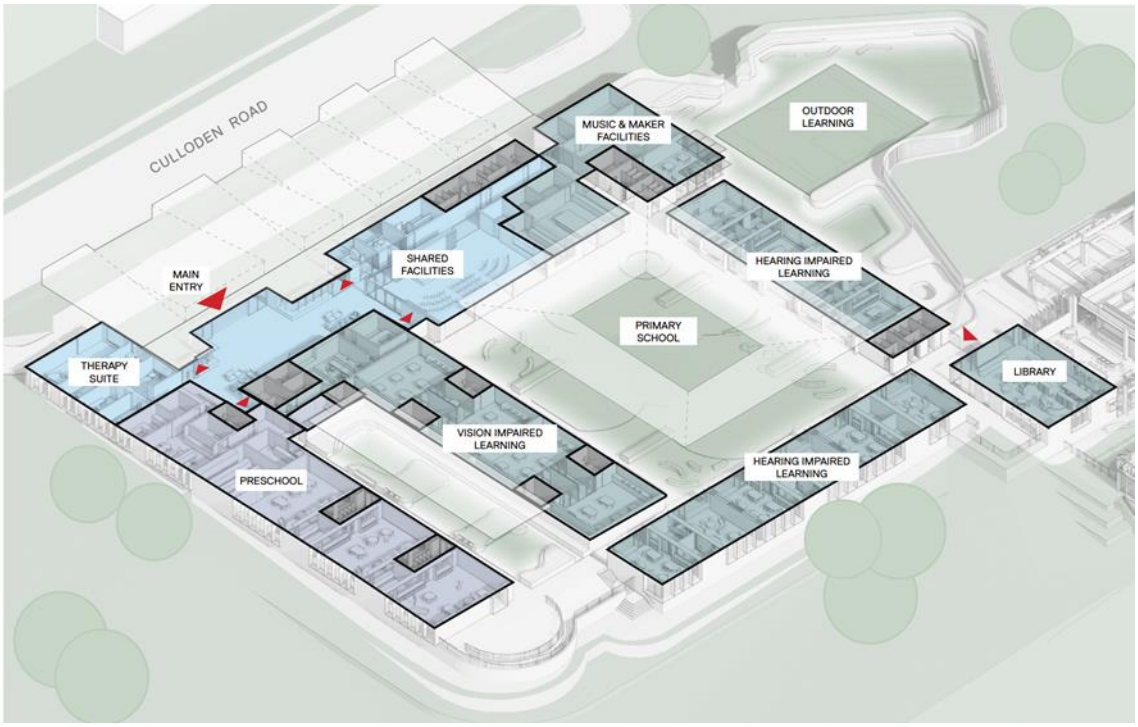

Figure 33 – Schools Overview Diagrammatic Plan (WMK)

Clinical Services Workspace / RIDBC Renwick Centre

The main building (7,169m2 GFA) addressing Gymnasium Road address will typically have all RIDBC departmental staff (approximately 260) working from Level 1, with the Ground Floor areas servicing:

- Public areas for staff and visitors;
- RIDBC Renwick Centre classrooms (doubling also as conferencing facilities) and a business hub;

- Clinical and therapy consultation for various services;
- RIDBC Renwick Centre resource centre; and
- Collaborative Workspace areas for interface use between RIDBC Renwick Centre staff, clinicians and pre-school / primary school teaching staff.

The clinical and therapy consultation areas will typically operate between 9am – 5pm Mondays – Fridays, with some limited weekend hours within the same timeframe.

The workspace areas will operate typical business hours, but typically 7am-6pm Monday-Fridays and 9am-1pm Saturdays.

The RIDBC Renwick Centre will also work typical business hours, but evening classes will also run sporadically up to 9pm Monday-Fridays and up to 5pm on Saturdays.

The occasional conference and fund raising activities will be run from the Centre of Excellence grounds and/or conference facilities in addition to the above typical operating hours.

Diagrammatic overview plans at **Figures 34-35** set out the general spatial arrangement of the uses described above.

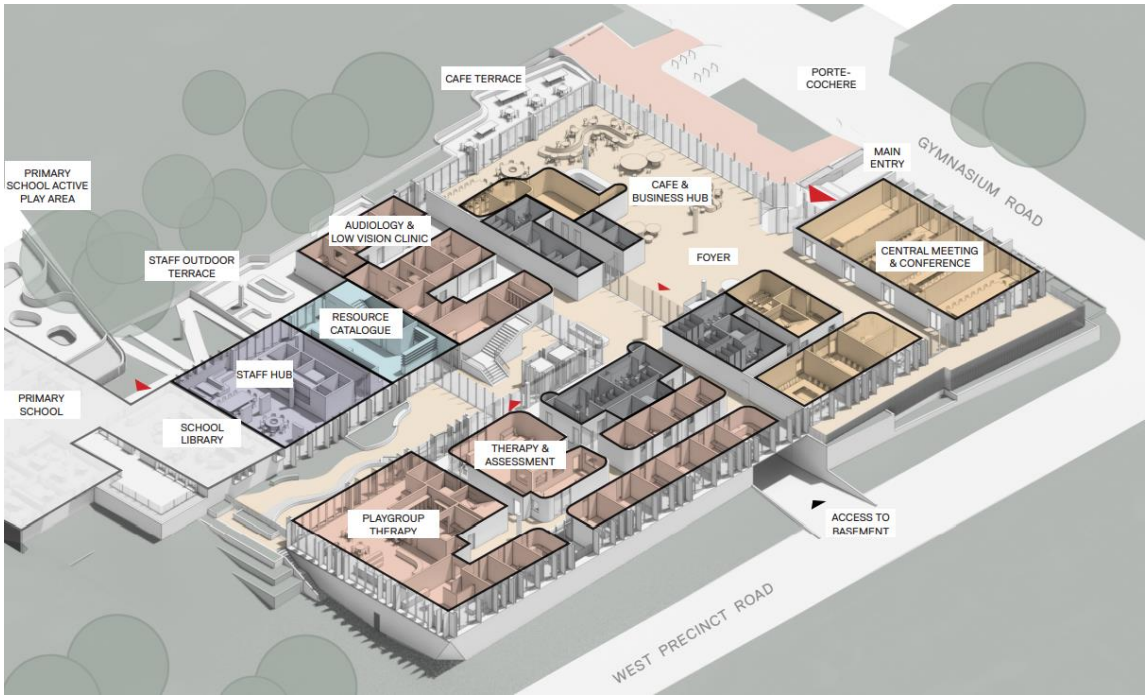

Figure 34 – Consultation and Services Overview Diagrammatic Plan (WMK)

GFA / Building Height

The following table sets out the GFA of the proposed development:

	School / Pre-School GFA	**Workspace / Renwick Centre GFA**
First Floor Level	-	3,090 m2
Ground Floor Level	3,306 m2	3,529 m2
Basement Level	-	550 m2
Total	**3,306 m2**	**7,169 m2**

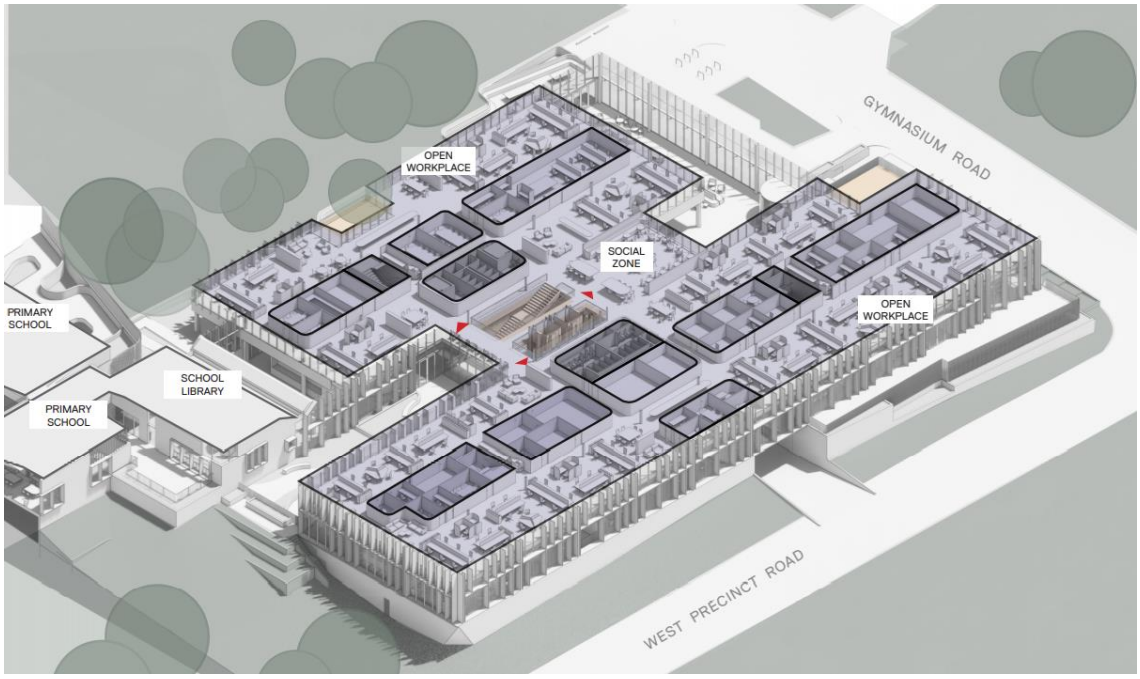

Figure 35 – Open Workplace Overview Diagrammatic Plan (WMK)

The following table establishes the categorisation of GFA for the purposes of the approved MQU Part 3A Concept Plan's delineation for parking and the campus-wide GFA caps. Note, these definitions as established under the MOD 1 approval of the Concept Plan differ from that applied under the executed VPA, and are not interchangeable for that purpose.

				Totals
		Academic GFA	**Commercial GFA**	
Pre-School / School Pavilion				
	Pre-School	562	-	562
	Primary School	1,208	-	1,208
	School Administration	926	-	926
	School Library	163	-	163
	Shared Facilities	447	-	447
		3,306 m2	-	**3,306 m2**
Main Building Pavilion				
Basement	Resource Library	269	-	269
	Workspace	209	72	281
Ground Level	Public	-	447	447
	Consultation / Clinical	-	1,659	1,659
	Renwick Business Hub	100	-	100
	Renwick Cafe	281	-	281
	Renwick Collaboration	269	-	269
	Renwick Conference	694	-	694
	Resource Library	79	-	79
First Floor Level	Workspace	1,446	496	1,942
	Renwick workspace	131	-	131
	Academic Workspace	1,017	-	1,017
		4,495 m2	**2,674 m2**	**7,169 m2**
Total Centre of Excellence		**7,801 m2 (74.5%)**	**2,674 m2 (25.5%)**	**10,475 m2**

The maximum building height of the development arises at the junction of West Precinct Road and Gymnasium Road within the MQU campus. The building height in this location is approximately 12m, including plant, at RL 88. The maximum height addressing Culloden Road

is RL 85.66 related to the porte-cochere, with Culloden Road sitting at approximately RL 78. Accordingly, the school is about 7.66m at its maximum. The majority of the school sits at a maximum building height of RL 84.5 and therefore at a height of about 6.5m from Culloden Road.

Parking / Access

A total of 58 parking spaces are proposed to be provided as part of the proposal, comprising of:

- 38 parking spaces (including 1 disabled space) within the basement of the administration building which are to be reserved for staff and RIDBC fleet vehicles at access via West Precinct Road;
- 2 short term visitor parking spaces within the consulting porte-cochere accessed via Gymnasium Road; and
- 18 short term parking spaces within the Culloden Road porte-cochere for the purposes of drop off and pick up for the pre-school and primary school. 10 of these spaces are parallel parking spaces which will primarily service the preschool component of the site given these children arrive by private vehicle.

This provision is in accordance with City of Ryde Council's DCP requirement of 1 drop off / pick up space for every 8 children. The remaining 8 parking spaces will be utilised for school drop off / pick up are angled parking spaces which are 3.2m wide by 6.0m long to accommodate the larger minivans that are utilised as part of the assisted school travel program. Note, RIDBC staggers drop off and pick up times for school students in order to distribute parking demand.

All parking spaces have been designed in accordance with the requirements outlined in Australian Standards for off-street parking AS2890.1.

This is about one space for every 180 m2 of GFA, noting the maximum parking requirement of 1 space per 80m2.

RIDBC will enter into an agreement with Macquarie University to use car parking spaces for staff of the pre-school, school and administration building within an existing car parking area in the campus. These leased spaces are included as part of the maximum 10,800 parking spaces to be provided on the campus as part of the Concept Plan approval. Therefore, the RIDBC project will not increase car parking on the MQU campus beyond that originally considered as part of the traffic modelling to support the Concept Plan approval.

Bicycle parking spaces (15) are also to be provided within a dedicated area within the basement of the building.

Loading dock and waste handling facilities are also provided within the basement level, again accessed of West Precinct Road within the MQU campus.

There are minor off-site parking impacts with the loss of 3-4 on-street parking spaces on Culloden Road due to the proposed ingress / egress driveways to the porte-cochere. Based on consultation with Council's traffic engineers it is likely that these parking spaces will be able to be replaced / offset in any area presently not utilised for parking on Culloden Road closer to the intersection with Gymnasium Road. This will be a matter Council will resolve in due course, being under its jurisdiction.

Proposed Subdivision

As set out earlier, the proposed location of the Centre of Excellence sits partly over two existing land titles, being Lot 191 DP 1157041 and Lot 8 DP 1047085 within the campus. This DA seeks to concurrently amalgamate Lot 8 DP 1047085 with Lot 191 DP 1157041 and then create a new lot to define the development site for the Centre of Excellence. This is shown on **Figure 36**

below. The proposed new Centre of Excellence boundaries are identified in green in the site plan below (and as defined by the LTS plans at **Appendix E**).

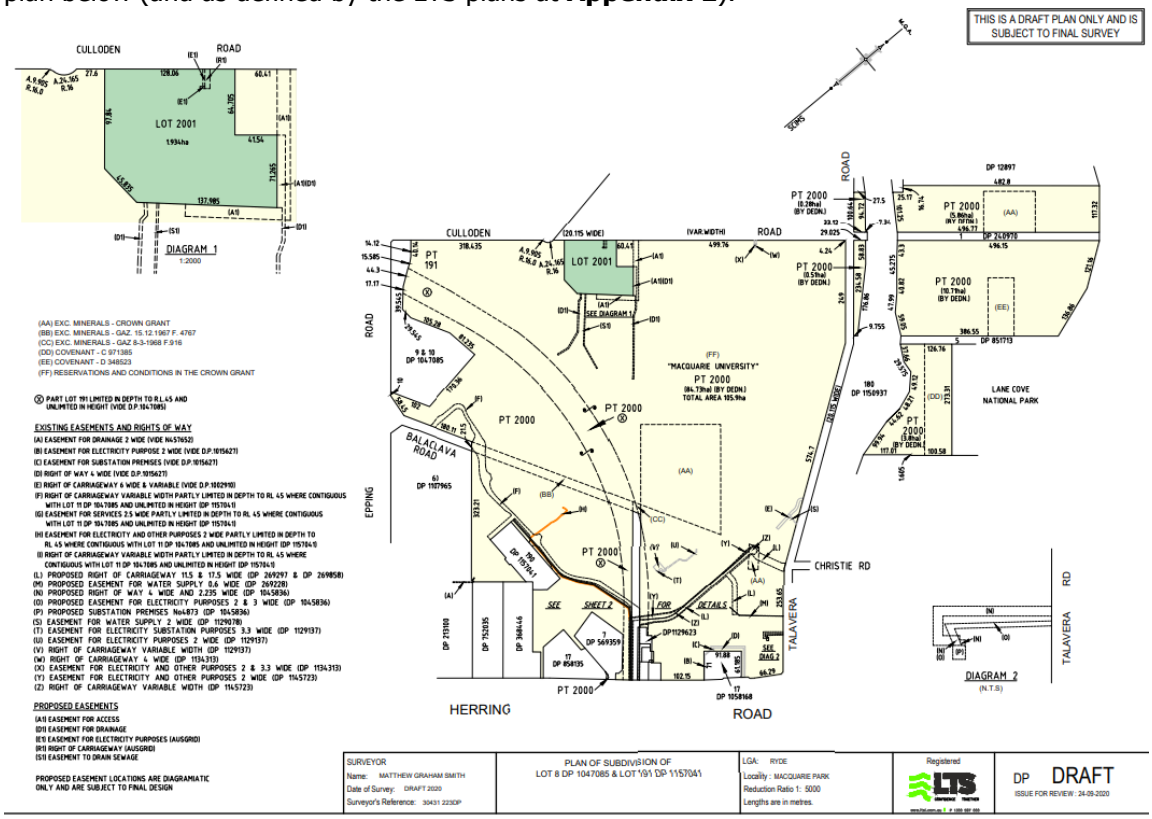

Figure 36 – Proposed subdivision

Tree Removal

Of the development site's 287 trees, 166 trees are located on the subject site and proposed for retention and protection. 121 trees on site are proposed for removal or relocation as they are located within, or close to, the proposed development envelope.

Additional planting is further proposed with 92 new trees within the development site, including 77 native trees and 15 exotic trees. Further, applying MQU's general offset strategy of replanting at better than 1:1, at least an additional 30 trees will need to be planted elsewhere within the campus. See **Figure 37** for the development's site related tree removal.

Demolition, Earthworks and Civil Works

Demolition works only extend as far as removal of the existing meandering footpath through the site and its associated lighting fixtures – see also **Figure 37**.

The proposed earthworks as the site principally revolve around establishing the site's / development's basement level as shown in **Figure 30**. The basement will be cut to approximately RL 72 and the balance of the site associated with the footprint of development benched to the corresponding ground level RLs for each pavilion. Earthworks will generally result in the reuse of excavated material (if suitable) and import only of minor quantities of new fill (where required). Generally, the objective is to achieve a neutral cut-fill balance.

Civil works to service the site as per plans at **Appendix I** are also proposed at various depths within, and around, the development site. The earthworks have been carefully considered to seek to retain as many existing trees as possible and limit impacts upon those trees proposed to be retained.

Note, based on the finding of the JBS&G detailed site investigation, no remediation works are required, and accordingly no consent is required under this DA for any remediation works.

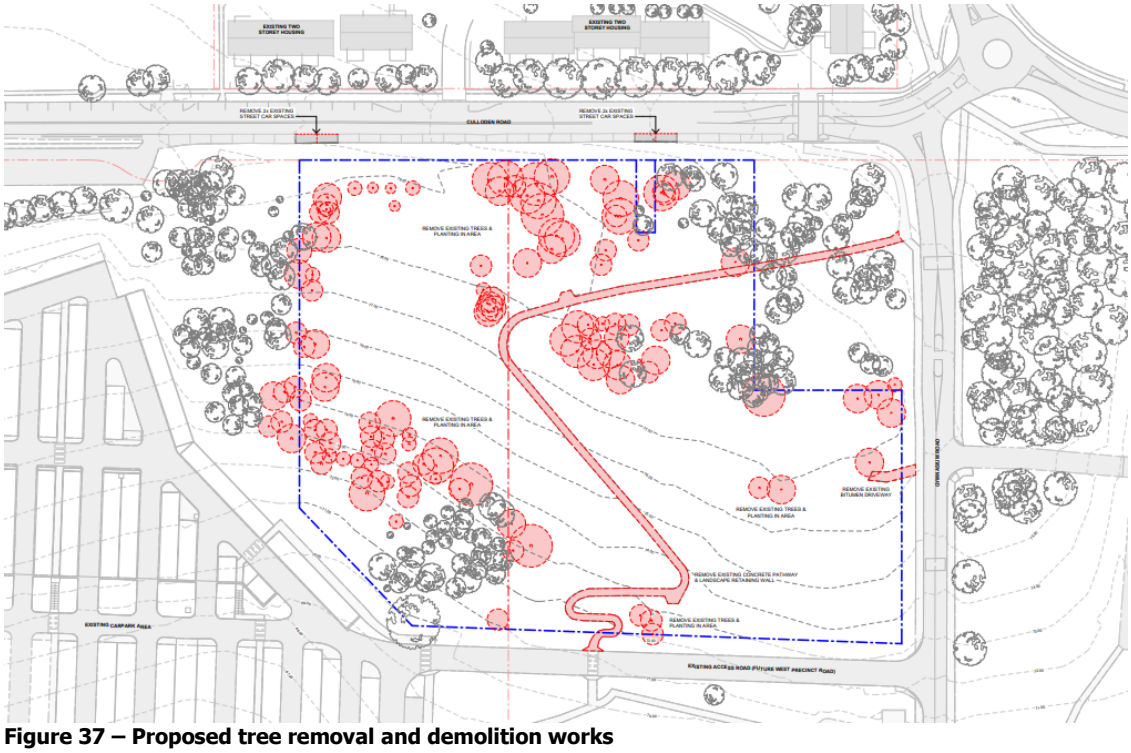

Figure 37 – Proposed tree removal and demolition works

Landscaping and lighting strategy

The landscaping proposed responds to the site and the school and general RIDBC uses by maintaining existing access links around the site into the campus; seeking to maintain or replace tree canopy within the site and introducing a planting strategy that defines the road edges and hierarchy with different tree species, both native and introduced. A mass planting strategy seeks to soften built edges and transition the built form into the existing managed lands and retained tree cover. This will maintain the park-like setting of the MQU at this edge and entry point.

Each pavilion and the school courtyard and outdoor play spaces have a different design and planting approach including sensory play areas.

Vegetation will include a mix of trees, shrubs, and groundcovers. Details are articulated in the landscape package at **Appendix C**. The principles driving the various internal and external landscaped areas are as set out in **Figures 38-40**.

An external lighting strategy has also been prepared to address the lighting types within the development site and its integration with the landscaping concepts. This has also principally addressed CPTED matters as well as possible light spill impacts upon adjacent and sensitive uses, such as Macquarie University Observatory – see **Appendix O**.

3.2 Landscape Typologies

Figure 38 – Landscape Typologies (Oculus)

3.3 School Landscape Spaces

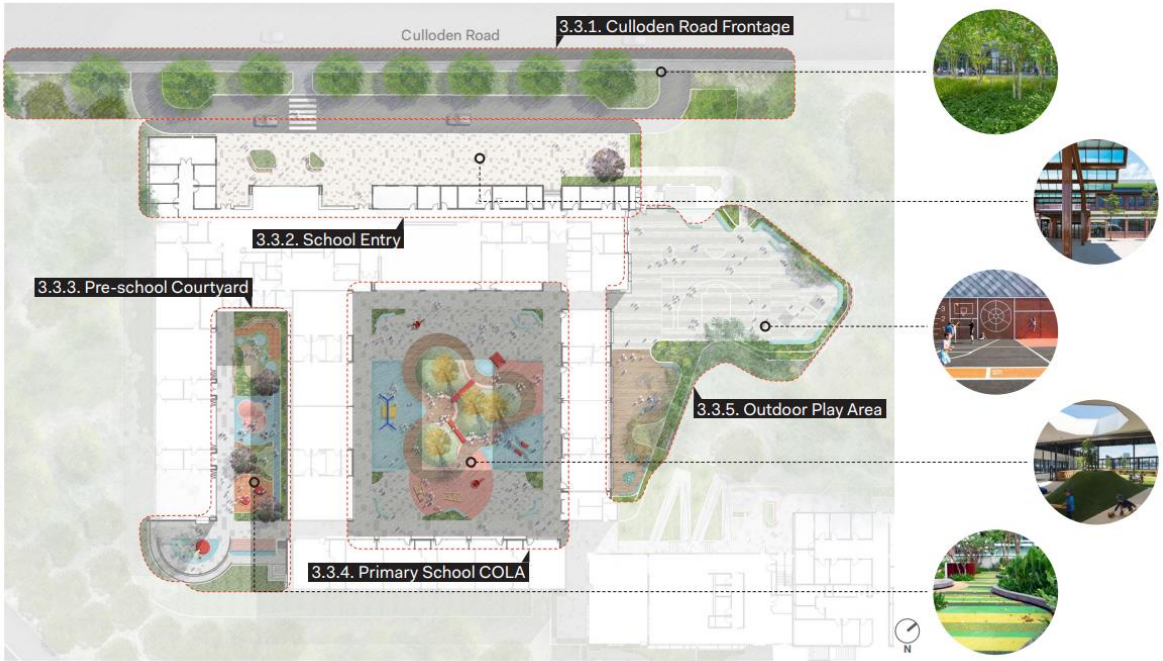

Figure 39 – School Landscape Spaces (Oculus)

3.4 Consulting Services Building Spaces

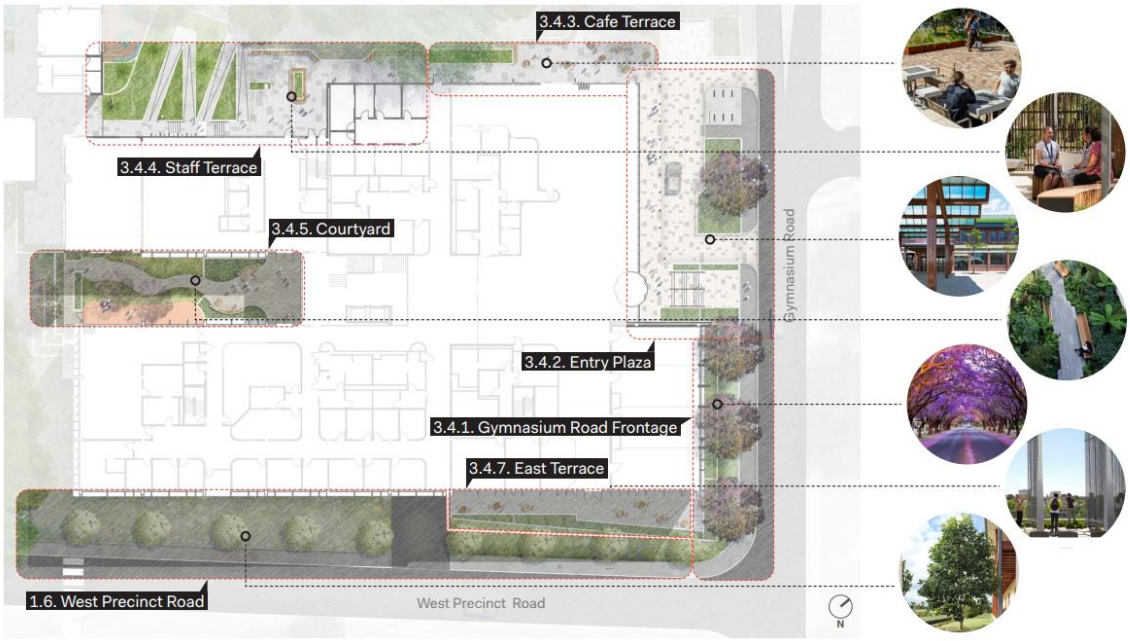

Figure 40 – Consulting Services Building Spaces (Oculus)

Signage

At this stage no signage is identified or proposed. Signage zones are however proposed at the Culloden Road, Gymnasium Road, and West Precinct Road frontages of the site to serve as business identification and wayfinding signs and the provide the school and RIDBC generally with an address. This is shown in the architectural plan set / Design Statement at **Appendix B**. It is ultimately intended to either include details of signs as part of the post-exhibition phase of the assessment process or to defer to the use of other approval opportunities via available legislation at a future point, eg Exempt Development under the Education SEPP.

Staging and Occupancy

The development subject of this DA will be constructed in a single stage. The anticipated commencement of works is August 2021 with a 18 month construction program to December 2022. The development, and in particular the school, is anticipated to be open for Day 1 Term 1 2023.

To accommodate this timing, it may be necessary to stage construction and occupation certificates. This will likely be further clarified during the DA's assessment process. The applicant will advise of its desired approach and required description of the development prior to consent being granted so as to afford the maximum flexibility in certification.

We also note that Planning Circular *PS17-004 – Regulating expansion of schools* provides principles for consent authorities to consider in determining whether to place a condition on a consent that will impose and numerical limit on student and staff numbers at school sites. It is the RIDBC's preference that no limits be imposed so that the intent of the available provisions of *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* is maintained and maximised to ensure appropriate flexibility.

Renders of the proposed development

A selection of renders and views is provided below at **Figures 41**-**51**, moving from the Culloden Road school frontage to Gymnasium Road and onwards to West Precinct Road to

appreciate the development in the round. Internal views within the school play spaces and courtyards is also provided.

Figure 41 – Culloden Road frontage looking north

Figure 42 – Culloden Road frontage looking south

Figure 43 – View of RIDBC workspace and consultation pavilion from Culloden Road

Figure 44 – Gymnasium Road elevation of the development

Figure 45 – Corner of Gymnasium Road and West Precinct Road

Figure 46 – View along West Precinct Road looking north-west

Figure 47 – View from West Precinct Road looking west

Figure 48 - View from berm overlooking existing MQU temporary car parks looking north

Figure 49 - View within Pre-School courtyard / play space

Figure 50 - View within School courtyard / play space

Figure 51 - View of Outdoor Learning Space

See these renders as part of the Design Statement and plan set at **Appendix B**.

Operational Aspects of the Development

As noted, the proposed hours of operation are generally as set out in the following table.

Functional unit	Hours of operation
Pre-school	8:30am - 4:00pm, Mondays – Fridays only
Primary school	8:30am - 3:00pm, Mondays – Fridays only Note, the school facilities will not be open to general use by the public.
RIDBC Workspace	Typically, 7:00am – 6:00pm, Monday-Fridays and Typically, 9:00am – 1:00pm, Saturdays
Clinical and Therapy Consultation	9:00am – 5:00pm, Mondays – Fridays Some limited weekend hours within the same timeframe.
RIDBC Renwick Centre	Typical business hours, but evening classes will also run sporadically up to 9:00pm Monday-Fridays and up to 5:00pm on Saturdays.

Occasional conference and fund raising activities will be run from the Centre of Excellence grounds and/or conference facilities.

An Operational Waste Management Plan has been prepared for the proposed development. This is included at **Appendix P**. This addresses operational waste generation estimates, waste disposal procedures to minimise waste generation, and waste collection procedures amongst other things for both the schools and workplace components of the overall development.

The likely weekly waste to be generated by type and by a breakdown of use and GFA is set out below.

- General Recyclables (plastic, bottles, and cans) 3,500 litres or 19 bins
- Paper and cardboard 3,000 litres or 13 bins
- Co-mingled Recyclables 1,500 litres or 6 bins
- General Waste (milk cartons, food scraps) 2,300 litres or 7 bins

General waste will be collected twice per week with the other waste types collected once per week. Collection will be via the basement loading dock / waste handling areas. Collection will be via a private waste collection contractor.

RIDBC will manage waste on a daily basis, separating materials into recyclable, re-usable, waste, co-mingled and general waste into bins that are then decanted into larger waste storage bins in the waste storage and collection area.

4.4 Ecologically Sustainable Development

As detailed in the ESD report prepared by JHA, the proposed development is not pursuing a formal Green Star rating through the certification procedures of the Green Building Council Australia (GBCA). However, the project team has benchmarked the development against the Green Star Design & As-Built v1.3 Rating System, with a goal of equivalency to a 4.5 Star Green Star rating. A minimum of 50 points for 4-star equivalency is required, noting the development achieves 58 points. The development is also seeking to exceed the 4.5-star NABHERS rating required by the approved MQU Part 3A Concept Plan. A 5-star outcome (or higher) is able to be achieved.

See the ESD report and suite of ESD documentation at **Appendix Q**.

To achieve a high ESD rating, the following proposed key ESD commitments for the development are:

- Sufficient exposure to daylight;
- Appropriate construction and glazing selection;
- Energy-efficient air-conditioning systems with control strategy and thermal comfort tuning;
- External horizontal shading devices;
- Efficient water fixtures; and
- Sustainable materials.

4.5 Utilities and Services

The site is currently serviced by:

- Sydney Water potable water at Culloden Road;
- Sydney Water sewer infrastructure to the east of the site;
- Ausgrid electricity supply at Culloden and Gymnasium Roads;
- Jemena natural gas at Culloden Road;
- NBN and telecommunications through the site and at Culloden and Gymnasium Roads; and
- MQU stormwater infrastructure

New services or augmentation will be needed for:

- Connection to all essential services; and

- Electrical services, including the need for new main distributor in the basement of building and a new substation kiosk which is proposed to be located within the main schools pavilion within the development site.

An Infrastructure Management Plan has been prepared and forms part of the Stormwater and Flood Management and Services Infrastructure Report which is found at **Appendix I**. A combined infrastructure services plan is also provided in the Design Statement at **Appendix B** as replicated below in **Figure 52**.

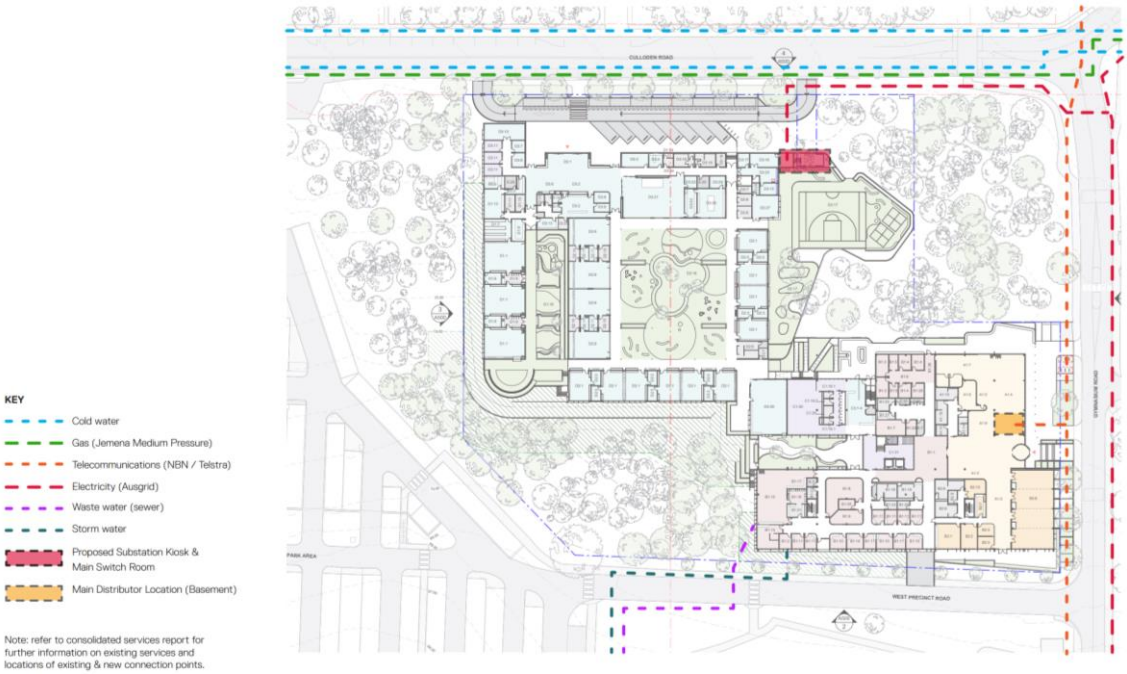

Figure 52 – Integrated Infrastructure Plan (WMK)

4.6 Stormwater Management

LP Consulting has devised a stormwater management plan / flood mitigation works to address the movement of water through the site. Proposed works include construction and operational stormwater and drainage management, including an OSD tank with 380.4m3 capacity to reduce flows into the surrounding network or creek system. This is to be located within the basement of the development.

These upgrades to existing stormwater infrastructure are shown on the LP Consulting plans along with the extent of the existing and future flooding. Refer drawings at **Appendix I**.

Internal stormwater management within the site has been assessed using City of Ryde Council's DCP and with the use of both a DRAINS model and a MUSIC model, to address water quantity and water quality, respectively. The model data is included as part of **Appendix I**.

Sediment and erosion controls will be implemented during works as set out in **Figure 53**.

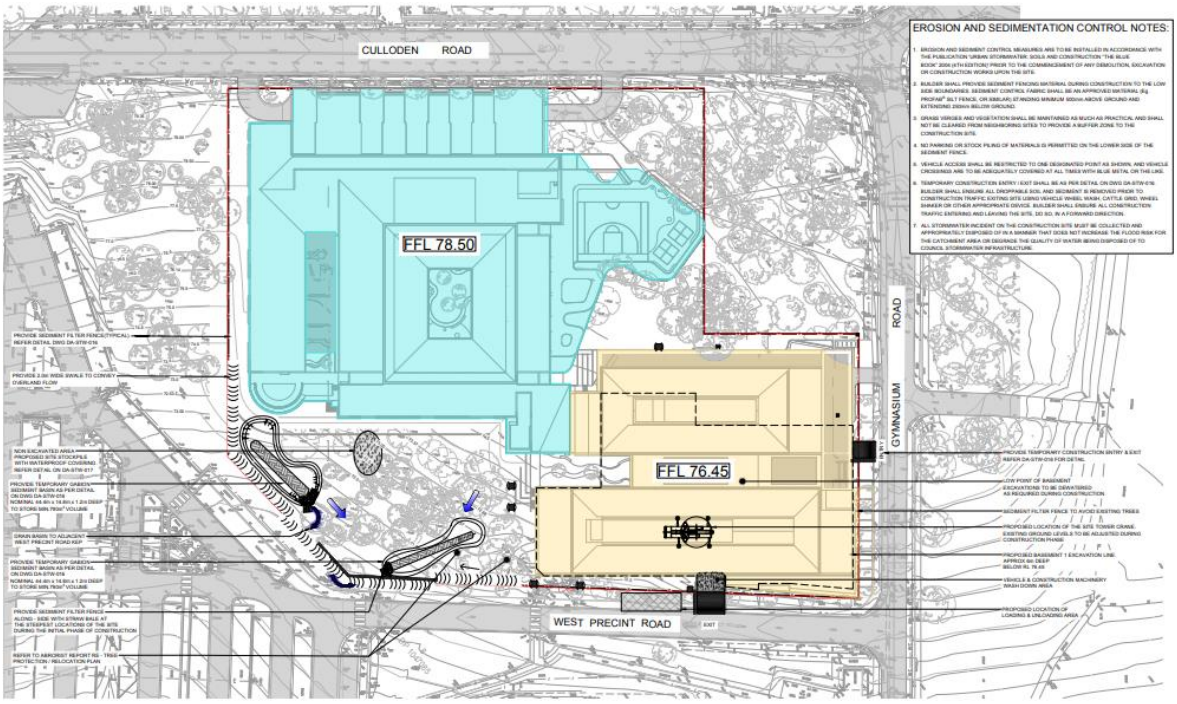

Figure 53 – Sediment and Erosion Control Plan (LP Consulting)

5.0 SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

This section assists DPI&E and other reviewers identify the location of responses and documentation in relation to the individual requirements of the SEARs (see issued SEARs at **Appendix O**). The table below indicates the location in the EIS and the relevant Appendix or Appendices. The introduction of the individual Appendix will also generally set out the response to the SEARs relevant to that document / discipline.

SEARs REQUIREMENT	LOCATION IN EIS / EIS PACKAGE
General Requirements	
The environmental impact statement (EIS) must be prepared in accordance with, and meet the minimum requirements of clauses 6 and 7 of Schedule 2 of the Environmental Planning and Assessment Regulation 2000 (the Regulation).	EIS Declaration and Certification
Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development.	Section 8.0
Where relevant, the assessment of key issues below, and any other significant issues identified in the risk assessment, must include: • adequate baseline data; • consideration of the potential cumulative impacts due to other developments in the vicinity (completed, underway or proposed); • measures to avoid, minimise and if necessary, offset predicted impacts, including detailed contingency plans for managing any significant risks to the environment; and • a health impact assessment of local and regional impacts associated with the development, including those health risks associated with relevant key issues.	
The EIS must also be accompanied by a report from a qualified quantity surveyor providing:	**Appendix A**
• a detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the Regulation) of the proposal, including details of all assumptions and components from which the CIV calculation is derived. The report shall be prepared on company letterhead and indicate applicable GST component of the CIV;	Section 1.0
• an estimate of jobs that will be created during the construction and operational phases of the proposed development; and	Sections 1.0, 3.1.1 and 4.3
• certification that the information provided is accurate at the date of preparation	
1. Statutory and Strategic Context	
Address the statutory provisions contained in all relevant environmental planning instruments, including: • State Environmental Planning Policy (State and Regional Development) 2011. • State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 • State Environmental Planning Policy No.55 – Remediation of Land. • State Environmental Planning Policy (Infrastructure) 2007. • State Environmental Planning Policy No.64 – Advertising & Signage. • Draft State Environmental Planning Policy (Remediation of Land). • Draft State Environmental Planning Policy (Environment). • Ryde Local Environmental Plan 2014.	Section 3.2
Permissibility Detail the nature and extent of any prohibitions that apply to the development.	Sections 3.2.5, 3.2.9 and 7.1.4

Development Standards Identify compliance with the development standards applying to the site and provide justification for any contravention of the development standards. *Macquarie University Concept Plan* In accordance with clause 3B(d) of Schedule 6A of the Environmental Planning and Assessment Act 1979, demonstrate consistency with concept plan approval MP 06_0016 dated 13 August 2009 as amended on 9 November 2018, including the Statement of Commitments for the project.	Section 3.2 Section 3.2.11
2. Policies	
Address the relevant planning provisions, goals and strategic planning objectives in the following: • NSW State Priorities. • The Greater Sydney Regional Plan, A Metropolis of three cities. • Future Transport Strategy 2056. • State Infrastructure Strategy 2018 – 2038 Building the Momentum. • North District Plan. • Macquarie University Master Plan 2014. • Sydney's Cycling Future 2013. • Sydney's Walking Future 2013. • Sydney's Bus Future 2013. • Crime Prevention Through Environmental Design (CPTED) Principles. • Better Placed: An integrated design policy for the built environment of New South Wales (Government Architect NSW (GANSW), 2017). • Healthy Urban Development Checklist (NSW Health, 2009). • Draft Greener Places Policy (GANSW) • Ryde Development Control Plan 2014.	Section 3.1 **Appendices B, C** and **F**
3. Operation	
• Provide details of the existing and proposed school operations, including staff and student numbers, school hours of operation, and operational details of any proposed before/after school care services and/or community use of school facilities. • Provide a detailed justification of suitability of the site to accommodate the proposal. • Provide details of the interrelationship between the proposed uses within the development and their dependency on each other.	Section 4.3 Section 4.2 Section 4.0
4. Built Form and Urban Design	
• Address the height, density, bulk and scale, setbacks and interface of the proposal in relation to the surrounding development, topography, streetscape and any public open spaces. • Address design quality and built form, with specific consideration of the overall site layout, streetscape, open spaces, façade, rooftop, massing, setbacks, building articulation, materials and colours. • Provide details of any digital signage boards, including size, location and finishes. • Clearly demonstrate how design quality will be achieved in accordance with Schedule 4 Schools – Design Quality Principles of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 and the GANSW Design Guide for Schools. • Detail how services, including but not limited to waste management, loading zones, and mechanical plant are integrated into the design of the development. • Provide detailed site and context analysis to justify the proposed site planning and design approach including massing options and preferred strategy for future development. • Provide a detailed site-wide landscape strategy, including: ○ consideration of equity and amenity of outdoor play spaces, and integration with built form, security, shade, topography and existing vegetation.	Section 4.3 and **Appendices B** and **C**. **Appendix B** Sections 3.2.6 and 4.3 and **Appendix B** **Appendix B** and Section 7.1 **Appendix B** **Appendix B** **Appendix C**, **Appendix K**, Sections 1.0 and 4.3.

○ details of the number of trees to be removed and the number of trees to be planted on the site.	
• Provide a visual impact assessment that identifies any potential impacts on the surrounding built environment and landscape including views to and from the site and any adjoining heritage items. • Address CPTED Principles. • Demonstrate good environmental amenity including access to natural daylight and ventilation, acoustic separation, access to landscape and outdoor spaces and future flexibility. • Provide an Arboricultural Impact Assessment undertaken in accordance with AS4970-2009 Protection of Trees on Development Sites. This assessment is to include all trees on site and must also address any encroachment on the Tree Protection Zone of trees to be retained within the site and on immediate adjoining land	**Appendix B** **Appendix B**, **Appendix S** and Section 7.3 **Appendix B** **Appendix K**
5. Environmental Amenity	
• Assess amenity impacts on the surrounding locality, including solar access, visual privacy, visual amenity, overshadowing, wind impacts and acoustic impacts. A high level of environmental amenity for any surrounding residential land uses must be demonstrated. • Conduct a view analysis to the site from key vantage points and streetscape locations (photomontages or perspectives should be provided showing the building and likely future development). • Include a lighting strategy and measures to reduce spill into the surrounding sensitive receivers. • Identify any proposed use of the school outside of school hours (including weekends) and assess any resultant amenity impacts on the immediate locality and proposed mitigation measures.	**Appendix B** and Section 7.0 **Appendix B** and Section 4.3 **Appendix O** and Sections 7.0 and 8.0 Section 4.3
6. Staging	
• Provide details regarding the staging of the proposed development (if any).	Section 4.3
7. Transport and Accessibility	
• Include a transport and accessibility impact assessment, which details, but not limited to the following: ○ accurate details of the current daily and peak hour vehicle, existing and future public transport networks and pedestrian and cycle movement provided on the road network located adjacent to the proposed development. ○ details of estimated total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and bicycle trips based on surveys of the existing and similar schools within the local area. ○ the adequacy of existing public transport or any future public transport infrastructure within the vicinity of the site, pedestrian and bicycle networks and associated infrastructure to meet the likely future demand of the proposed development. ○ measures to integrate the development with the existing/future public transport network. ○ the impact of trips generated by the development on nearby intersections, with consideration of the cumulative impacts from other approved developments in the vicinity, and the need/associated funding for, and details of, upgrades or road improvement works, if required (Traffic modelling is to be undertaken using SIDRA network modelling for current and future years). ○ the identification of infrastructure required to ameliorate any impacts on traffic efficiency and road safety impacts associated with the proposed development, including details on improvements required to affected intersections, additional school bus routes along bus capable roads (i.e. minimum 3.5 m wide travel lanes), additional bus stops or bus bays.	**Appendix F** and Sections 2.4, 3.1.5, 3.1.6, 3.1.7, 3.2.4, 4.3, 6.0, 7.1, 7.4 and 8.0.

○ in consultation with TfNSW, provide details of travel demand management measures to minimise the impact on general traffic and bus operations at the intersection of Culloden Road and Waterloo Road, including details of a location-specific sustainable travel plan (Green Travel Plan and specific Workplace travel plan) which incorporates a review of the University Travel Plan required in the Macquarie University Concept Plan 06_0016 and includes the provision of facilities to increase the non-car mode share for travel to and from the site. ○ the proposed walking and cycling access arrangements and connections to public transport services. ○ the proposed access arrangements, including car and bus pick-up/drop-off facilities, and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and bicycle networks, including pedestrian crossings and refuges and speed control devices and zones. ○ proposed bicycle parking provision, including end of trip facilities, in secure, convenient, accessible areas close to main entries incorporating lighting and passive surveillance. ○ proposed number of on-site car parking spaces for teaching staff and visitors and corresponding compliance with existing parking codes and justification for the level of car parking provided on-site. ○ an assessment of the cumulative on-street parking impacts of cars and bus pick-up/drop-off, staff parking and any other parking demands associated with the development. ○ an assessment of road and pedestrian safety adjacent to the proposed development and the details of required road safety measures and personal safety in line with CPTED ○ emergency vehicle access, service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times). ○ the preparation of a preliminary Construction Traffic and Pedestrian Management Plan to demonstrate the proposed management of the impact in relation to construction traffic addressing the following: ▪ assessment of cumulative impacts associated with other construction activities (if any). ▪ an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity. ▪ details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process. ▪ details of anticipated peak hour and daily construction vehicle movements to and from the site. ▪ details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle. ▪ details of temporary cycling and pedestrian access during construction. ***Relevant Policies and Guidelines:*** • Guide to Traffic Generating Developments (Roads and Maritime Services, 2002). • EIS Guidelines - Road and Related Facilities (Department of Urban Affairs and Planning (DUAP), 1996). • Cycling Aspects of Austroads Guides.	

• NSW Planning Guidelines for Walking and Cycling (Department of Infrastructure, Planning and Natural Resources (DIPNR), 2004). • Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development. • Standards Australia AS2890.3 (Bicycle Parking Facilities). • Ryde Draft Impact Assessment Guidelines 2016.	
8. Ecologically Sustainable Development (ESD)	

• Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Regulation) will be incorporated in the design and ongoing operation phases of the development.
• Include a framework for how the future development will be designed to consider and reflect national best practice sustainable building principles to improve environmental performance and reduce ecological impact. This should be based on a materiality assessment and include waste reduction design measures, future proofing, use of sustainable and low-carbon materials, energy and water efficient design (including water sensitive urban design) and technology and use of renewable energy.
• Demonstrate how environmental design will be achieved in accordance with the GANSW Environmental Design in Schools Manual (https://www.governmentarchitect.nsw.gov.au/guidance/environmental-design-in-schools).
• Include preliminary consideration of building performance and mitigation of climate change, including consideration of Green Star Performance.
• Include an assessment against an accredited ESD rating system or an equivalent program of ESD performance. This should include a minimum rating scheme target level.
• Provide a statement regarding how the design of the future development is responsive to the CSIRO projected impacts of climate change, specifically:
  ○ hotter days and more frequent heatwave events
  ○ extended drought periods
  ○ more extreme rainfall events
  ○ gustier wind conditions
  ○ how these will inform landscape design, material selection and social equity aspects (respite/shelter areas).
 	
Relevant Policies and Guidelines:
• NSW and ACT Government Regional Climate Modelling (NARCliM) climate change projections
	Appendix Q and Section 4.4.

9. Heritage	
• Provide a statement of significance and an assessment of the impact on the heritage significance of the heritage items on the site in accordance with the guidelines in the NSW Heritage Manual (Heritage Office and DUAP, 1996). • Address any archaeological potential and significance on the site and the impacts the development may have on this significance.	**Appendix N** and Sections 2.12, 3.2, and 7.1.
10. Social Impacts	
• Include an assessment of the social consequences of the schools' relative location and decanting activities from any existing facility if proposed.	Section 4.0 and 7.16
11. Aboriginal Heritage	
• Identify and describe the Aboriginal cultural heritage values that exist across the site and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation. • Identify and address the Aboriginal cultural heritage values in accordance with the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (Office of Environment and Heritage (OEH), 2011) and Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH, 2010).	**Appendix M** and Sections 2.11 and 7.14

• Undertake consultation with Aboriginal people and document in accordance with Aboriginal cultural heritage consultation requirements for proponents 2010 (Department of Environment, Climate Change and Water). The significance of cultural heritage values of Aboriginal people who have a cultural association with the land are to be documented in the ACHAR. • Identify, assess and document all impacts on the Aboriginal cultural heritage values in the ACHAR. • The EIS and the supporting ACHAR must demonstrate attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR and EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to the Environment, Energy and Science Group of the Department of Planning, Industry and Environment.	
12. Noise and Vibration	
• Identify and provide a quantitative assessment of the main noise and vibration generating sources during demolition, site preparation, bulk excavation, construction. Outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land. • Identify and assess operational noise, including consideration of any public-address system, school bell, mechanical services (e.g. air conditioning plant), use of any school hall for concerts etc. (both during and outside school hours) and any out of hours community use of school facilities, and outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land. ***Relevant Policies and Guidelines:*** • NSW Noise Policy for Industry 2017 (NSW Environment Protection Authority (EPA) • Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) • Assessing Vibration: A Technical Guideline 2006 (Department of Environment and Conservation, 2006) • Development Near Rail Corridors and Busy Roads - Interim Guideline (Department of Planning, 2008)	**Appendix V** and Section 7.13
13. Contamination	
• Assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55. • Undertake a hazardous materials survey of all existing structures and infrastructure prior to any demolition or site preparation works. ***Relevant Policies and Guidelines:*** • Managing Land Contamination: Planning Guidelines - SEPP 55 Remediation of Land (DUAP, 1998) • Sampling Design Guidelines (EPA, 1995) • Guidelines for Consultants Reporting on Contaminated Sites (OEH, 2011) • National Environment Protection (Assessment of Site Contamination) Measure (National Environment Protection Council, as amended 2013)	**Appendix H** and Sections 2.7, 3.2.7 and 7.7
14. Utilities	
• Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation and easement requirements of the development for the provision of utilities including staging of infrastructure. • Prepare an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end uses of potable and non-potable water, and water sensitive urban design.	**Appendix I** Sections 2.5 and 4.5

15. Contributions	
• Address 'City of Ryde Fixed Rate Levy (Section 7.12) Development Contributions Plan 2020' and/or details of any Voluntary Planning Agreement, which may be required to be amended because of the proposed development. • Prior to the submission of the EIS, consult with Ryde City Council regarding amendments to any Voluntary Planning Agreements and contributions.	Section 7.2 and **Appendix W**
16. Drainage	
• Detail measures to minimise operational water quality impacts on surface waters and groundwater. • Stormwater plans detailing the proposed methods of drainage without impacting on the downstream properties. • The Stormwater Management Plan is to be prepared in accordance to the provisions contained in Part 8.2 - Stormwater and Floodplain Management and the associated Technical Manual contained in Council's Development Control Plan 2014 and having regard to the controls related to OSD and WSUD which are applicable to the site. • Detail on site water capture and re-use opportunities for both sewer and rainwater to minimise discharge and maximise retention. ***Relevant Policies and Guidelines:*** • Guidelines for developments adjoining land managed by the Office of Environment and Heritage (OEH, 2013). • Ryde Development Control Plan 2014	**Appendix I** and Section 7.8
17. Flooding	
• Identify flood risk on-site (detailing the most recent flood studies for the project area) and consideration of any relevant provisions of the NSW Floodplain Development Manual (DIPNR, 2005), including the potential effects of climate change, sea level rise and an increase in rainfall intensity. If there is a material flood risk, include design solutions for mitigation	**Appendix I** and Sections 2.8 and 7.8
18. Bushfire	
• Address bushfire hazard and, if relevant, prepare a report that addresses the requirements for Special Fire Protection Purpose Development as detailed in Planning for Bush Fire Protection2006 (NSW RFS)	**Appendix L** and Sections 2.10 and 7.11
19. Biodiversity Assessment	
• Assess and document the flora and fauna impacts related to the proposal.	**Appendix J** and Sections 2.9, 3.2 and 7.10
20. Sediment, Erosion, and Dust Controls	
• Detail measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles. • Map the following features relevant to water and soils: o acid sulfate soils (Class 1, 2, 3 or 4 on the Acid Sulfate Soil Planning Map). o rivers, streams, wetlands, estuaries (as described in s4.2 of the BAM). o wetlands as described in s4.2 of the BAM. o groundwater. o groundwater dependent ecosystems. o proposed intake and discharge locations. ***Relevant Policies and Guidelines:*** • Managing Urban Stormwater - Soils & Construction Volume 1 2004 (Landcom). • Approved Methods for the Modelling and Assessment of Air Pollutants in NSW 2017 (EPA). • Guidelines for development adjoining land managed by the Office of Environment and Heritage (OEH, 2013).	**Appendix I** Sections 4.6 and 7.8

21. Waste	
• Identify, quantify and classify the likely waste streams to be generated during construction and operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site. ***Relevant Policies and Guidelines:*** • Waste Classification Guidelines (EPA, 2014).	**Appendix P** and **Appendix R** Sections 4.3 and 7.9
22. Construction Hours	
Identify proposed construction hours and provide details of the instances where it is expected that works will be required to be carried out outside the standard construction hours.	**Appendices F, R** and **V** Section 7.4.1 and 7.13.1
Plans and Documents	
The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Regulation. Provide these as part of the EIS rather than as separate documents. In addition, the EIS must include the following:	**Appendices B** and **C** and Section 4.3
• Architectural drawings showing key dimensions, RLs, scale bar and north point, including: plans, sections and elevation of the proposal; and details of proposed signage, including size, location and finishes.	**Appendix B**
• Site Survey Plan, showing existing levels, location and height of existing and adjacent structures / buildings and site boundaries.	**Appendix D**
• Site Analysis and Context Plans.	**Appendix B**
• Sediment and Erosion Control Plan.	**Appendix I**
• View analysis, photomontages and architectural renders, including from those from public vantage points.	**Appendix B**
• Landscape architectural drawings showing key dimensions, RLs, scale bar and north point, including: integrated landscape plans at appropriate scale, with detail of new and retained planting, shade structures, materials and finishes proposed, including articulation of playground spaces; and plans identifying significant trees, trees to be removed and trees to be retained or transplanted.	**Appendix C**
• Accessibility Report.	**Appendix U**
• Arborist Report.	**Appendix K**
• Schedule of materials and finishes.	**Appendix B**
• Bushfire report	**Appendix L**
Consultation	
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups, special interest groups, including local Aboriginal land councils and registered Aboriginal stakeholders, and affected landowners. In particular, you must consult with: • City of Ryde Council. • Transport for NSW (TfNSW). • Transport for NSW (Roads and Maritime Services) (TfNSW RMS). • Government Architect NSW (GANSW) (through the NSW SDRP process). The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided	Section 6.0

6.0 CONSULTATION

During the preparation of this EIS, direct consultation has occurred with a range of key parties / stakeholders. This has included:

- City of Ryde Council;
- Government Architect NSW (GANSW) - as part of the NSW State Design Review Panel process;
- Transport for NSW (TfNSW) through direct liaison by JMT Consulting in the development of the Traffic Impact Assessment; and with
- Registered Aboriginal Parties (RAPs) in the preparation of the ACHAR.

A summary of the type of consultation carried out and issues or results of that consultation is set out below.

City of Ryde Council

City of Ryde Council was approached for consultation on a number of occasions in August 2020. The intent was to provide an overview of the development to a broad range of disciplines within Council and to understand Council's key issues. No response was received to requests to meet.

Alternatively, it was determined that the main likely issue for Council would be traffic and transport-related matters. Accordingly, JMT Consulting approached Council's traffic engineers for a meeting. A meeting was held on 8 September 2020 with the project team (traffic consultant, project manager, planner, and architect) resulting in a briefing of Council's traffic engineers on the proposed development and discussion on matters related to:

- Access arrangements into the site off Culloden Road;
- Loss of on-street car parking arising from these access arrangements and offset parking opportunities; and
- Whether any road works and upgrades are likely to be triggered.

Following the meeting, the design of the Culloden Road access was refined and the Traffic Impact Assessment prepared in recognition of commentary arising from this meeting. As noted elsewhere, no road works are triggered by the development other than the loss of 3-4 parking spaces on Culloden Road which will be addressed by Council.

Government Architect NSW

Consultation with GANSW and the State Design Review Panel has occurred on a number of occasions in the preparation of the EIS and the architectural and landscape plans for the site – as set out below.

- GANSW Pre-briefing – 24 March 2020 – prior to the issue of the SEARs Request;
- State Design Review Panel Meeting 1 – 6 May 2020 (First Review) – on the same day as the issue of the SEARs for the project; and
- State Design Review Panel Meeting 2 – 26 August 2020 (Second Review) – as the accepted final review prior to lodgement of the DA.

Broadly, the design of the building and the landscaping has evolved significantly with each meeting. The State Design Review Panel has agreed that the design has evolved and matured to a point where further input from the GANSW / Panel may now only be warranted post-lodgement as part of its submission on the DA.

The main discussion points and areas for attention have focussed on:

- The development's context and place within the MQU Master Plan;
- Pedestrian linkages within and past the site, and its connectivity to the broader campus;
- Tree retention opportunities for shade, amenity and aesthetic quality;

- Aboriginal Cultural Heritage expression;
- Landscaping treatments, fencing, and security;
- Addressing the site's sloping topography;
- The Culloden Road interface;
- Internal amenity, within the school environment in particular;
- ESD; and
- Materiality.

It should be noted that at the same time (and generally within a day or two prior to the GANSW and State Design Review Panel meetings), the architect, landscape architect and broader client team, has meet with the MQU Design Review Panel to resolve key architectural, landscaping, and urban design matters in the lead-up to formal MQU acceptance of the design and the issue of landowner's consent for the DA. Commentary arising from this Panel has also been of interest to the State Design Review Panel in its process.

Transport for NSW

The project's traffic and transport consultant, JMT Consulting, has consulted with TfNSW in the preparation of its Traffic Impact Assessment. At this point TfNSW has advised that it has reviewed the consultation letter (presumably the SEARs Request documentation issued at that time) and has no comments to assist in the preparation of this EIS. It will await the formal lodgement of the application prior to commenting.

ACHAR / Aboriginal cultural heritage

As part of the preparation of the site- and development-specific ACHAR, Extent has re-consulted with prior interested parties and RAPs. The Aboriginal community consultation process commenced in December 2018 with the preparation of the original MQU campus-wide ACHAR. Nine stakeholder organisations registered an interest in the project at that time. Three stakeholder organisations participated in an archaeological survey of campus, including the RIDBC site, on 21 August 2019 in the finalisation of that ACHAR. Subsequently, three stakeholder organisations assisted with the archaeological test excavation of the RIDBC site between 22 and 25 September 2020.

As noted earlier, post excavation preliminary analysis indicates that no Aboriginal cultural material was recovered, and despite the presence of natural (albeit shallow) silty clay topsoils on an elevated ridgeline spur, the study area is unlikely to retain evidence of Aboriginal occupation in the form of Aboriginal stone objects. Accordingly, the proposed development is considered to have minimal-nil impact upon Aboriginal heritage. In the case of tangible cultural material, the investigations recovered none. Consultation with RAPs to date have not identified intangible cultural values specific to the study area. As such, it is considered that the proposed development is unlikely to have an impact upon tangible and intangible cultural material.

The results of the formal notification process in the preparation of the ACHAR (now focussed on cultural values and management recommendations for unexpected finds) has garnered no further commentary from the RAPs. One RAP responded to indicate support of the findings of this ACHAR.

7.0 ASSESSMENT

7.1 Compliance with Environmental Planning Instruments

Further to details already set out in Section 3.0 of this EIS, this subsection addresses the relevant provisions of the applicable Environmental Planning Instruments.

As noted earlier *State Environmental Planning Policy (State and Regional Development) 2011* identifies development that is State Significant Development (SSD). Clause 15(1) of Schedule 1 of the SEPP specifies certain development for the purpose of *development for the purpose of a new school (regardless of the capital investment value).* The project qualifies as a State Significant Development (SSD) by virtue of its status as a new school at the MQU Campus.

The Infrastructure SEPP is not further applicable, with the Education SEPP addressing or supplanting the otherwise relevant consideration of the development as Traffic Generating Development with lower thresholds – see below.

SEPP 55 is not further applicable to the extent that a Detailed Site Investigation (see Section 2.7 and **Appendix H**) has concluded the site is suitable for the proposed development and land use without further investigation or contamination management. The development satisfies SEPP 55.

SEPP 64 in relation to signage is not further relevant at this stage as no signage is identified or proposed. Signage zones are however proposed at the Culloden Road, Gymnasium Road, and West Precinct Road frontages of the site to serve as business identification and wayfinding signs and the provide the school and RIDBC generally with an address. This is shown in the architectural plan set / Design Statement at **Appendix B**. It is ultimately intended to either include details of signs as part of the post-exhibition phase of the assessment process or to defer to the use of other approval opportunities via available legislation at a future point, eg Exempt Development under the Education SEPP.

It is noted that the recently commenced *State Environmental Planning Policy (Koala Habitat Protection) 2019* does not apply to this general area of Metropolitan Sydney.

7.1.1 State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017

Aside from confirming that the development is permitted with consent via clause 35(1), and that *development consent may be granted for development for the purpose of a school that is State significant development even though the development would contravene a development standard imposed by this or any other environmental planning instrument under which the consent is granted* (under clause 42), no relevant planning controls or development standards apply to the site.

Clause 35(6) however requires the consent authority to take Schedule 4 of the SEPP into consideration as well as whether the development enables the use of school facilities (including recreational facilities) to be shared with the community. The Schedule 4 - Schools – Design Quality Principles are otherwise already addressed by this EIS in the Architectural Design Statement at **Appendix B** and in the Landscape Design Statement at **Appendix C**. The proposed development supports, and is consistent with, these design principles. Additionally, as stated, given the bespoke nature of the school and its facilities, it is not intended that the school grounds be used afterhours for wider community enjoyment or recreation.

Clause 57 requires referral of the DA to the RMS for its consideration as the development involves a new premises with direct vehicular or pedestrian access to any road and will cater for more than 50 additional students at that site.

The centre-based child care facility at the site has been considered with respect to Part 3 of the SEPP - Part 3 Early education and care facilities—specific development controls. This is set out below, as far as relevant.

Education SEPP provision	Comment
Clause 22 Centre-based child care facility—concurrence of Regulatory Authority required for certain development	
(1) This clause applies to development for the purpose of a centre-based child care facility if— (a) the floor area of the building or place does not comply with regulation 107 (indoor unencumbered space requirements) of the Education and Care Services National Regulations, or (b) the outdoor space requirements for the building or place do not comply with regulation 108 (outdoor unencumbered space requirements) of those Regulations.	Regulation 107 requires every child being educated and cared for within a facility must have a minimum of 3.25m2 of unencumbered indoor space, as defined by the regulation. At least 307m2 of space is provided for a maximum of 80 children at an average of 3.84m2 per child (260m2 target) Concurrence is not required in relation to regulation 107. Regulation 108 requires an education and care service premises to provide for every child being educated and cared for within the facility to have a minimum of 7.0m2 of unencumbered outdoor space. 638m2 of space is provided for a maximum of 80 children at an average of 7.98m2 per child (560m2 target) Concurrence is not required in relation to regulation 108.
(2) The consent authority must not grant development consent to development to which this clause applies except with the concurrence of the Regulatory Authority.	As above, concurrence is not required in relation to regulation 107 and 108.
23 Centre-based child care facility—matters for consideration by consent authorities	
Before determining a development application for development for the purpose of a centre-based child care facility, the consent authority must take into consideration any applicable provisions of the Child Care Planning Guideline, in relation to the proposed development.	See separate table below and **Appendix B**.
25 Centre-based child care facility—non-discretionary development standards	
(1) The object of this clause is to identify development standards for particular matters relating to a centre-based child care facility that, if complied with, prevent the consent authority from requiring more onerous standards for those matters.	Noted.
(2) The following are non-discretionary development standards for the purposes of section 4.15(2) and (3) of the Act in relation to the carrying out of development for the purposes of a centre-based child care facility—	Noted, see below.
(a) **location**—the development may be located at any distance from an existing or proposed early education and care facility,	Noted.

(b) **indoor or outdoor space** (i) for development to which regulation 107 (indoor unencumbered space requirements) or 108 (outdoor unencumbered space requirements) of the Education and Care Services National Regulations applies—the unencumbered area of indoor space and the unencumbered area of outdoor space for the development complies with the requirements of those regulations, or (ii) for development to which clause 28 (unencumbered indoor space and useable outdoor play space) of the *Children (Education and Care Services) Supplementary Provisions Regulation 2012* applies—the development complies with the indoor space requirements or the useable outdoor play space requirements in that clause,	As set out above, the minimum indoor unencumbered space requirements and outdoor unencumbered space requirements are satisfied.
(c) **site area and site dimensions**—the development may be located on a site of any size and have any length of street frontage or any allotment depth,	Noted.
(d) **colour of building materials or shade structures**—the development may be of any colour or colour scheme unless it is a State or local heritage item or in a heritage conservation area.	As noted, heritage listing at MQU is confined to the 'ruins' which sit at some distance to the north-east of the site. The Statement of Heritage Impact (at **Appendix N**) has concluded that the development will have no material impact upon the 'ruins'.

Child Care Planning Guideline August 2017

Guideline Provision	**Comment**
Section 2 – Design Quality Principles	
Principle 1 - Context	See commentary on these principles within the Architectural Design Statement at **Appendix B**.
Principle 2 - Built form	
Principle 3 - Adaptive learning spaces	
Principle 4 - Sustainability	
Principle 5 - Landscape	
Principle 6 - Amenity	
Principle 7 - Safety	
Section 3 – Matters for Consideration	
3.1 Site selection and location	
Objective: To ensure that appropriate zone considerations are assessed when selecting a site.	The development is within an existing university and the following considerations apply: The child care use is consistent with the operation of the university and its users, given the existing context of a number of child care facilities within the boundaries of the university and ordinarily in peripheral locations away from other typical university functions. The child care centre will be located away from licensed premises and places of entertainment within the university and industrial-type or related uses.
Objective: To ensure that the site selected for a proposed child care facility is suitable for the use.	The site has been identified by RIDBC and MQU as being suitable for the use. It provides street access, an address, and is generally free of environmental and planning constraints as generally set out in Section 2 of this EIS.

Objective: To ensure that sites for child care facilities are appropriately located.	The location is compatible with its co-located primary school and the specialist and essential services of RIDBC.
Objective: To ensure that sites for child care facilities do not incur risks from environmental, health or safety hazards.	The area and its adjacent land uses would not pose or present risk or danger to a child care centre is this location.
3.2 Local character, streetscape and the public domain interface	
Objective: To ensure that the child care facility is compatible with the local character and surrounding streetscape.	The child care centre forms part of an overall development that is low-rise in nature and is consistent with the development objectives for the site and the planning regime for the MQU campus.
Objective: To ensure clear delineation between the child care facility and public spaces.	The design of the child care centre provides legible and tangible delineation between adjacent uses and spaces.
Objective: To ensure that front fences and retaining walls respond to and complement the context and character of the area and do not dominate the public domain.	No aspect of the proposed development, including the child care centre will dominate the pre-existing environment or public domain.
3.3 Building orientation, envelope and design	
Objective: To respond to the streetscape and site, while optimising solar access and opportunities for shade.	The development addresses the street in a positive and legible manner. The design seeks to maximise amenity including solar access and provides shade as relevant and appropriate.
Objective: To ensure that the scale of the child care facility is compatible with adjoining development and the impact on adjoining buildings is minimised.	The scale of development is appropriate for its context and adjacent land uses.
Objective: To ensure that setbacks from the boundary of a child care facility are consistent with the predominant development within the immediate context.	The child care centre component is appropriately setback and sited in the context of the site's opportunities, constraints and the prevailing planning regime under the MQU Part 3A Concept Plan and its Design Guidelines.
Objective: To ensure that the built form, articulation and scale of development relates to its context and buildings are well designed to contribute to an area's character.	As above.
Objective: To ensure that buildings are designed to create safe environments for all users.	The design of the building has considered the safety of users, as amplified by the WMK Design Statement, the proposed lighting strategy and the results of the CPTED assessment.
Objective: To ensure that child care facilities are designed to be accessible by all potential users.	Being a dedicated RIDBC facility this is a given. An access report confirms compliance with the BCA and Australian Standards is achievable.
3.4 Landscaping	
Objective: To provide landscape design that contributes to the streetscape and amenity.	This is satisfied. Refer **Appendix C** of this EIS.
3.5 Visual and acoustic privacy	
Objective: To protect the privacy and security of children attending the facility.	The premises is not able to be overlooked given the existing built context of the campus and this development site.
Objective: To minimise impacts on privacy of adjoining properties	There are no nearby residential land uses likely to be affected by the child care centre component of this development.
Objective: To minimise the impact of child care facilities on the acoustic privacy of neighbouring residential developments.	As above. The distance from the child care centre component to permanent residential development is at least one hundred metres in all directions and suitably distanced from Macquarie University Village.

3.6 Noise and air pollution	
Objective: To ensure that outside noise levels on the facility are minimised to acceptable levels.	The general acoustic environment of the MQU campus and neighbouring land uses would generally be considered to be quiet and unaffected by significant or continuous noise sources, such as traffic on Epping Road or the M2 Motorway which are remote from the site.
Objective: To ensure air quality is acceptable where child care facilities are proposed close to external sources of air pollution such as major roads and industrial development.	As above.
3.7 Hours of operation	
Objective: To minimise the impact of the child care facility on the amenity of neighbouring residential developments	As noted earlier in this EIS, the proposed operating hours of 8:30am - 4:00pm, Mondays – Fridays only, are standard.
3.8 Traffic, parking and pedestrian circulation	
Objective: To provide parking that satisfies the needs of users and demand generated by the centre.	The parking related to the school and child care centre uses meets Council's DCP requirements as noted in the Transport Impact Assessment. This is also reflective of the bespoke nature of the RIDBC use and the general traffic and transport arrangements for children utilising the facility.
Objective: To provide vehicle access from the street in a safe environment that does not disrupt traffic flows.	Refer the architectural plan set and Transport Impact Assessment. This is satisfied.
Objective: To provide a safe and connected environment for pedestrians both on and around the site	The development is designed to provide easy and legible access by necessity given the nature of the RIDBC use.
Section 4 - Applying the National Regulations	
National Quality Framework Regulation Assessment Checklist	**Comment / Compliance**
104. Fencing or barrier that encloses outdoor spaces. Outdoor space that will be used by children will be enclosed by a fence or barrier that is of a height and design that children preschool age or under cannot go through, over or under it. Note: This clause does not apply to a centre-based service primarily for children over preschool age or a family day care residence or venue for over preschool age children	The Pre-school Courtyard is bound by the classroom buildings on three sides and open to the south for visual connectivity to Macquarie University. On this side, a security screen is provided with a height of 2.1m. The infill material is made from vertical balustrades that are arranged at 106mm centres to ensure the openings between the balusters do not exceed 100mm. The COLA is wholly enclosed and contained by the buildings, while the active play area to the north is also protected by a security fence made from vertical rod elements arranged at centres to keep children safe and to prevent injury.
106. Laundry and hygiene facilities The proposed development includes laundry facilities or access to laundry facilities OR explain the other arrangements for dealing with soiled clothing, nappies and linen, including hygienic facilities for storage of soiled clothing, nappies and linen prior to their disposal or laundering. Laundry/hygienic facilities are located where they do not pose a risk to children	A laundry facility has been provided adjacent to the main staff room in a location that is accessible by both parts of the building – the Pre-school and the Primary School. In addition to the laundry room, all playrooms within the Pre-school and all vision impaired classrooms in the Primary School are provided with a hygiene and nappy change rooms located between the main spaces for ease of access. The nappy change and hygiene rooms will all be fitted with change tables. In the case of the vision impaired rooms the hygiene rooms are also fitted with hoists to assist children with physical disabilities. In addition to the above specialised areas, there are

	general sanitary facilities and toilets distributed throughout the building providing further hygiene facilities.
107. Unencumbered indoor space The proposed development includes at least 3.25 square metres of unencumbered indoor space for each child. Refer to regulation 107 of the Education and Care Services National Regulation for further information on calculating indoor space.	Regulation 107 requires every child being educated and cared for within a facility must have a minimum of 3.25m2 of unencumbered indoor space, as defined by the regulation. At least 307m2 of space is provided for a maximum of 80 children at an average of 3.84m2 per child (260m2 target). Concurrence is not required in relation to regulation 107.
108. Unencumbered outdoor space The proposed development includes at least 7.0 square metres of unencumbered outdoor space for each child. Refer to regulation 108 of the Education and Care Services National Regulation for further information on calculating outdoor space, and for different requirements for out-of-school-hours care services	Regulation 108 requires an education and care service premises to provide for every child being educated and cared for within the facility to have a minimum of 7.0m2 of unencumbered outdoor space. 638m2 of space is provided for a maximum of 80 children at an average of 7.98m2 per child (560m2 target). Concurrence is not required in relation to regulation 108.
109. Toilet and hygiene facilities The proposed development includes adequate, developmentally and age-appropriate toilet, washing and drying facilities for use by children being educated and cared for by the service. The location and design of the toilet, washing and drying facilities enable safe and convenient use by the children.	The toilet and hygiene facilities are designed with dual entries to facilitate easy access from shared corridors and from playrooms. In the Pre-school the bathrooms also have a direct access from the outdoor learning area and have large internal windows to ensure passive surveillance and supervision. Ergonomic considerations pertaining to the age of the children has been applied throughout all sanitary facilities in the school with careful consideration of sight lines, heights of fixtures, fittings, mirrors, and vision panels.
110. Ventilation and natural light The proposed development includes indoor spaces to be used by children that — • will be well ventilated; and • will have adequate natural light; and • can be maintained at a temperature that ensures the safety and well-being of children.	Providing indoor spaces that have the optimal comfort and amenity for the children and adults is at the core of the architectural strategy for the proposed school buildings. The buildings have been designed with passive design principles, including orientation, shading, ventilation, with the intention to minimise energy consumption for mechanically heating and cooling spaces. Fresh air comes through openable windows and doors at floor level while windows at high level, under the skillion roofs have manually-operated glass louvres to assist with the cross ventilation. This is supplemented with an energy-efficient mechanical air conditioning system for those times when thermal comfort is not easy to maintain. The generous glazing areas provide ample natural light to all indoor spaces. The thermal comfort in the spaces is ensured by the performance glazing, the wall insulation and the mechanical heating and cooling air conditioning system
111. Administrative space The proposed development includes an adequate area or areas for the purposes of conducting the administrative functions of the service; and consulting with parents of children; and conducting private conversations.	There is a broad range of administrative and support spaces in the new schools. All administration areas have been designed and planned for co-location to best serve the diverse school community. The Pre-School Director, and the Primary School Principal, have dedicated offices and there are also dedicated large staff rooms. In addition to those, there are three specialist rooms, one large family meeting

Note: This space cannot be included in the calculation of unencumbered indoor space – see regulation 107	room, an 8-person meeting room and an interview room located around the main foyer. The Primary school administration office is located behind the main reception and waiting area and opens-up to two additional meeting rooms and two sick bays. These admin areas will be providing staff with adequate spaces in which to perform administrative and caring duties, consultations and conversations with parents and children.
112. Nappy change facilities (To be completed only if the proposed development is for a service that will care for children who wear nappies) The proposed development includes an adequate area for construction of appropriate hygienic facilities for nappy changing including at least one properly constructed nappy changing bench and hand cleansing facilities for adults in the immediate vicinity of the nappy change area. The proposed nappy change facilities can be designed and located in a way that prevents unsupervised access by children.	Refer responses to 106 and 109 above.
113. Outdoor space—natural environment The proposed development includes outdoor spaces that will allow children to explore and experience the natural environment.	Outdoor play areas have been maximised and reinforce the facility's response to landscape, with biophilia or greenspace integrated into the play areas to encourage interaction with the natural environment. The preschool outdoor learning areas are intended to be connected and divisible - with sensory and retreat play areas nominated to each outdoor learning space; enabling differing streams of students to interface with the outside while taking into consideration child protection and passive supervision strategies. There are several different zones within the open space: sensory outdoor play (sandpit), withdraw retreat outdoor play (landscape), sensory outdoor play (sound), sensory water play, storytelling amphitheatre. The COLA area for the primary school is designed to accommodate diverse age groups and additional needs by students who may be vision or hearing impaired. A central mound in the centre of this area is designed to act as a biophillic feature that also discourages ball play and promotes work areas as extension to the interior learning environments.
114. Outdoor space—shade The proposed development includes adequate shaded areas to protect children from overexposure to ultraviolet radiation from the sun.	The Pre-School outdoor space features a canopy that is fitted with adjustable manually operated louvres to allow for sunlight control while maximising the penetration of natural light. The COLA space within the Primary School has a roof covering 81% of the total open area to allow for a greater flexibility in the use of the space throughout the year, while the active play areas to the north have been carefully integrated with the existing landscape to take advantage of the natural cover and shade provided by the large trees.
115. Premises designed to facilitate supervision	Child-safety is front of mind and should encompass all design considerations for the future facility. Further to the above discussion regarding laundry and hygiene

The proposed development (including toilets and nappy change facilities) are designed in a way that facilitates supervision of children at all times, having regard to the need to maintain the rights and dignity of the children.	facilities (under 106 and 109), the separate playgroup spaces within the preschool are designed to maximise lines of sight to the grounds, the wet areas and between classrooms. The retreat spaces have been designed as highly transparent zones which enables best practice to be achieved in terms of the passive surveillance of students with teachers. This approach has also been applied to the classrooms within the Primary School. Furthermore, all outdoor play areas are designed to allow to be closed off to promote child safety and for adequate supervision as required.

7.1.2 Ryde Local Environmental Plan 2014

Permissibility

The development site is zoned B4-Mixed Use under Ryde LEP 2014 and development for the purpose of an *educational establishment* is permitted with consent in the zone. The balance of the RIDBC uses on the site are ancillary development supporting the school and Renwick Centre and are nonetheless uses which are also permitted with consent noting *centre-based child care facilities* and *health services facilities* are also permissible under the LEP. The administrative functions of RIDBC are ancillary to the overall function of RIDBC.

Under clause 2.6 subdivision may be carried out with development consent.

Principal Development Standards

No principal development standards apply to the development site. This includes minimum lot size, building height, and floor space ratio.

The only relevant planning control applicable is that to limit car parking within the Macquarie Park Corridor to 1 space per 80m2 of floor space. This matches the pre-existing parking control imposed at the approval of the MQU Part 3A Concept Plan. Given only 58 spaces are proposed for a GFA of 10,475 m2, the provision of parking at RIDBC will be 1 space per 180 m2, well within the maximum.

Other considerations

In relation to heritage, as noted in Section 3.2.9 of this EIS, the development site is not listed as a heritage item, despite the erroneous mapping of the LEP. The Statement of Heritage Impact at **Appendix N** states the proposed development will have no adverse impact on the heritage significance of the historic stone cottage ruins – the only listed heritage item at the MQU campus.

The site is unaffected by acid sulfate soils and the requirement for an Acid Sulfate Soils Management Plan is not required under clause 6.1 of the LEP.

Clause 6.3 of the LEP in relation to flood planning does not apply as the development site is unaffected by flooding as noted in **Figure 19** of this EIS. The lowest floor level (basement at RL 72) sits well above what would otherwise be the flood planning level of RL 58.

In sum, the proposal complies with all relevant provisions of the LEP, noting few provisions of the LEP directly apply to the MQU campus, the development site, or this type of development.

7.1.3 Part 3A Concept Plan approval

As set out in previous sections of this EIS, the approved MQU Part 3A Concept Plan (as modified) generally provides for the majority of the controls and relevant planning regime for the MQU campus, including this site.

The following sets out compliance with the relevant Concept Plan conditions remaining applicable to new developments, as well as its supporting Design Guidelines.

Concept Plan

Concept Plan approval (as modified – MOD 1)	**Compliance / Commentary**
A3 Gross Floor Area (a) The provision of an additional 400,000m2 of commercial GFA and associated parking (b) The Provision of an additional 157,000m2 of academic GFA (c) The provision of an additional 3,450 beds for University purposes only. (d) Infrastructure upgrading and improvements to the road network as required, (e) Rationalisation of University car parking locations. (f) A maximum of 171,000m2 of GFA for Precinct D Note the definition of academic use and commercial use GFA has now been defined by MOD 1 as follows: *Academic Use* - An educational establishment as defined under Ryde Local Environmental Plan 2014, including any development that is ordinarily incidental or ancillary to an educational establishment including, but not limited to, food and drink premises, childcare centres, recreational facilities and research stations (for non-commercial purposes). *Commercial Use* - Commercial uses are non-academic uses that are permissible with consent in the 84 Mixed Use zone under Ryde Local Environmental Plan 2014, including the additional permitted uses at Schedule 1, Clause 11A of Ryde Local Environmental Plan 2014.	(a) The Cochlear development's GFA is excluded from the calculation of overall GFA under this condition as it pre-dates the Concept Plan approval. This is acknowledged and reinforced in the executed VPA with Council. The existing residual commercial GFA on the campus since the Concept Plan approval is 400,000m2 less the approved 13,982m2 commercial component of the Australian Hearing Hub's overall 23,182m2, and less the approved 23,620m2 from the 8-12 University Avenue total GFA of 49,445m2. This equates to 362,398 m2 available or remaining. The proposed development's commercial GFA (with reference back the tables in Section 4.3 of this EIS is 2,674 m2. This complies and sits within the overall 400,000m2 and the available 362,398m2. The new balance of commercial development following the RIDBC development will be 359,724 m2. The associated parking tied to the commercial use is consistent with the car parking rate applied under the Concept Plan and since replicated in the LEP. (b) The development provides a further 7,801 m2 of academic GFA within the overall cap of an additional 157,000m2. Some 49,754m2 has already been developed or approved (including the Central Courtyard (net increase) and 8-12 University Avenue development). Once this DA is approved, the balance remaining will be 99,445 m2. Again, this complies and sits well within the GFA cap available. The associated parking tied to the academic use is consistent with the car parking rate applied under the Concept Plan and since replicated in the LEP. (c), (d), (e), and (f) - Not relevant.
B1 Car Parking Car parking for commercial uses shall not exceed a maximum rate of 1 space per 80m2 of gross floor area.	In general terms, irrespective of the GFA / land use designations, and based on the GFA of 10,475 m2, the proposed 58 parking spaces are well within 1:80m2, being about 1 space in 180 m2 overall. The proposed 58 spaces (if categorised as 'other uses') also sits well within the 5,800 cap, given

The maximum car parking across the campus is 10,800 spaces, comprising a maximum of 5,000 car parking spaces for commercial uses and 5,800 car parking spaces for other uses. New car parking for commercial buildings shall be located in basements and generally contained within the footprints of buildings above. The design of any above ground parking shall include architectural treatment of the elevations to reduce their visual impact and dominance.	the existing parking supply at the campus at present is only 4,800. If a basic pro-rata rate based on GFA is used (that is 74.5% of 58 as academic and 25.5% of 58 as commercial), the development would be capturing 43 academic spaces and 15 commercial spaces. These are minimal reductions from the overall cap / additions to the current supply. Whilst strictly not what would be considered a commercial use given its mixed GFA categorisation, the building nonetheless has utilised a basement level to contain car parking and to maintain this within the building footprint. The exposed areas of the basement level have been suitably treated or softened with detailing in the materials and landscaping. The reduces the overall visual impact and any perceived dominance of the exposed areas of basement car parking.
B2 Transport and Pedestrian Management A 40% non-car mode share target shall be adopted for commercial uses on the site. A 62% non-car mode share target shall be adopted for the academic uses on the site. A travel survey shall be undertaken every 5 years.	The 40% mode share split to non-car mode was achieved once the Macquarie University railway station opened (since converted to a Metro). The MQU 2014 Sustainability Report and Macquarie University Travel Demand Survey 2014 Analysis Report confirmed that public transport use increased to 48% in 2014. The Transport Impact Assessment reinforces the trend away from car use and to non-car modes indicating 57% public transport use alone in 2017. With a low parking space rate to employee number (crudely 58 spaces overall ÷ 300 staff) about 19% of staff would be using private cars to travel to and from the development. Note, this has counted school drop-off and pick up spaces and fleet car spaces within the basement. It is understood the most recent travel survey provided to the Department was in 2019.
C1 Staging of Development (1) The Proponent shall demonstrate with each application for building works that the proposed development represents the orderly and coordinated development such that: (a) It may be serviced by existing infrastructure, by infrastructure approved by this Concept Plan, or is capable of being services; and (b) Access for vehicles and pedestrians is available and can be made available.	Services statement(s) demonstrating adequacy of essential services accompany this EIS at **Appendix I**. A Transport Impact Assessment demonstrating provision of pedestrian and vehicular access accompanies this EIS at **Appendix F**.
C3 Landscaping A Landscape Management Plan, integrated with the Design Excellence and Urban Design Guidelines is to be prepared for each precinct.	A Landscape Management Plan (including Vegetation, Threatened Species and Weed Management Plans) was prepared in 2010 to accompany the Precinct E Design Excellence Guidelines. This was updated in 2017 and is now appended to the MQU Urban Design Guidelines. A Landscape Plan accompanies this EIS at

	Appendix C. The plan has been prepared to satisfy the Design Guidelines as they apply to Precinct B.
C4(2) Riparian Zone, Flooding and Stormwater A Stormwater Management Plan is to be submitted for approval with each application for new building works, as relevant.	A stormwater management plan has been prepared as part of **Appendix I**.
C5 Bushfire Protection A Bushfire Management Plan is to be prepared, particularly in relation to Precinct B, and submitted with each application for building works, as relevant. Uses constituting 'Special Fire Protection Purposes' as defined in 'Planning for Bushfire Protection 2006' are to be undertaken in consultation with the NSW Rural Fire Service	A Bushfire Hazard Assessment accompanies the EIS at **Appendix L**. As part of the preparation of the Bushfire Hazard Assessment, consultation was made with the RFS in recognition of the Special Fire Protection Purposes status of the development.
C6 Flora and Fauna The Vegetation, Threatened Species and Weed Management Plans shall be submitted with each application for building works.	As above, a Landscape Management Plan (including Vegetation, Threatened Species and Weed Management Plans) was prepared in 2010 to accompany the Precinct E Design Excellence Guidelines. A Landscape Plan accompanies this EIS at **Appendix C**, whilst the BDAR Waiver documents are at **Appendix J** along with an addendum report on the impacts of the development upon the site's vegetation. An arborist report is found at **Appendix K**.

C7 ESD
 	
The requirements of ESD (as outlined in the SoC) are to be detailed with each application for new building works, as relevant.
 	
The SoC indicates as follows:
• Commercial development on the site shall be capable of achieving the following targets:
  ○ Buildings should achieve a minimum 4-star Green Star rating.
  ○ Buildings should achieve a minimum 4.5-star NABHERS rating.
  ○ Retail development will comply with any reasonable future rating tool provided by the Australian Greenhouse Rating Scheme.
• Each development involving external works is to provide measures to capture, retain, and minimise litter, oil, sediment, nutrients, and pollutants prior to stormwater runoff discharge to the receiving creeks.
	An ESD report (and range of other relevant supporting information) addressing sustainability measures accompanies this EIS at **Appendix Q**.
	
	The development (whilst accommodating some 25.5% commercial uses within its floorplates across 3 levels that are ancillary to the education or academic purposes of RIDBC) is not a stand-alone commercial development. To seek compliance with portions of floor space would be unreasonable, impractical, and impossible.
	
	Notwithstanding, as detailed in the ESD report prepared by JHA, the proposed development is not pursuing a formal Green Star rating through the certification procedures of the Green Building Council Australia (GBCA). However, the project team has benchmarked the development against the Green Star Design & As-Built v1.3 Rating System, with a goal of equivalency to a 4.5 Star Green Star rating. A minimum of 50 points for 4-star equivalency is required, noting the development achieves 58 points. 60 points is the target for 5-star.

• Each development is to consider opportunities for water re-use to service non-potable uses such as irrigation for landscape areas and for toilet flushing, as relevant to the scope of the proposal.	The development is also seeking to exceed the 4.5-star NABHERS rating. A 5-star outcome is able to be achieved, if not higher. MUSIC modelling at **Appendix I** concludes that 100% reduction in gross pollutants is able to be achieved, and 47.4% reduction in nitrogen; 71.7% reduction in phosphorous; and 85% total suspended solids is also achievable. Water re-use is a significant component of the ESD approach to the development, noting also the inclusion of a 480m3 OSD tank as part of the development.
C10 Access, Traffic, Transport and Parking … A Workplace Travel Plan referred to in the Statement of Commitments be prepared for each commercial development and submitted for approval prior to the occupation of that commercial development.	Again, strictly, the development is not wholly commercial and whilst it does include administrative functions of RIDBC, these are not commercial offices. Notwithstanding, a workplace travel plan (Green Travel Plan) to assist in reducing car dependency and promote non-car modes has been prepared and forms part of the Transport Impact Statement at **Appendix F**.
C13 Construction Staging A CMP, Erosion and Sediment Control Plan and a Geotechnical Report must be submitted for each development site.	A CMP accompanies this EIS at **Appendix R**. An erosion and sediment control plan forms part of the civil works package at **Appendix I**. A Geotechnical Assessment accompanies this EIS at **Appendix G**.
C14 Utilities The following plans are required to be approved by the relevant agencies prior to the first application for building works: - A detailed water supply infrastructure needs analysis; - A detailed service master plan; - A water supply needs analysis; and - All electricity and other relevant services shall be accommodated underground, where ecological or landscape outcomes are not compromised.	The Campus wide Utilities Management Plan was prepared in 2010 to accompany the Precinct E Design Excellence Guidelines. Services statement(s) demonstrating adequacy of essential services accompany this EIS at **Appendix I**.

Design Excellence Strategy and Urban Design Guidelines (August 2018)
Precinct B – North West Precinct

Guideline requirement	Compliance / Commentary
Key Elements	
Strengthen the activity axis along Gymnasium Road to provide a more distinguished entrance and avenue link to the Academic Core.	Complies, as the development will define the entrance with a built form and presence and reinforce Gymnasium Road's axis as an entry point to the campus.
Retain significant native woodland areas in this precinct.	The significant woodland areas within Precinct B are situated towards the Culloden Road and Talavera Road intersection. This stand of vegetation is remnant Sydney Turpentine Ironbark Forest (STIF). The vegetation at the site would not be considered significant from a biodiversity standpoint given it is planted native vegetation, and not remnant – note the issued BDAR Waiver.

	As much vegetation has been retained as is possible for a site approved as a development site under the Part 3A Concept Plan. In recognition of the likely bushfire impacts the area is otherwise defined as Managed Lands.
Protect and enhance the Mars Creek and Culloden Creek riparian corridors.	The development is not within or sufficiently near these riparian corridors to impact upon the riparian values of those corridors.
Incorporate a new green space leading down to Mars Creek. This space is to address a new north-south road, the Gymnasium, and respond to views of the creek and Academic Core.	This is not relevant to the subject development. The subject development does not impact upon the realisation / delivery of this outcome.
New buildings should be screened with similar tree species so that they blend with the backdrop when viewed across from the Academic Core. The existing parkland character should remain as the primary focus of this view.	As much canopy vegetation has been retained as is possible to ensure the pre-existing and planned parkland character can be retained. The development sees the existing vegetation as a major asset to its appearance and amenity and applies this as a borrowed landscape in part. The landscape outcomes sought augment the retained native vegetation. The landscape approach has been broadly endorsed by the MQU Design Review Panel.
New buildings setback from Culloden Road.	The development addresses Culloden Road with a sensitive and functional setback area proportionate with the scale of development and the constraints of the sloping land. To push the development further away from Culloden Road would result in consequent impacts upon earthworks, additional tree removal, and reconfigured bulk within the development.
Incorporate a mix of uses - student housing, commercial/ research, academic uses and car parking.	A mix of uses (albeit under the singular RIDBC banner) is achieved in the provision of a school, child care centre, research, medical, academic and other ancillary uses.
Lot Controls – Lot B03	
Built Form – Indicative height 6 storeys. – The lot is suitable to support multiple buildings.	At a maximum of 2-3 storeys at its highest point, the two-pavilion development satisfies this control.
Access – Primary address located indicatively on Gymnasium Road along the north-east frontage. – Potential secondary address located indicatively on Culloden Road along the north-west frontage. – Service access from West Precinct Road along the northeast frontage and the internal secondary roads. – Consider opportunities for at grade car parking as appropriate for future uses.	Capacity is provided for multiple frontages for access. Accordingly, the principal address of the development is towards Gymnasium Road with the school and child care component addressing Culloden Road. Servicing is via West Precinct Road as envisaged by the control. No new at-grade parking is provided other than limited short-term parking. Existing at-grade parking is utilised via a license agreement between MQU and RIDBC.
Landscape – Interface with the Gymnasium Road Gateway. – Landscape buffer along Culloden Road. – Review and retain significant trees if possible. – Refer to the Gymnasium Road Gateway and West Precinct Road landscape guidelines in the Public Domain chapter.	As above, the main address is to Gymnasium Road and the landscape treatment in the location reinforces this as an entry point and address in tandem with the architectural design. The Culloden Road frontage provides a typical street edge treatment of plantings and trees within the verge and setback area. As noted, the landscape design / response has been broadly endorsed by the MQU Design Review Panel.

7.2 Contributions

Council's Section 7.11 Development Contributions Plan 2020 does not apply to the proposal. Instead, the development is subject to the Voluntary Planning Agreement (VPA) executed between Council and Macquarie University in February 2013.

Under Schedule 3 of the VPA three categories of land uses apply, with each category having an applicable monetary contribution calculated on a square metre or per bed basis.

The three categories and rates (as indexed) are:

Category 1	Housing for University Purposes	$1,010.88 per bed
Category 2	Commercial and research (for commercial purposes) and business incubation	$38.65 / m2
Category 3	**Academic use including research (for non-commercial purposes).**	**$ Nil**

Further, 'University Road Works' at the Culloden, Gymnasium and Waterloo Road intersection / roundabout also apply when the average vehicle count results in 7,000 or more vehicles per weekday on Gymnasium Road immediately east of Culloden Road. The traffic count is defined as the average two-way traffic volume for at least one week's duration during normal teaching periods.

Note, the terms 'commercial' and 'academic' in this instance cannot be used interchangeably with those defining or determining GFA for the purposes of Concept Plan compliance. The terms are specific to the VPA.

Based on the above, no contribution applies to Category 1. The 'University Road Works' is also not triggered as the proposed development will not contribute to breaching the 7,000 vehicles per weekday threshold. The most recent traffic count carried out on Gymnasium Road, prior to the COVID-19 pandemic, indicated that daily traffic flows were in the order of 5,000 vehicles per day. As noted in the Transport Impact Assessment, the RIDBC development may increase traffic flows on Gymnasium Road by approximately 285 vehicles per day and therefore would not trigger the upgrade of this intersection.

Similarly, the development as a whole (whether academic or otherwise) is principally carried out on a not-for-profit and charitable basis as a non-commercial business. RIDBC is variously categorised / certified as:

- A Charitable Fundraising Authority (No 10295) by NSW Fair Trading;
- A Public Benevolent Institution (ABN 53 443 272 865) by the Australian Business Register Australian Tax Office, and the Australian Charities and Not-for-profits Commission (ACNC); and
- Subject to charity tax concessions by the Australian Tax Office.

See these at **Appendix W**.

Further, under section 6 of the *Royal Institute for Deaf and Blind Children Act 1998* related to the objects of the Act, RIDBC must not carry out its activities for the purpose of private gain for particular persons. Its principal objective is the advancement in life, to the greatest extent practicable, of deaf and blind children. To that end the business is a not-for-profit entity and is not responsible to any shareholder or other interest, other than for advancement in life of deaf and blind children.

Based on the above, the development would also not fit within Category 2 development which exclusively relates to commercially-focussed entities and businesses. The best fit for the nature of RIDBC and the type and form of development is Category 3 development under the VPA.

This is also reflected in the types of uses within the development and the components of GFA to academic and non-commercial research and associated and ancillary uses, including those with direct relationships to wider academic and research functions of MQU. The development can be described as 74.5% academic in function based on its floor space / GFA. Even so, the balance that is attributed as commercial (using the definitions under MOD 1 of the approved MQU Part 3A Concept Plan) would be entirely ancillary to the core RIDBC functions, noting again these definitions are not interchangeable and do not relate to the VPA. They can however be used as guidance.

On this basis, the contribution to Council for the development is nil.

7.3 Crime Prevention through Environmental Design

Crime Prevention through Environmental Design (CPTED) is a crime prevention strategy that focuses on the planning, design and structure of cities and neighbourhoods. It reduces opportunities for crime by using design and place management principles that reduce the likelihood of essential crime ingredients (law, offender, victim or target, opportunity) from intersecting in time and space (source: NSW Police – Safer by Design).

Based on information made available on the NSW Bureau of Crime Statistics and Research (BOCSAR) webpage, Macquarie University / Ryde is generally identified as being subject to low levels of crime and anti-social behaviour. In summary, BOCSAR's 2019/2020 rating for different types of crime at Macquarie University (postcode 2109) is:

- Assault – Very low
- Homicide – Nil
- Robbery - Nil
- Sexual Offences - Low
- Theft – Very low
- Malicious Damage to property – Very low
- Disorderly Conduct – Very low
- Drug Offences – Very low
- Other Offences – Very low
- Offences at schools and involving children or juveniles - Nil

In general, the Macquarie University postcode would not be considered to be a high or very-high risk area under any measure of crime. Broadly it is a very low risk crime area.

The relevant CPTED Principles under the NSW Police Safer by Design guidelines are:

- Territorial Reinforcement
- Natural Surveillance
- Access Control
- Space Management

These principles are addressed in turn below and in the CPTED section of the Architectural Design Report at **Appendix B**. A separate CPTED Design Assessment has also been prepared by LCI with a direct response to, and review of, the site and the proposed design of the development. The following is derived from that CPTED Design Assessment – see **Appendix S**.

Territorial Reinforcement

Community ownership of public space sends positive signals. People often feel comfortable in, and are more likely to visit, places which feel owned and cared for. Well frequented places also reduce opportunities for crime whilst increasing the level of risk to criminals. Community ownership also increases the likelihood that people who witness crime will respond by quickly reporting it or by attempting to prevent it.

Territorial reinforcement can be achieved through:

- designs that encourages people to gather in public space and to feel some responsibility for its use and condition;
- design with clear transitions and boundaries between public and restricted spaces; and
- clear design cues on who is to use a space and what it is to be used for.

The RIDBC building entrances will be clearly marked to define areas and public spaces.

The Territorial Reinforcement risk rating of the development is Low (85%).

Natural Surveillance

The attractiveness of crime targets can be reduced by providing opportunities for effective electronic and natural surveillance. Good surveillance means that people can see what others are doing and is an effective deterrent to criminals from committing crimes in places that are well supervised.

Natural surveillance is a by-product of well-planned, well-designed, and well-used spaces. This is achieved when normal space users can see and be seen by others. The RIDBC facility has effective building layouts, orientation, site location, landscaping and security lighting.

Electronic surveillance will be achieved through the use of Security Cameras, Video Recordings, and Intercoms. The strategic positioning of the security lighting and cameras is a major factor for deterring criminal behaviour and the prevention of anti-social behaviour.

The RIDBC buildings have glass doors and windows which will allow for natural external surveillance from within the building. There will be clear lines of sight around the building and the area will be well lit at night.

Security Cameras will be installed to record pedestrian movements, monitor access control points and cover any black spots around the buildings.

The Natural Surveillance risk rating of the development is Low (85%).

Access Control

The RIDBC buildings have applied electronic access control measures that will restrict, channel, and encourage people into, out of and around the facility, combined with way-finding signage and formal / informal routes, that will reduce criminal activity.

Natural access control includes the tactical use of landforms, design measures including building configuration; formal and informal pathways, landscaping, fencing and gardens.

By making it clear where people are permitted to go or not go, becomes difficult for potential offenders to reach and victimise people and their property. Poor boundary markers and confusing spatial definition make it easy for criminals to make excuses for being in restricted areas.

Effective access control can be achieved by creating effective:

- landscapes and physical locations that channel and group people into supervised areas;
- restricted access to internal areas or high-risk areas; and

- mechanical access control includes the deployment of security counter-measures.

Public access into the RIDBC School will be off Culloden Road and the access into the Clinical Building will be from Gymnasium Road. Access control readers will be installed at all entry points to allow access for authorised persons into the buildings. The Clinical Building basement car park will be restricted for RIDBC "fleet vehicles" only entry via a card reader.

The Access Control risk rating of the development is Low (83%).

Space Management
Space management involves the formal supervision, control, and care of the development. Popular public spaces are often attractive, well maintained and well used spaces.

The RIDBC building has effectively used the principle of space management in their designs, that ensures that the space is appropriately utilised and will be well cared for.

All space, even well planned and well-designed areas need to be effectively used and maintained to maximise community safety, places that are infrequently used are commonly abused.

Space management strategies include activity coordination, site cleanliness, rapid repair of vandalism and graffiti, replacement of faulty security lighting and the removal or refurbishment of decayed physical elements.

Regular maintenance strategies will be put in place for cleaning and to ensure that rubbish and any graffiti are removed, and the quality of the buildings are well maintained.

The buildings will be managed by applying good security and CPTED principles:

- Security camera surveillance will be installed around the building perimeters and at all entry points, lift lobbies and pedestrian walkways.
- Clear and visible directional and cautionary signage will be installed at entrance and exit points and at other key locations.
- Access control into the basement car park will be maintained at all times and under constant security camera surveillance.

The Space Management risk rating of the development is Low (100%).

In summary, the overall design achieves a Low Risk rating at 88.25%. No further mitigation measures are warranted in the circumstances.

7.4 Traffic and Parking

JMT Consulting has prepared a Transport Impact Assessment (TIA) for the proposed development which addresses amongst other things the traffic generation / travel demand of the development, its general impacts, and construction traffic management. The TIA can be found at **Appendix F**. The TIA also includes a draft Green Travel Plan.

Construction Traffic and Operational Traffic matters are discussed in the sub-sections below.

7.4.1 Construction Traffic Management

Construction works for the proposal are expected to commence in July 2021 and take place over approximately 18 months.

For the duration of the works the activities likely to generate large vehicle movements include bulk excavation works associated with the grading and formation of the site, concrete pours, and deliveries of materials and any pre-fabricated elements associated with the construction.

Work associated with the proposal will be carried out between the following hours of construction:

- Weekdays: 7am – 6pm
- Saturdays: 8am - 4pm
- Sundays and public holidays: No work

Construction parking

As with other recent construction projects at MQU, a limited amount of parking will be contained within the site for construction staff and visitors to the site and otherwise set aside within campus parking. Some car parks on the MQU campus are subject to parking permits and will not be available for use by contractor staff. There are other car parks in the campus that allow public car parking (subject to hourly parking fees) which could be available for use by construction staff. A shuttle bus service to discourage construction traffic associated with the development from utilising public and residential streets or public parking facilities is also likely to be made available. It is expected that a high number of workers will travel by public transport to the site, with workers able to store their tools on site. Carpooling will also be encouraged.

Construction vehicle access and routes

Construction vehicles will access the development site via either or both Culloden Road (a principal access point) and West Precinct Road (as a secondary access point but mainly during early works eg excavation). Traffic controllers will be present at all vehicle crossover points to manage interactions with pedestrians and other traffic. Alternative access (to be determined with the contractor) may involve all access from within MQU.

With respect to the likely traffic routes for construction vehicles, the main inbound traffic routes will be:

- From M2 south, Talavera Road, Culloden Road and/or Gymnasium Road;
- From M2 north, Christie Road bridge, Talavera Road, Culloden Road and/or Gymnasium Road;
- From Epping Road North, Culloden Road and/or Gymnasium Road;
- From Epping Road South, Culloden Road and/or Gymnasium Road (not permitted from 6am – 10am, Monday to Friday, alternative route during this time is along Herring Road, Talavera Road, Culloden Road Gymnasium Rd.

The main outbound traffic routes will generally be the reverse:

- To M2 south, by Gymnasium Road and/or Culloden Road, Talavera Road and Christie Road;
- To M2 north, by Gymnasium Road and/or Culloden Road, Talavera Road and M2 ramp (across from Herring Road);
- To Epping Road North, by Gymnasium Road and/or Culloden Road, Waterloo Road and Vimiera Road (right turns are not permitted from Culloden Road onto Epping Road); and
- To Epping Road South, by Gymnasium Road and/or Culloden Road.

Construction traffic generation

Construction traffic generation of approximately 50 trucks per day is anticipated at the peak of the works, with each truck generating an entry and exit trip. It is anticipated that a peak of 15 two-way truck movements may occur during a one hour period. Trips generated by construction staff will typically be outside of the main road network peaks. The impact of construction traffic volumes on the external network is therefore expected to be low. The good availability of public transport in the precinct, with Macquarie University railway station within walking distance and a number of buses serving the campus adjacent to the site, will encourage workers to minimise private vehicle use which will further reduce the impacts on the local road network.

Works zone

To facilitate the construction project, a work zone may be established on the eastern side of Culloden Road adjacent to the site. The work zone would require the removal of approximately 4 existing on-street parking spaces, which are proposed to be removed regardless following the opening of the RIDBC Centre of Excellence to facilitate access to the porte cochere pick up / drop off area. The work zone would be approximately 25m in length and allow for large items to be lifted by cranes positioned within the site. A B-Class hoarding will be installed adjacent to the work zone to provide protection to pedestrians walking along Culloden Road. The Culloden Road footpath will remain open at all times during the construction period. The balance of works will be able to be carried wholly within MQU and the development site.

Construction Traffic Management Plan

A site-specific Construction Traffic Management Plan will be prepared and implemented by the appointed contractor prior to the commencement of works. The plan will include the following:

- Traffic Control Plans;
- Specific methods of safely managing construction vehicle and pedestrian
- traffic within the surrounding area;
- Crane locations;
- Vehicle turning paths;
- Site compound layout and access;
- Driver facility areas; and
- Additional work zones / road closures.

7.4.2 Operational Traffic Management

Traffic Demand / Generation

Once operational, the RIDBC Centre of Excellence will accommodate approximately 300 staff on a typical day, inclusive of both the pre-school, school and the main RIDBC consulting building. The forecast mode share and travel demand has been developed based on the maximum car parking rate of 1 space / 80m2 and the site's public transport accessibility, as well as current travel patterns to MQU. As noted, the total parking at the site is 58 spaces.

In line with the mode-share targets stipulated by the approved MQU Part 3A Concept Plan (MOD 1), a non-car mode share of 62% for staff within the RIDBC building has been adopted. The forecast number of staff travelling to site over the day and peak period is summarised in Table 2 of the TIA, and as replicated over. The estimated future daily trips is based on surveys undertaken by TfNSW which indicates that trips generated during the AM peak hour account for approximately 20% of the daily number of person trips.

Table 2 Total staff trips

Mode	Mode Share	Number of staff travelling to the site		
		AM peak period* (6.30am – 9.30am)	AM peak hour** (8am – 9am)	Daily
Metro	35%	105	53	263
Bus	15%	45	23	113
Car Driver	38%	114	57	285
Walked only	5%	15	8	38
Bicycle	2%	6	3	15
Car Passenger	5%	15	8	38
Total	**100%**	**300**	**150**	**750**

* Figures are consistent with PM peak period travel demand (4pm – 7pm)

** Figures are consistent with PM peak hour travel demand (5pm – 6pm)

The likely traffic to be generated by staff, the pre-school, and the primary school is set out below.

Staff

Based on the trip generation assumptions set out above, the following traffic generation is anticipated from staff of the RIDBC site (both education and administration functions)

- AM peak hour (8am – 9am) 57 vehicle trips
- PM road network peak hour (5pm – 6pm) 57 vehicle trips

Pre-school

The number of trips to the site for the pre-school has been estimated based on the 80 places to be offered at the centre. Unlike the primary school, travel to the pre-school is typically undertaken by private vehicle as pre-school aged children are generally not eligible to participate in the assisted school travel program.

It should be noted however that the hours of operation for the pre-school are 8.30am – 4pm, and therefore no vehicles would be generated during the afternoon road network peak hour of 5pm – 6pm. At the existing RIDBC pre-schools children are typically dropped off between 8.30am and 9.30am and collected between 3pm and 4pm.

Adopting the findings of the recent investigations by TfNSW into trip generation for child care centres in NSW, JMT Consulting advises the following vehicle trips are forecast during the road network peak hours:

- AM road network peak hour (8am – 9am) 41 vehicle trips
- PM road network peak hour (5pm – 6pm) 0 vehicle trips

Primary school

Travel behaviours based on RIDBC's existing school at North Rocks has been used by JMT Consulting to inform the trip generation assessment. The RIDBC primary school, containing a maximum of 120 children, will operate in a very different way when compared to a typical public school given the following:

- A high proportion of students are picked up in taxis and minivans containing up to 12 seats and are transported to the site. RIDBC participate in the NSW Government's Assisted School Travel Program (ASTP) which plays a significant role in meeting the needs of students with disability by providing free specialised transport to and from school. Children are picked up from their residences and then transport in groups to the school.
- Students typically arrive to the school between 8am and 9am, with mixed pick-up times due to outreach programmes with other schools. Students leave and arrive in shifts, with RIDBC allocating time-slots to drivers so as to stagger the arrival and departure periods. This has the effect of distributing traffic movements over a longer period of time when compared to a typical public school.
- No Out of School Hours Care (OOSH) placements are to be provided at the school.

At the existing Norths Rocks site, only 10-15 children currently arrive via private vehicle. The remaining 70 children arrive in taxis or minivans. Based on these specific travel characteristics of special needs students, the following trip generation forecasts have been developed for the future 120 (maximum) place school:

- AM road network peak hour (8am – 9am) 30 vehicle trips
- PM road network peak hour (5pm – 6pm) 0 vehicle trips

The forecast traffic generation and therefore be summarised as follows:

- Combined AM road network peak hour (8am-9am) 128 vehicle trips

See summary table over derived from the TIA.

Table 3 Forecast traffic generation

Period	Time	Traffic Generation			
		Staff	*Pre-school*	*Primary school*	*Total*
Morning peak	7am - 8am	19	0	0	19
	8am - 9am*	57	41	30	128
	9am - 10am	26	29	10	65
Afternoon peak	2pm - 3pm	5	29	20	54
	3pm - 4pm	8	41	20	69
	4pm - 5pm	19	0	0	19
	5pm - 6pm*	57	0	0	57

* Represents the road network peak hours within Macquarie Park

Traffic Impacts and Intersection Performance

Condition C10 of the approved MQU Part 3A Concept Plan required the development of a detailed micro-simulation model, to be prepared in liaison with Council, the RTA and the Ministry of Transport and submitted to the Department of Planning for approval prior to or with the submission of the first application for new non-academic floor space on the site.

The traffic modelling involved extensive consultation with key agencies, including RMS, City of Ryde and Transport NSW. Numerous meeting were held with the RMS to agree key parameters for the modelling and to provide feedback at key stages of the modelling process.

The micro-simulation traffic modelling undertaken considered a total of 400,000m2 of new non-academic GFA within the Macquarie University campus, with a maximum of 10,800 parking spaces allowed across the campus. The GFA as part of the proposed RIDBC project is included in this total new non-academic GFA for this exercise, and therefore the traffic modelling has already made provision for development of this site. As noted above, some 362,398 m2 of the 400,000 m2 of commercial GFA remains available reinforcing that the pre-existing modelling outcomes remain current.

7.4.3 Roadworks

Based on the above no roadworks, intersection upgrades or the like are triggered by the proposed development. Notably, as set out in Section 7.2 of this EIS, the 'University Road Works' is also not triggered as the proposed development will not contribute to breaching the 7,000 vehicles per weekday threshold. The most recent traffic count carried out on Gymnasium Road, prior to the COVID-19 pandemic, indicated that daily traffic flows were in the order of 5,000 vehicles per day. As noted in the TIA, the RIDBC development may increase traffic flows on Gymnasium Road by approximately 285 vehicles per day and therefore would not trigger the upgrade of this intersection.

The proposed development does however result in the loss of 3-4 on-street parking spaces on Culloden Road resulting directly from the school porte cochere access / egress. There is ample kerb-side space on Culloden Road to replace these spaces, as noted by Council's traffic engineers in the meeting cited in Section 6.0 of this EIS.

This loss of on-street parking is not considered to be significant given:

- There are approximately 170 on-street parking spaces already available on Culloden Road. The loss of three to four spaces as a result of the proposal is not significant in this context;

- The impacted parking spaces do not directly service any residential or commercial premises and are typically used by university students or construction workers parking for long periods of time; and
- The parking spaces are not timed limited nor subject to any fees.

7.4.4 Travel Demand Management

Macquarie University has a University Travel Plan in place which outlines the strategies and actions to manage transport demand on the campus in order to reduce car based trips. This travel plan is in accordance with the requirements of the approved MQU Part 3A Concept Plan.

The purpose of the travel plan is to bring about better transport arrangements to manage travel demands on the campus, particularly promoting more sustainable modes of transport within the MQU whilst recognising the unique context of travel planning at universities. The travel plan aims to deliver the following benefits within the Campus:

- Reduced traffic congestion and greenhouse gas emissions;
- Increased campus amenity by reducing the need to supply additional car parking;
- Promotion a healthy lifestyle for all; and
- Contribution to social equity and reduce social exclusion.

Contained within the Travel Plan is a site audit of the existing transport networks on the campus, a summary of the issues and opportunities and travel plan strategies for each mode as well as for bicycle and car parking. An action plan with timeframes was prepared in accordance with the aims of these strategies.

Strictly, the University Travel Plan applies to academic development only, noting that separate Workplace Travel Plans are to be prepared for each commercial development and submitted for approval prior to the occupation of that commercial development.

As noted, RIDBC is not a freestanding commercial development and is predominantly for non-commercial uses. Accordingly, the RIDBC proposal best aligns with, and complements, the identified actions of the University Travel Plan by:

- Providing car parking well below the maximum on-site parking rate of 1 space / 80m2 GFA – at about 1 space per 180 m2 of GFA;
- Providing bicycle parking (15 spaces) and end of trip facilities to promote cycling as a form of transport to staff; and
- Integrating the design of the building and adjacent public domain with the broader MQU campus pedestrian network in order to provide for good quality pedestrian connections to nearby public transport.

Notwithstanding, a Green Travel Plan has been drafted as part of the TIA (see Section 6) to address discrete ways that the RIDBC workforce could address the above listed benefits and objectives of the University Travel Plan.

In addition to these design related initiatives, the following travel demand measures would be considered for implementation as part of any future building occupation in acknowledgement of the principles of a workplace / green travel plan:

- Measures that reduce the need to travel including:
    - Active promotion of the video-conferencing facilities as an alternative to face to face meetings
    - Formal approach to working from home and actively encouraging staff to consider this option
- Measures that reduce reliance on private vehicles including:
    - Making staff aware of public transport opportunities as part of their induction process

    - Providing staff with a tour of the building to include a visit to bicycle parking areas and shower and changing facilities
- Encouraging sustainable modes of travel by:
    - Participating in events like 'walk to work day' and 'Sydney Rides Challenge'
    - Providing pool bikes for staff to use during the day

Overall, based on the JMT Consulting TIA, the following conclusions can be made regarding the transport and traffic impacts of the development:

- A non-car mode share of 62% for staff within the RIDBC building has been adopted which is consistent with the targets set out in Modification 1 to the approved MQU Part 3A Concept Plan;
- Vehicle access to the site will be via the following access points:
    - For school and pre-school drop off and pick up, via a new porte-cochere accessed directly from Culloden Road;
    - For access to the site basement parking area and loading dock, via Gymnasium Road within MQU and West Precinct Road; and
    - The school porte-cochere has been specifically designed to accommodate the swept path of larger vehicles (up to the 6m Toyota Hiace Commuter) which participate in the NSW Government's Assisted School Travel Program.
- Given RIDBC caters for children with special needs, a high proportion of students are picked up in taxis and minivans containing up to 12 seats and are transported to the site. This has the effect of reducing the transport impacts of the proposal.
- Detailed traffic modelling carried out to support the approved MQU Part 3A Concept Plan considered future development on the RIDBC site – noting ample approved GFA remains developable on the campus and does not impact upon the thresholds set under the conditions of the approved MQU Part 3A Concept Plan.
- The development proposal is not forecast to increase traffic volumes along Gymnasium Road above 7,000 vehicles per day and therefore would not trigger the upgrade of the Waterloo Road / Gymnasium Road / Culloden Road intersection as required under the VPA between Council and MQU.
- A total of 58 parking spaces are proposed to be provided as part of the proposal which complies with the parking rates noted in the approved MQU Part 3A Concept Plan.
- To accommodate the driveways along Culloden Road providing access to the school porte-cochere, it is expected that between 3-4 existing on-street parking spaces on Culloden Road will need to be removed. An area of kerbside space on Culloden Road has been identified to entirely offset the loss of these parking spaces which will be subject to further Council review and approval.
- The site is highly accessible by public transport given its location within the MQU campus – including pedestrian connections to the nearby Macquarie University Metro station.

It is therefore concluded that the transport impacts arising from the proposal are minimal and can be managed by existing facilities within the site as well as the external transport network. The likely mitigation measures arising relate directly to work zones and loss of on-street car parking from the construction and operation of the development.

7.5 Ecologically Sustainable Development

As detailed in the ESD report prepared by JHA, the proposed development is not pursuing a formal Green Star rating through the certification procedures of the Green Building Council Australia (GBCA). However, the project team has benchmarked the development against the Green Star Design & As-Built v1.3 Rating System, with a goal of equivalency to a 4.5 star Green Star rating – that is 55 points. A minimum of 50 points for 4-star equivalency is required, noting the development achieves 58 points. The development is also seeking to exceed the required 4.5-star NABHERS rating.

See the ESD report and suite of ESD documentation at **Appendix Q**

Green Star Equivalency

To achieve the 58 points to attain the equivalent of a 4.5-star Green Star rating the score card includes:

- Management 13
- Indoor Environment Quality 10
- Energy 8
- Transport 5
- Water 6
- Materials 5
- Land Use & Ecology 1
- Emissions 4
- Innovation 6

A detailed Green Star checklist and spreadsheet is provided as part of JHA's assessment.

NABHERS

To achieve the proposed 5-star NABHERs rating, the development has incorporated the following features to achieve greater energy efficiency:

- Further 10% improvement on NCC 2019 R-value requirement for the floors, walls and roofs;
- Further 10% improvement on NCC 2019 thermal requirement for vertical glazing;
- Further 15% improvement on NCC 2019 thermal requirement for skylights
- Further 10% improvement on NCC 2019 energy efficiency requirements for lighting;
- A domestic hot water system that is powered by renewable energy or heat pump;
- An onsite renewable photovoltaics system (up to 99kW).

Based on the above inclusions, it is predicted the proposed RIDBC Centre of Excellence will be capable of achieving an equivalent NABERS rating of 5.0 star or higher, thereby satisfying the requirements of a 4.5 star rating under the approved MQU Part 3A Concept Plan.

CSIRO projected impacts of climate change

The CSIRO has predicted the impacts of climate change are likely to result in:

- hotter days and more frequent heatwave events;
- extended drought periods;
- more extreme rainfall events; and
- gustier wind conditions.

Based on these predictions, JHA has prepared a Climate Adaptation Plan to address these aspects of climate change, and as part of the ESD response to the overall development, ensure a resilient and durable development – see **Appendix Q**.

The impacts of climate change were assessed across two time scales (2030 & 2070) and two Representative Concentration Pathways (RCP4.5 & RCP 8.5). Climate Futures matrices were used to determine the key climate projections based on multiple climate variables for this risk assessment. The key climate projections were used to inform the climate risk assessment.

The results of the climate risk assessment identified two high risks items pre-adaptation. These high risks were mitigated to medium risks by the proposed adaptation actions. The responses to high risks are summarised as follows:

- Hotter and dryer conditions causing an increase in the frequency and/or severity of bushfire events directly damaging the building. This risk is mitigated by ensuring non-combustible building elements are used in the fabric of the building and by

implementing good management practice to remove potential fuel source around the building once the building is in operation; and
- Hotter and dryer conditions resulting in higher frequency and/or duration of heatwaves resulting in insufficient capacity of the HVAC system to maintain thermal comfort. This risk is mitigated by the incorporation of passive thermal principles such as appropriate external shades and thermal insulation and by upgrading the capacity of the HVAC system once the current system has reached the end of its service life.

In summary all risk items identified as 'high' or 'extreme' are addressed by specific design responses in addition to at least two risks items identified in the risk assessment being addressed by specific design responses in the development. This mirrors typical design features and ESD responses to meet the NABHERS rating and attain the 5-star Green Star equivalency.

Principles of ESD

The EP&A Regulation (clause 7(4) of Schedule 2) lists four principles of ESD required to be considered in assessing a project:
- The Precautionary Principle
- Intergenerational equity
- Conservation of biological biodiversity and ecological integrity
- Improved valuation and pricing of environmental resources

The **precautionary principle** is utilised when uncertainty exists about potential environmental impacts. It provides that if there are threats of serious or irreversible environmental damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. The precautionary principle requires careful consideration and evaluation of potential environmental impacts in order to avoid, wherever practicable, serious or irreversible damage to the environment.

This EIS has not identified any serious threat or irreversible damage to the environment and therefore the precautionary principle is not relevant in this case. Overall, the proposed development has been designed in accordance with a wide range of ESD goals that pertain to the design, construction and operational stages. The development's design and operation will ensure that the building minimises the impact on the environment in the areas of energy, water and materials. The design will incorporate with external high performance glazing and shading device, together with energy efficiency favoured passive design features to minimise severe or irreversible environmental damages.

Intergenerational equity is concerned with ensuring the health, diversity and productivity of the environment can be maintained or enhanced for the benefit of future generations.

The proposal satisfies this by mitigating any significant impact on the health, diversity and productivity of the environment and will provide a community benefit in the form of increased student, employee capacity, upgraded teaching, learning, and working facilities. The project will contribute to a lively community environment and add architectural interest to the surrounding area.

The principle of biological diversity upholds that the **conservation of biological diversity and ecological integrity** should be a fundamental consideration for any development. The proposal will have no detrimental effect upon this, given the generally urbanised nature of the site including its planted trees, which will be replaced and offset. As set out in the BDAR Waiver Request documentation at Appendix J, the site is generally devoid of biodiversity significance. Sufficient and appropriately located habitat corridors exist away from the site. Given the significant retention and protection of up to 166 trees around the site and removal of exotic plants and weeds from the site, enhanced opportunities for biological diversity and ecological integrity arise as far as they relate to this fragmented segment of modified environment.

The principles of **improved valuation and pricing of environmental resources** requires consideration of all environmental resources that may be affected by a proposal, including air, water, land and living things. The project team has benchmarked the project against the Green Star Design & As-Built v1.3 Rating System. The construction material will be selected based on the outcomes of relative cost-benefit analysis with decisions being made based on the whole of life costs rather than capital expenditure only. Certified recycled and reused materials, as well as the materials with low embodied energy, will be preferred over others.

Given the above, no further mitigation measures are considered necessary or warranted in the circumstances.

7.6 National Construction Code and Access

National Construction Code / BCA

The BCA Assessment Report at **Appendix T** prepared by BM&G has sought to confirm that the proposed development can readily achieve compliance with the BCA pursuant to clause 145 of the *Environmental Planning & Assessment Regulation 2000* and ensure the consent authority can be satisfied that subsequent compliance with the fire & life safety and health & amenity requirements of the BCA, will not necessarily give rise to design changes to the building which may necessitate the submission of an application under Section 4.55 of the *Environmental Planning and Assessment Act 1979*.

To that end, BM&G advises that the proposed development can readily achieve compliance with the relevant provisions of the BCA. Where compliance matters are proposed to comply with the Performance Requirements (rather than Deemed to Satisfy (DtS) Provisions), the development of a Performance Solution Report will be required prior to the issue of the Construction Certificate.

Access

Further, the Access Review at **Appendix U** prepared by Morris Goding Access Consulting has addressed the General Access Planning Considerations of the *Disability Discrimination Act 1992* (DDA), and the corresponding Australian Standards and BCA provisions. This has further included:

- Ingress and Egress
    - External Linkages
    - Entrances
    - Emergency Egress
- Paths of Travel
    - Circulation Areas
    - Passenger Lifts
    - Stairs
    - Ramps and Walkways
- Amenities and Facilities
    - Sanitary Facilities
    - Hearing Augmentation
    - Signage
    - Accessible Car Parking Spaces

Generally, the DA design is capable of achieving compliance and all details will be confirmed at subsequent design stages up to the issue of the construction certificate or occupation certificate, as relevant.

The project architect WMK, along with BM&G and Morris Goding Access Consulting will continue to work to resolve any outstanding matters. Accordingly, no further mitigation measures are considered necessary or warranted in the circumstances.

7.7 Contamination and Geotechnical Matters

7.7.1 Site Contamination

As noted, a Detailed Site Investigation (DSI) was prepared in September 2020 by JBS&G – see **Appendix H**. Assessment comprising the DSI was completed at the site to address the Department's issued SEARs and to provide preliminary waste classification consistent with EPA-made and endorsed guidelines including NEPC (2013) National Environmental Protection Measure (NEPM). The following findings were made in relation to the site by JBS&G:

- *A total of 27 soil sample locations were advanced across the site. With the exception of isolated reworked natural soil to 1.2 m below ground level (bgl) the site lithology generally consists of a 0.15 – 0.35 m sandy silt fill/topsoil underlain by silty clays, clays and clayey shales;*
- *Analysis of selected samples of surficial and sub-surface soils for a broad range of compounds of potential concern (COPCs) including heavy metals, polycyclic aromatic hydrocarbons (PAH), total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene and xylene (BTEX), organochloride pesticides (OCPs), polychlorinated biphenyls (PCBs) and asbestos. All COPC concentrations were below the NEPC (2013) health-based and ecological assessment criteria with the exception of one soil sample in which benzo(a)pyrene (a PAH compound) exceeded the adopted ecological criterion.*
- *Groundwater was assessed through consideration of soil data and obtaining data on potential for elevated COPC to leach from the soil profile. As soil data did not indicate any contamination at depth, and low COPC concentrations were reported in soil at all locations, data indicating low leaching potential provides further line of evidence that groundwater impacts are not likely at the site;*
- *The investigation did not identify unacceptable contamination or aesthetic risks for the intended land use;*
- *Preliminary waste classification results indicate that should fill or topsoil require off-site disposal it could be classified as GSW. Subject to confirmatory sampling prior to removal, fill/topsoil where concentrations were below CT1 criteria may be able to be recycled. Undisturbed natural soils are likely to be classifiable as virgin excavated natural material (VENM). Waste classification should be confirmed prior to disposal of any surplus soil during future earthworks; and*
- *It is considered that the site is suitable for the proposed development.*

As noted in Section 2.7 of this EIS and the findings of JBS&G, it is concluded the site is suitable for the proposed development and land use without further investigation or contamination management. The development satisfies SEPP 55.

Development of a construction environmental management plan (CEMP) which includes an unexpected finds protocol (UFP) and appropriate waste classification procedures will facilitate appropriate excavation and lawful disposal of fill/natural material during proposed basement excavation works.

7.7.2 Geotechnical matters

A Geotechnical Assessment has been prepared by JK Geotechnics and accompanies this EIS at **Appendix G**.

In general, the findings of the Geotechnical Assessment are typical for a site of this type and location and accordingly, no further mitigation measures are considered necessary or warranted in the circumstances in relation to geotechnical matters. See other consideration of issues below.

7.8 Earthworks / Civil Engineering / Water Management

A range of civil engineering works and earthworks is proposed at and around the site to address and manage primarily water quantity and quality at the site.

As set out, the proposed earthworks as the site principally evolve around establishing the site's / development's basement level to approximately RL 72 under the main RIDBC pavilion and the balance of the site associated with the footprint of development benched to the corresponding ground level RLs for each pavilion. Civil works to service the site as per plans at **Appendix I** are also proposed at various depths within, and around, the development site. The earthworks have been carefully considered to seek to retain as many existing trees as possible and limit impacts upon those trees proposed to be retained.

In addressing clause 6.2 of Ryde LEP earthworks (and the potential for run-off) will be managed via sediment and erosion control measures as set out in **Appendix I**. These include typical measures within and around the site, such as:

- Straw bale sediment filters;
- Sediment filter fences around the perimeter of the development site;
- Geotextile filter fabric dops and inlet sediment traps;
- Flood retention banking;
- Management of stockpiles on-site; and
- A temporary gabion sediment basin.

To manage the tracking of dirt onto roads, construction entries and exits with shaker grates are to be employed.

Internal stormwater management within the site has been assessed using the requirements of City of Ryde's DCP and with the use of both a DRAINS model and a MUSIC model, to address water quantity and water quality, respectively. The results of the modelling is included as part of **Appendix I**.

The DRAINS model considered the impacts of 5 year, 20 year, and 100 year ARI events and based on the data the stormwater management system was designed to control and manage stormwater on-site and limit off-site impacts. This includes the incorporation of a 480m3 OSD within the basement of the development to capture and limit water flows.

The MUSIC model has determined that the site's stormwater run-off can be treated to meet Council's DCP requirements. These are:

- Reduction of Total Suspended Solids (TSS) of 85% - Ryde DCP target 85%
- Reduction of Phosphorus (P) of 71.7% - Ryde DCP target 60%
- Reduction of Nitrogen (N) of 47.4% - Ryde DCP target 45%
- Reduction of Gross Pollutants of 100% - Ryde DCP target 90%

The above has broadly satisfied clause 6.4 of Ryde LEP as it relates to stormwater management.

Details of the proposed approach to civil engineering matters can be found at **Appendix I**.

7.9 Construction Air and Water Quality

The proposed works have the potential to cause localised and minor construction-related air and water run off impacts. Standard mitigation measures are proposed to suppress dust and other air quality issues, whilst a sediment and erosion control and other site-based water detention mechanisms form part of the stormwater management plan at **Appendix I**.

Details relating to airborne dust and sediment control, are provided in the preliminary Construction Management Plan prepared by mProjects, which accompanies this EIS at **Appendix R**.

As articulated by the preliminary Construction Management Plan, dust control will be implemented in areas of all active excavation and construction. Dust control will also be implemented within the construction zone as determined by the appointed contractor, and as required for the health and safety of employees. Dust monitoring devices will be installed on the site boundaries in order to ensure dust levels are minimised where appropriate. Water sprinklers & water carts will be used during the earthworks phases should dust emanate from un-turfed and/or dried and exposed excavated soils, including stock piles.

All works will be undertaken in accordance with NSW *Protection of the Environment Operations Act 1997*.

Dust management will be most critical during the earthworks phase and the range of measures to address this include:

- Construction methods will be employed as required that will keep air pollution to a minimum, to ensure that airborne pollutants from activities onsite do not cause undue disruption or inconvenience;
- Where appropriate and/or required by the client, removal of mud from the wheels and bodies of haulage equipment before they enter public roads or other sealed pavements by means of facilities such as truck wash downs and wheel washes;
- Dust generating activities which cannot be adequately controlled by water or other means will be ceased;
- Unsealed construction access routes will be sealed through use of coarse aggregates;
- Progressively rehabilitate and revegetate areas of disturbance including, where necessary undertaking short-term stabilisation of temporary stockpiles and disturbed areas;
- Limiting areas of vegetation and soil disturbance through delineating work areas to minimise the potential for erosion;
- Delivery of raw materials (gravel and sand) in load covered trucks;
- Trucks not to be overfilled so that excavated material drops onto the roadways. All loads carried on public roads or in areas that could affect private property, to be covered;
- Any excessive materials dropped onto externally sealed roads to be cleaned up as soon as possible;
- Truck tailgates to be securely closed before leaving the site;
- Long-term stockpiles to be stabilised by establishing a short lived, fast growing temporary cover crop; and
- The area of construction disturbance to be minimised wherever possible.

7.10 Biodiversity and Arboricultural Matters

The advice of appropriately qualified biodiversity and arboricultural consultants has been sought with respect to ecological and tree protection measures.

Biodiversity

As noted earlier, the need for a BDAR has been jointly waived by the Planning Agency Head on 27 April 2020 and the Environment Agency Head on 16 April 2020 – see correspondence at **Appendix J**. The agencies each confirm that the development *is not likely to have any significant impact on biodiversity values.* Accordingly, that there is no need for the SSD application to include a BDAR.

Further, to address the SEARs (SEAR 20) more directly, there are no rivers, streams, wetlands, estuaries in vicinity of the site or the MQU campus that are directly affected by the construction

works on the site. As noted by both the DSI and the Geotechnical Assessment, groundwater is unlikely to be found at the site given the soil characteristics and soil profile. Accordingly, no groundwater dependent ecosystems are likely to be found in proximity of the development site or be affected by the construction works.

Arboricultural

An Arboricultural Impact Assessment has been prepared by Australis Tree Management and accompanies this EIS at **Appendix K**. Australis Tree Management provides an assessment of the health of the trees (amongst other things) and recommends trees for removal, transplanting / replanting or protection. A Tree Protection Plan for the construction phase is also found at **Appendix K**.

A total of 287 trees were assessed on the site.

- One-hundred and sixty-six (166) trees are located on the subject site and proposed for retention; and
- One-hundred and twenty-one (121) trees on site are proposed for removal or relocation as they are located within or close to the proposed development envelope.

See **Figures 37** and **54** with respect to the location of proposed tree removal (and retention).

Two-hundred and sixty-seven (267) of the trees are protected by Council's tree protection policy, whilst twenty (20) trees are exempt from Council protection. Fifteen (15) trees on site are dead, however prior to their removal, the dead trees should be assessed by an ecologist to advise on their habitat capabilities and management.

The trees recommended for removal have major encroachments in accordance with AS4970-2009, i.e. encroachments greater than 10% of the Tree Protection Zone (TPZ) or inside the Structural Root Zone (SRZ) where their retention is considered to be not viable.

These trees are likely to suffer greatly by the proposed works and may to become unstable as well as significantly reducing their life expectancies. A number of trees proposed for retention have encroachments of less than 10% that are outside the structural root zone (SRZ). These are considered to be 'Minor' in accordance with AS4970-2009 and generally do not require detailed root investigations.

During earthworks and construction tree protection measures consistent with Australian Standard AS 4970-2009 'Protection of trees on development sites' are identified in the Tree Protection Plan. This effectively seeks to segregate the three areas of trees to be retained via Tree Protection Zone fencing and management of those trees during works. See **Figure 55**.

Additional planting is further proposed with 92 new trees within the development site, including 77 native trees and 15 exotic trees. Further, applying MQU's general offset strategy of replanting at a rate of better than 1:1, at least an additional 30 trees will need to be planted elsewhere within the campus.

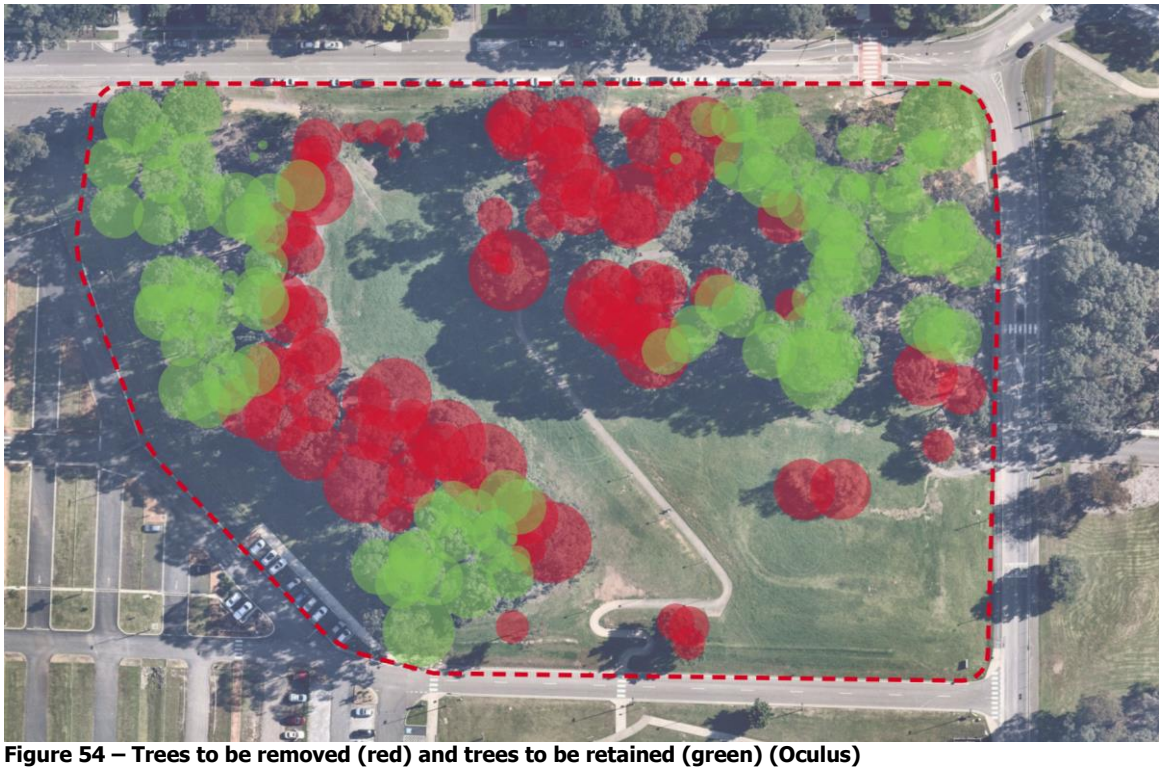

Figure 54 – Trees to be removed (red) and trees to be retained (green) (Oculus)

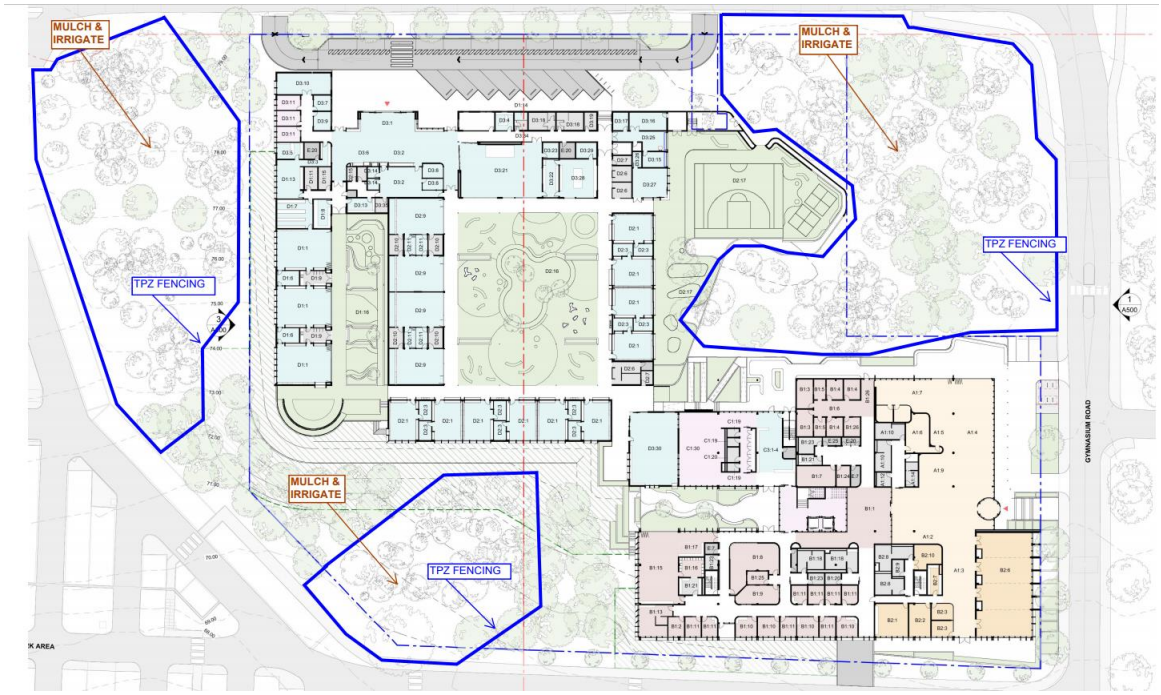

Figure 55 – Tree Protection Plan (Australis Tree Management)

7.11 Bushfire

As noted, the site is identified as bushfire affected on the most recent available Council-based bushfire map – see **Figure 21** as well as **Figure 56** over. This is solely by virtue of the site presently sitting within part of Lot 191 of DP 1157041 which is in part affected by Vegetation Category 2 and 100m Buffer bushfire risk. The development site is some 220m from the nearest point of the bushfire threat within the campus and 170m from a bushfire threat to the rear of Marsfield Park to the west over Culloden Road.

The proposed subdivision of the site would result in the site not being bushfire affected or on bushfire prone land. Notwithstanding, the proposed development is considered to be a Special Fire Protection Purpose (SFPP) development as defined under section 100B of the *Rural Fires Act 1997*. Accordingly, a Bushfire Safety Authority from the NSW Rural Fire Service (RFS) is required for the development.

The Bushfire Hazard Assessment at **Appendix L** indicates that the development site is categorised as managed lands and there is no mapped bushfire prone vegetation within a minimum radius of 150m of the proposed development in all directions. Based on the above, it is deemed that the proposed development is assessed as BAL-LOW as specified in AS-3959.

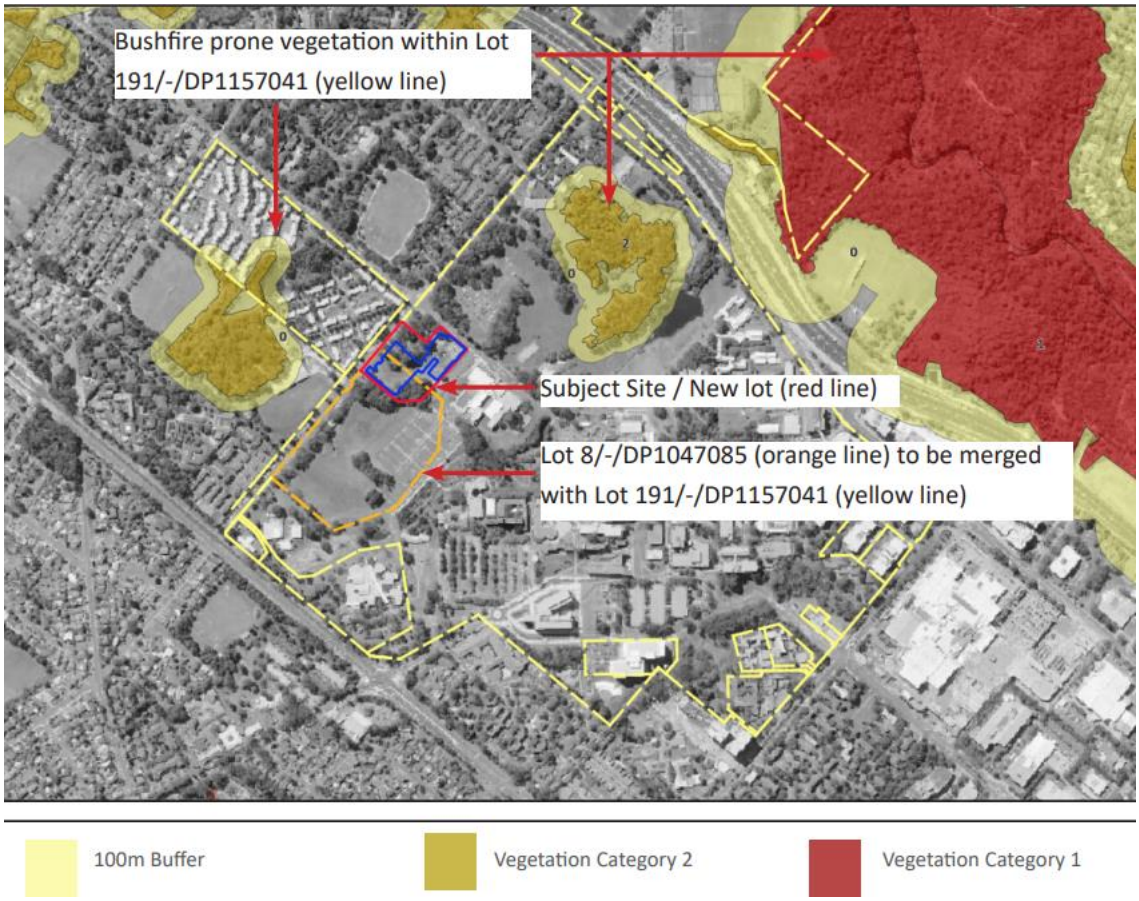

Figure 56 – Bushfire Prone Land Map (Bushfire Planning & Design)

Based on a review of the likely bushfire threat, Bushfire Planning & Design has concluded that no Asset Protection Zone (APZ) is warranted within, or adjacent to, the development as there is no unmanaged grassland within 50m and no other bushfire prone vegetation within 100m of the development. There is insufficient threat to warrant any specific APZ or level of construction with regards to the construction of a building in a bushfire prone area. Any remaining clusters of trees within the subject site and surrounding areas are considered to be Low Threat Vegetation as defined in s.A1.10 of Planning for Bushfire Protection (2019). Even with replacement planting and landscaping, it is advised that radiant heat loads less than 10 kW/m2 have been demonstrated. The development area is currently managed to minimal fuel conditions such that the remaining bushfire threat is negligible. A managed lands approach is expected to continue maintaining this same conclusion.

The proposed development is otherwise also able to satisfy the BCA and the objectives and performance requirements relating to Access Requirements; Services Requirements – Water;

Services Requirements – Electricity and Gas; and Emergency Management Planning requirements of Planning for Bushfire Protection 2019.

As the subject site is not significantly bushfire affected, there is insufficient bushfire threat to warrant a specific bushfire emergency management and evacuation plan. Should the NSW Rural Fire Service request a specific bushfire emergency management plan, this can be prepared integral to the overall emergency management procedures for the site that may address other emergency management threats.

Mitigation measures to ensure the managed lands scenario is maintained, as well as ensuring Services Requirements are met, are applicable.

7.12 Wind Impacts

Wind impacts arising from the development are likely to negligible upon users of the proposed development, pedestrians, and adjacent neighbours. The development itself, being up to 2-3 storeys in height, is not of a type or scale to generate downdraft or downwash winds or to funnel winds to cause pedestrian discomfort, an unsafe wind environment, or amplify any pre-existing wind environment.

The typical trigger for the modelling of wind impacts is development of a particular height, such as 45m (City of Sydney) or 32m (Parramatta City Council). Alternatively, for a building on sloping land (such as this), the trigger would be 20m.

The development, and surrounding, environment is not one of an exceptionally existing or future high pedestrian traffic environment for which a specific level of comfort will be required to be attained. No further mitigation measures are warranted.

7.13 Noise and Vibration Impacts

White Noise Acoustics has carried out a Noise Impact Assessment of the construction noise and vibration impacts, and operational noise impacts, of the proposed development – see **Appendix V**. Noise and vibration has been assessed with reference to relevant EPA and DPIE policies and guidelines for both operational and construction noise.

Unattended noise logging, as well as an attended noise level survey, of the site's existing background noise environment has been undertaken to assess the impacts of construction and operational noise on the two closest adjoining receivers:

- Macquarie University Village (residential receiver); and
- Macquarie University Sports and Aquatic Centre (commercial receiver).

The results of these surveys / logging are found at Section 4.1 and Tables 1 and 2 of the Noise Impact Assessment. The Background Noise Level and Representable Background Noise Level during the day is generally between 43 dBA ($L_{90,\ 15\ min}$) and 46 dBA ($L_{90,\ 15\ min}$) and is dominated by existing vehicle movements within and past the university. The Representable Background Noise Level during the evening is 37 dBA ($L_{90,\ 15\ min}$), whilst the Representable Background Noise Level during the night is 33 dBA ($L_{90,\ 15\ min}$).

7.13.1 Construction Noise

As noted earlier, construction hours proposed are:

- Weekdays: 7am – 6pm
- Saturdays: 8am - 4pm
- Sundays and public holidays: No work

This is consistent with all recent SSD DA approvals at MQU.

The likely demolition and construction equipment to be used includes:

Demolition	• Jack hammer mounted on skid steer • Hydraulic Hammering • Hand held jack hammer • Concrete saw • Skid steer • Power hand tools	Aggregate Sound Power Level per task (dBA L_{10}) **124**
Construction	• Piling • Welder • Saw cutter • Dump truck • Concrete saw • Power hand tools • Cranes	Aggregate Sound Power Level per task (dBA L_{10}) **120**

The relevant noise management levels applicable to demolition and construction works for residential receivers is:

- Representable Background Noise Level + 10 dBA for EPA recommended standard hours of works;
- Highly Noise Affected 75 dBA; and
- Representable Background Noise Level +5 dBA for non- standard hours, eg Saturdays 1pm-4pm.

The relevant noise management levels applicable to demolition and construction works for office-related receivers is:

- LAeq (15 min) 70 dBA, when in use, subject to management and regular updates on activities.

Based on the preceding information, the Site Construction Noise Management Levels are as follows based on Table 11 of the Noise Impact Assessment.

Table 11 – Site Construction Noise Management Levels

Noise Source	Time Period	Receiver Type	Construction Noise Management Level	'High Noise Affected' Level
Construction Noise	Recommended standard hours: Monday to Friday 7 am to 6 pm Saturday 8 am to 1 pm No work on Sundays or public holidays	Residential	53 dB(A) LAeq (15min)	75 dB(A) LAeq (15min)
		Commercial	-	70 dB(A) LAeq (15min)
	When in Use	Schools, internally	45 dB(A) Leq (15 min)	

Note 1: Construction noise management levels based on the Interim Construction Noise Guideline

With reference to the above table and the earlier stated Aggregate Sound Power Levels of the likely demolition and construction equipment, the Noise Impact Assessment has determined that the Calculated Construction Noise Level impacting Macquarie University Village (as the nearest sensitive receiver will be up to 75 dBA for demolition and 73 dBA for externally used construction plant and equipment. Based on the qualitative assessment of construction noise by White Noise Acoustics, suitable management controls and community notifications are required to be conducted during works.

7.13.2 Construction Vibration

An assessment of the potential for vibration generated during construction activities on the project (including excavation and construction) has been undertaken.

As no buildings are required to be demolished, and given the distance of neighbouring structures to the development site, (which includes Macquarie University Village and Macquarie

University Sports and Aquatic Centre), vibration levels generated from the proposed excavation and construction on the site are expected to comply with all relevant vibration criteria as set out in the Noise Impact Assessment.

In the event excavation requires the removal of rock, the excavation methodology will need to ensure a saw cut is applied to the rock that is within 25m of any adjacent buildings prior to use of any excavation or ripping. As noted in the Geotechnical Assessment the likely subsurface conditions with largely involve shale rather than any sandstone, so likely excavation methods could avoid saw cutting or drilling, and co-related vibration impacts.

7.13.3 Operational Noise

Operational noise from the development includes:

- Noise from outdoor play areas
- School and outdoor area bells and PA systems
- Use of the school porte cochere
- Noise from internal areas
- Mechanical plant and equipment

These are addressed in turn below. The location and distance of Macquarie University Village from the development and its operational noise sources is shown in **Figure 57**. These are variously shielded / screened distances of 68m to internal courtyard playspaces; 57m to external playspaces; 35m to the porte cochere; and at least 50m + to the internal areas and plant.

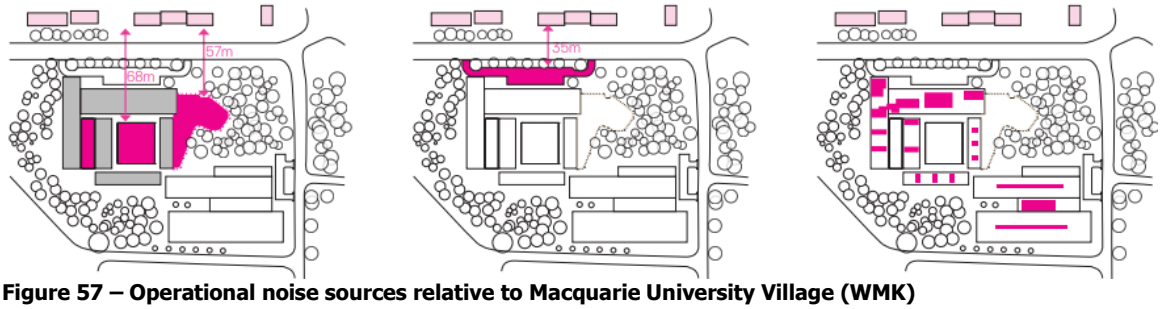

Figure 57 – Operational noise sources relative to Macquarie University Village (WMK)

Noise from outdoor play areas

White Noise Acoustics advises that schools or learning centres do not have any relevant Environmental Protection Authority (EPA) noise criteria. There are however a number of relevant authority guidelines which provide suitable acoustic criteria for noise emissions from a school site, including the following:

- NSW Environmental Protection Authority, Noise Policy for Industry (NPI) (formally the Industrial Noise Policy) – Suitable for the assessment of mechanical services noise emissions from the site; and
- Association of Australian Acoustical Consultants (AAAC) guideline for Child Care Centre Acoustic Assessment, October 2013 – including recommended criteria for noise emissions generated from use of Outdoor Play Areas.

Based on the above, White Noise Acoustics has determined the development's external noise level criteria as follows for each receiver under the NPI based on use or the time of day – see also Table 5 of the Noise Impact Assessment. A simple summary is set out in the table over.

Location	Time of Day	Project Amenity Noise Level	Intrusive Criterion for new sources
Residential Receiver Macquarie University Village	Day	-	48 dBA (L_{Aeq})
	Evening	-	42 dBA (L_{Aeq})
	Night	38 dBA (L_{Aeq})	-
Commercial Receiver Macquarie University Sports and Aquatic Centre	When in use	65 dBA (L_{Aeq})	-

Alternatively, using the AAAC guideline the following results, noting noise from the use of the external play areas on the site cannot be assessed using the standard EPA or council guidelines. Noise generated from the use of outdoor play areas does not include noise that is similar to typical industrial noise sources such as mechanical equipment, heavy vehicles, manufacturing or the like. Noise associated from the use of outdoor play areas associated with schools is generally assessed to a less stringent requirement than the noise emission criteria detailed within the EPA NPI for a number of reasons including the following:

- Noise generated from the use of outdoor play areas from schools is identified as being for the benefit of the general community.
- Noise generated from outdoor play areas will be generated during limited periods of the day, including lunch breaks and after school. Organised play and use of the school will generally be limited to Monday to Friday.
- Noise generated from the use of outdoor play areas does not result in noise with the potential to impact on the reasonable amenity of residential receivers compared to industrial or commercial noise emissions. Noise from the use of students during normal operating hours will include supervision by teaching staff.
- Methods of noise control from outdoor play areas can be limited. The treatments required to reduce noise from outdoor play areas to within EPA NPI noise criteria would result in significant impact as a result of acoustic screenings, buildings or the like.

Location	Time of Day	Background Noise Level	Noise Emission Goals for Outdoor Play Areas
Residential Receiver Macquarie University Village	Day – 7am – 6pm	43 dBA ($L_{90,\ 15\ min}$)	53 dBA (L_{AeqT})
Commercial Receiver Macquarie University Sports and Aquatic Centre	Day – 7am – 6pm	43 dBA ($L_{90,\ 15\ min}$)	65 dBA (L_{AeqT})

The location of the ground level internal courtyard areas for outdoor play are located such that the surrounding building structure will act as an acoustic screen to the residential receivers located within the Macquarie University Village over Culloden Road. The north-eastern outdoor play space is less shielded and generally addresses the vegetated areas facing Culloden Road from within the site.

The areas will be variously used by up to 200 children over the course of the day, but principally in short durations coinciding with recess and lunch periods.

Active play will likely generate noise levels of 86 dB(A) L_{eq}. Based on a range of assumptions, White Noise Acoustics has undertaken an assessment of noise emission impacts to the surrounding residential receivers compared to the project noise level criteria for outdoor play of background + 10 dBA. The results are set out in Table 7 of the Noise Impact Assessment, as replicated below.

Table 7 – Result of the Acoustic Assessment of Outdoor Play

Location	Time of Day	Calculated Noise Emissions from Play Aras $L_{Aeq\ 15min}$, dB(A)			Cumulative Noise Level $L_{Aeq\ 15min}$, dB(A)	Noise Emission Goals for Outdoor Play Aras $L_{Aeq\ 15min}$, dB(A)
		Courtyard 1	Courtyard 2	Outdoor area		
Residential Receiver – Macquarie University Village	Day time play periods	27	30	41	41.4	53
Commercial Receiver – Sports and Aquatic Centre	Day time play periods	23	26	38	38.4	65

White Noise Acoustics concludes, based on the results of the noise impact assessment from the external play areas compliance with the relevant noise emissions criteria will be achieved without additional acoustic mitigations or controls. As seen, each of the Cumulative Noise Levels for concurrent play in all three outdoor play areas sits below the Noise Emission Goals for Outdoor Play Areas.

School and outdoor area bells and PA systems

To further mitigate noise from the use of the proposed outdoor play areas of the site the following acoustic treatments and controls are possible:

- All audible school bells and speakers are to be located such that they face away from the residential receivers and set to an appropriate noise level of 70-75dB(A) @ 3m; and
- The use of directional speakers should be utilised on the external areas of the site for any public address systems.

Use of the school porte cochere

Based on a day time noise assessment criteria of 55 dBA (L_{Aeq} (1 hour) – external) related to noise from local roads upon existing residences, the likely noise generation estimated is up to 51 dBA (L_{Aeq} (1 hour) – external), and therefore compliant, based on the level of usage of the porte cochere at peak times. The porte cochere's operation will have no adverse noise impacts upon the nearest residential receiver, being the Macquarie University Village dwellings that face Culloden Road.

Noise from internal areas

All internal areas of the RIDBC Centre of Excellence will be located within the building envelope which includes a closable external façade with a minimum acoustic performance of Rw 30. This includes 6.38mm laminated glazing (or greater) and solid light weight or concrete building elements.

The potentially high noise generating sources within the building, including the areas with teaching and presentations, are located without external opening to the external façades to the north west of the building which face towards the residential receivers within the Macquarie University Village.

Providing the external façade openings of the building are closed during periods when high noise activities are being generated, such as gatherings in the public entry foyer area, the noise

levels at all surrounding receivers, including the residences within the Macquarie University Village, will comply with the noise emission criteria detailed in Section 6.1 of the Noise Impact Assessment and will be acoustically acceptable.

Mechanical plant and equipment

The project is still in its design phase and selection of final plant and equipment will occur during the detailed design phase post-approval. Notwithstanding, assumptions have been made regarding the type of plant and equipment and the typical associated sound power levels.

- Ventilation fans – 80dB(A) (Lw)
- Toilet exhaust fans – 45dBA (Lw)
- Air Conditioning Condensers – 80dBA (Lw)
- Air cooled chillers – 95 dB(A) (Lw)

Acoustic treatments able to be employed to mitigate noise impacts from plant and equipment include:

- Cooling equipment – acoustic silencers and or louvres may be required to the intake and exhaust of cooling equipment. Equipment will be installed with Variable Speed Devices (VSD) to reduce capacity and noise levels as required.
- Supply fans – supply fans on the site will include acoustic treatments including internally lined ductwork and/or silencers as required to ensure noise emission criteria is achieved.
- Exhaust fans – exhaust fans on the site will include acoustic treatments including internally lined ductwork and/or silencers as required to ensure noise emission criteria is achieved.
- Emergency Equipment – mechanical services equipment associated with the site will be acoustically treated using lined ductwork and/or silencers such that the requirements of AS1668 are complained with.
- Pumps, heaters, boilers and the like – other general equipment such as pumps, heaters, boilers and the like will be housed within the plantroom or other internal areas. Treatment to the building façade including linings and/or treatment to openings in the building such as acoustic louvres or lined ducting will be included to ensure noise levels comply with the projects noise emission criteria.

Details of the required mechanical services equipment and acoustic treatments required to ensure that the relevant noise level criteria is achieved will be provided as part of the Construction Certificate submission of the project.

7.13.4 Noise and Vibration Mitigation Strategies and monitoring

Based on the preceding information (and that within the Noise Impact Assessment) noise mitigation strategies or management controls will still be relevant to address any noise impacts, particularly during construction. The following management controls are recommended by White Noise Acoustics to mitigate construction noise levels on the site:

- All plant and equipment are to be maintained such that they are in good working order;
- A register of complaints is to be recorded in the event of complaints being received, including location, time of complaint, nature of the complaint and actions resulting from the complaint;
- If required a noise level measurement of the offending plant item generating complaints is to be conducted and noise mitigations undertaken to reduce noise levels to within Noise Management levels in the event magnitude of noise levels is found to be above suitable levels;
- The use of percussive and concrete sawing should be undertaken behind a closed façade when possible;

- The use of high noise generating equipment including hydraulic hammers, rock cutters or the like should not be undertaken prior to 8am Monday to Friday or 8.30am Saturdays;
- The loading of trucks should be conducted such that there is not a requirement to stack truck on the roadways adjacent to the residence within the Macquarie University Village; and
- Where possible to use of squawkers or the like should be used in place of reversing alarms.

In addition to the recommended mitigations above, details of the proposed construction (including demolition) works to be conducted on the site, including type of activities to be conducted as well as the expected duration of activities, should be provided to the neighbouring receivers.

As part of the management of noise from the proposed excavation and construction activities to be undertaken on the site the following noise and vibration measurements are recommended to be undertaken:

Noise – Attended noise level measurements of typical excavation and construction activities should be undertaken at site. Attended construction noise surveys of the site and surrounding impacts on neighbours should be undertaken during the following as a minimum:

- Commencement of any rock breaking or sawing on the site; and
- In response to any ongoing complaints received from neighbours.

Vibration – Based on the proximity of the surrounding receivers to the works attended vibration measurements of typical excavation and construction activities should be undertaken at site. Attended construction vibration measurements at representative locations to the neighbouring building structures should be undertaken at the following times as a minimum:

- Commencement of any rock breaking or sawing on the site required to be conducted within rock during the excavation stage of the project; and
- In response to any ongoing complaints received from neighbours.

Summary

Based on the preceding information and the assessment within the Noise Impact Assessment, it is concluded that noise levels associated with the future operation of the development, including the proposed outdoor play areas, future drop off area addressing Culloden Road, mechanical plant and equipment, and internal areas of the development will be acceptable.

Subject to the treatments and controls recommended in the assessment are included in the design and operation of the RIDBC Centre of Excellence, noise emissions from the site will be acoustically acceptable at all surrounding receivers, including the residential use of the Macquarie University Village. Additionally, noise and vibration generated during the proposed construction period of the project (including excavation activities) can be suitably managed in accordance with the EPA's Interim Construction Noise Guideline. This includes the preparation of a detailed construction noise and vibration management plan once the contractor has been appointed.

Mitigation measures with respect to construction noise and vibration, and operational noise as set out above would be employed.

The White Noise Acoustics report can be found at **Appendix V**.

7.14 Aboriginal Cultural Heritage

A campus-wide Aboriginal Cultural Heritage Assessment Report (ACHAR) has been prepared by Extent. It broadly concludes the development site has moderate archaeological potential only and is not identified as one of the areas of high archaeological potential.

With respect to this site, a site- and development-specific ACHAR has been prepared by Extent. Archaeological test excavation of the RIDBC site was undertaken between 22 and 25 September 2020. The archaeological excavation program consisted of the excavation of 43 50x50cm test pits across the proposed impact footprint, in a systematic grid with 20m spacing (amounting to a total excavated area of 10.75m2).

Post excavation analysis and reporting of the results of the archaeological test excavation indicates that no Aboriginal cultural material was recovered, and despite the presence of natural (albeit shallow) silty clay topsoils on an elevated ridgeline spur, the study area is unlikely to retain evidence of Aboriginal occupation in the form of Aboriginal stone objects.

The cultural significance of the Lane Cove River, 1.2km to the northeast of the study area, and the importance of early Aboriginal and settler interaction following colonisation of the Field of Mars Creek Common (in which the study area broadly sits) was noted by RAPs during consultation. No intangible cultural values specific to the study area were identified.

Based on these findings, Extent concludes that the proposed development is considered to have minimal-nil impact upon Aboriginal heritage. In the case of tangible cultural material, the investigations recovered none. Consultation with RAPs to date have not identified intangible cultural values specific to the study area. As such, it is considered that the proposed development is unlikely to have an impact upon tangible and intangible cultural material. No further assessment or investigation is required prior to development, and works may proceed with caution, and subject to the impact mitigation measures set out in the Extent ACHAR. One RAP responded in the latest consultation period advising of its support of the findings of the ACHAR.

The ACHAR by Extent is attached to this EIS at **Appendix M**.

7.15 Lighting

An external lighting strategy has been prepared to address the lighting types within the development site and its integration with the built and landscaped concepts. This has also principally addressed CPTED matters as well as possible light spill impacts upon adjacent and sensitive uses, such as Macquarie University Observatory. The impacts of light spill have been considered with reference to the DPIE Dark Sky Planning Guideline – see **Appendix O**.

The general approach to external lighting will be to provide a safe environment that compliments the building, while ensuring the new development has minimum obtrusive effect to the neighbouring properties. Generally, the external lighting will be timeclock controlled and designed to the minimum requirement for safety. Accordingly, the school entrance and consultancy building portes cochere are proposed to be dimmable. Under normal operation, the lighting levels are to be dimmed to satisfy the minimum security requirement. During events where the development maybe occupied for extended hours, the entrance lighting should have the capability to increase in intensity to provide a more vibrant and welcoming environment. This would however be the exception rather than the rule. Where possible, accent lighting would be incorporated as part of the circulating lighting strategy, providing both aesthetically and functionally to the space.

In terms of light spill impacts, a light spill assessment to satisfy Australian Standard AS 4282 will be completed as part of the detailed design. A preliminary investigation by LCI into light spill has however identified the following matters:

Effects on residential properties
The closest residential properties are identified as the Macquarie University Village opposite the site on Culloden Road, noting of the overall development only a handful of student residences face the development given the orientation of the majority of this student housing precinct away from Culloden Road.

Macquarie University Observatory
With MQU Observatory within close proximity to the site, obtrusive lighting to the night sky will need to be mitigated. The lighting design will use the Dark Sky Planning Guideline as reference and employ the following lighting strategy as outlined in the Guideline:

- Uplighting is to be avoided;
- Glare shield/snoot are to be incorporated to the luminaire design, where required;
- Warm colour lamp colour temperature to be used in the outdoor environment; and
- Exterior lighting will be controlled and automatically turned off afterhours.

Other properties
Other than the Macquarie University Village, the only other building within close proximity to the RIDBC site is the Macquarie University Sport and Aquatic Centre, which operates between 6am to 8pm daily and is more than 45m away and will be impacted in only a limited manner by any obtrusive lighting effects, noting this building uses external lighting itself.

Effects on transport system users
Selection and placement of luminaires will be designed to minimise the impact on traffic travelling along Culloden Road.

Mitigation measures will be employed with respect to light spill impacts and general accordance with the Dark Sky Planning Guideline, to protect where possible and reasonable, the operational capacity of the Macquarie University Observatory.

7.16 Social and Economic Impacts

The positive social and economic impacts of the proposed development are deemed to be significant. RIDBC's 160-year service to support people who are deaf or hard of hearing and people who are blind or vision impaired through high-quality vision and hearing services continues to have profound effects upon the community which it serves.

As Australia's largest and longest-serving provider in this specialised field of education, allied health, therapy, research and clinical services, the proposed development presents a major opportunity to modernise and refocus these essential services.

The positive education, health and wider social benefits which will arise from investment in new school, research, and clinical infrastructure are self-evident and palpable.

From a physical infrastructure perspective, the new pre-school, school, education and its community spaces will become an immediate RIDBC-community asset.

Additionally, the construction of the Centre of Excellence provides:

- Economic stimulation to the labour market and investment during the construction phase of the project. The business case process involving cost benefit analysis, economic appraisal, qualitative and quantitative measures leading to this DA confirm the project is cost effective and the best value for money for RIDBC.

- Environmental design measures in building form, materials, thermal comfort, energy efficiency, water conservation, landscaping, management of environmental hazards, climate-change resilience, waste management and construction standards.

- Social benefits and prosperity from investment in social infrastructure and facilities which meet the educational and employment objectives and goals for the region. To that end, key outcomes include:
    - New educational facilities that make a major contribution to meeting demand for RIDBC's specialised teaching and learning facilities;
    - Creation of a new and cohesive new RIDBC campus;
    - Safe and secure school environment through the principles of crime prevention through environmental design; and
    - New facilities for staff, academics, researchers, educators, and students and parents.

- Sustainability Benefits
    - Use of an existing site that has been identified for development from the establishment of MQU in the mid-1960s through to the 2009 approved MQU Part 3A Concept Plan;
    - Passive solar and shading design measures;
    - Use of sustainable (non-rainforest) recycled, plantation or composite timbers;
    - Use of materials with good thermal insulation performance;
    - Energy efficient fittings and fixtures such as lighting, and any heating/cooling systems; and
    - Environmental performance of new elements to be 'Best Industry Practice' and in compliance with section I and J of the BCA as required.

The consequences of not proceeding with the development of the new RIDBC Centre of Excellence at this site can only be identified as negative.

7.17 Suitability of the Site

The site's suitability for the proposed development is demonstrated through:

- the permissibility of the development in accordance with both Council's LEP and the Education SEPP and the proposal's consistency with the relevant zone objectives and the relevant aspects of the approved MQU Part 3A Concept Plan and its associated documents;
- the proposal's general consistency with key strategic planning policies relevant to Metropolitan Sydney, the North District region, and this type of development;
- the site's location as part of the ongoing and progressive redevelopment of the MQU campus;
- the site's general lack of environmental issues including contamination, natural hazards, and heritage;
- the site's enhanced connectivity to and for RIDBC's partners, clientele, and stakeholders; and
- the proposal's relative benign nature in terms of environmental impacts upon other uses within the locality and the site's immediate vicinity in terms of streetscape, operational traffic and noise generation, and environmental impacts.

7.18 The Public Interest

The proposal involves the realisation of the planned-for consolidation, refocus and modernisation of RIDBC's services in a new Centre of Excellence. The development will deliver new and contemporary education, research, and clinical facilities to RIDBC's services model and co-locate these within the MQU campus where existing relationships with MQU, the Australian Hearing Hub, and Cochlear exist.

The proposed development ensures RIDBC is able to continue its services to the highest contemporary levels and meet the specialised needs of its clientele and the community.

The proposal suitably addresses or mitigates impacts upon the environment and the amenity of its neighbours. It provides for upgrades to services, infrastructure and connectivity as well as built form appropriate to its use and location. It is clear that to forego the development of the site as proposed would not be in the public interest.

8.0 ENVIRONMENTAL RISK ASSESSMENT

The Environmental Risk Assessment (ERA) establishes residual risks by reviewing the significance of environmental impacts and the ability to manage those impacts. The ERA for the RIDBC Centre for Excellence development site has been adapted from Australian Standard AS4369.1999 Risk Management and Environmental Risk Tools.

In accordance with the SEARs, the ERA addresses the following significant risk issues:

- the adequacy of baseline data;
- consideration of potential cumulative impacts due other developments in the vicinity (completed, underway or proposed);
- measures to avoid, minimise, and if necessary, offset the predicted impacts, including detailed contingency plans for managing any significant risk to the environment; and
- a health impact assessment of local and regional impacts associated with the development, including those health risks associated with relevant key issues.

The matrix below indicates the likely significance of environmental impacts from both construction and operation of the development and assigns a value between 2 and 10 based on the likelihood of an impact occurring and the consequences of that impact. For example, an Almost Certain and Catastrophic Risk is rated as having value of 10; a Possible Catastrophic Risk is rated as having a value of 8 as is a Likely Major event. A Rare Insignificant risk is rated as having a value of 2.

Based on the rating of the risk, appropriate risk control actions can then be applied.

The sum of the values assigned provides an indicative rating of potential residual impacts after the mitigation measures are implemented.

Consequence / Likelihood	Insignificant = 1	Minor = 2	Moderate = 3	Major = 4	Catastrophic = 5
Almost Certain = 5	Significant	Significant	High	High	High
Likely = 4	Medium	Significant	Significant	High	High
Possible = 3	Medium	Medium	Significant	Significant	High
Unlikely = 2	Low	Medium	Medium	Significant	Significant
Rare = 1	Low	Low	Medium	Medium	Significant

Likelihood		**Consequence**	
Almost Certain	Is expected to occur in most circumstances	Catastrophic	Severe adverse impact - (Death)
Likely	Will probably occur in most circumstances	Major	Major adverse impact - (Extensive Injuries)
Possible	Might occur at some time	Moderate	Moderate adverse impact - (Medical treatment required)
Unlikely	Could occur at some time	Minor	Minor adverse impact - (First aid treatment)
Rare	May only occur in exceptional circumstances	Insignificant	Insignificant adverse impact - (No injuries)

	Risk Control Actions
High	The risk is unacceptable. Eliminate the design feature
Significant	High Priority for action
Medium	Responsibility to be allocated
Low	Manage by routine procedure and control

The following sets out the likely impacts of the project (Construction and Operational), potential mitigation measures, and the Risk Assessment.

Noise and Vibration *(Construction and Operational)*

- Increased noise and vibration during construction.
- Construction hours proposed.
- Increased noise during operation and function of the school and balance of development.

Noise and vibration impacts are likely to arise, particularly for adjacent uses outside of the site. This includes nearby residential uses (Macquarie University Village), which is proximate to the site across Culloden Road. Typical construction noise impacts are likely to be experienced. Potential vibration impacts will be dependent upon the sub-surface conditions at the site in relation to excavation. Noting that shale is the predominant rock type (rather than sandstone), vibration impacts are likely to be lesser than for other locations in the locality.

As noted in the preceding section, construction noise and vibration will need to be managed during works to ensure impacts can be mitigated. Implementation strategies to mitigate impacts upon neighbours will help reduce those noise and vibration impacts which are likely to exceed acceptable target levels. Similarly, operational noise mitigation strategies will be employed to meet noise targets, noting operational noise will generally be wholly compliant with the relevant standards and targets.

Mitigation through adoption of a Construction Noise and Vibration Management Plan once the contractor is appointed will assist in minimising noise impacts at the construction phase. Further, operational mitigation with appropriate plant selection, noise suppression and shielding within the plant and machinery will limit noise impacts. Given the school grounds will generally not be open to public use will minimise after hours noise.

It is understood EPA's standard construction hours will be extended on Saturdays only to 4pm as is common for all recent SSD DA's at MQU. The relevant noise levels for non-standard hours would apply.

Broadly, health impacts arising from noise and vibration will be able to be managed in standard ways, through staging of works, respite periods, suitable pre-notification of works and the like.

Risk Assessment Rating = Likely Likelihood (4) + Moderate Consequence (3) = **Significant (7).**

Mitigation Measures from the Acoustic Impact Assessment will suitably address this risk.

Traffic and Parking *(Construction and Operational)*

- Increased localised traffic on roads (during both construction and operation).
- Public transport and green travel alternatives to car use.
- Intersection upgrade.
- Work zone on Culloden Road.
- Loss of 3-4 parking spaces on Culloden Road.

Short-term construction-related impacts are inevitable. Local roads and regional roads will nonetheless be able to cope with this additional traffic for the duration of the works. The additional traffic will be modest, particularly with implementation on restrictions on worker parking and a high degree of public transport use given the excellent public transport connections to the university and the site generally.

Traffic management principles set out by JMT Consulting in the Transport Impact Assessment will be employed as standard Mitigation Measures and a Construction Traffic Management Plan will be necessitated.

The operational traffic will result in only marginal increases in overall traffic to the MQU campus, noting 128 AM peak hour trips are anticipated and less in the PM peak hour.

Long standing workplace and/or university travel plan arrangements will apply to the development to foster reduced car dependency and increased levels of public transport usage.

The anticipated levels of car use will not result in, or trigger, the need for any upgrade to the Culloden, Gymnasium and Waterloo Road intersection as required under the executed VPA between Council and MQU. The threshold of 7,000 or more vehicles per weekday on Gymnasium Road immediately east of Culloden Road is not close to being breached. The modest increases in traffic (some 250 additional vehicles per day) will only marginally push the current 5,000 count towards this trigger point for works.

A work zone is likely be required on Culloden Road, although this will be determined by the appointed contractor. If a work zone is necessitated, 3-4 existing on-street parking spaces may be displaced temporarily. Similarly, the location of the Culloden Road access and porte cochere for the school and pre-school will also reduce the on-street parking by the same number. Ample available space exists within this general area of Culloden Road to offset / replace lost parking.

The likely health impacts of the traffic and parking scenarios arising can be deemed to be positive as they seek to promote alternatives to car uses and active options such as increased walking and cycling.

Risk Assessment Rating = Possible likelihood (3) + Minor Consequence (2) = **Medium (5)**.

Mitigation Measures applied address both construction and operational traffic management.

Visual Impacts, amenity, overshadowing (*Operational)*

- Visual impact from local residences and public roads.
- Reduced amenity to the site's residential neighbours including privacy, overlooking and loss of solar access.
- Wind impacts.

The development will read as a single storey development from the site's public edge to Culloden Road. In its context the development is low-rise and modest. It will not detract from any significant views or vistas, where they exist. Given the low-rise nature of the development and its position in the landscape and slope, the potential for wind and overshadowing impacts are self-evidently minimal to non-existent.

The existing and significant extent of perimeter plantings and mature trees which define the site's edge will be substantially retained and protected. This will enhance the retention of the existing amenity of the site and how the site is read and viewed from adjacent places. The trees will also assist in screening the development from different views.

Given the site's relative distance from sensitive (residential) neighbours, overlooking and privacy impacts are negligible and indiscernible, if occurring at all. Health impacts arising from the development in relation to amenity and visual impacts are unlikely.

Risk Assessment Rating = Rare (1) likelihood + Rare (1) Consequence = **Low (2)**.

No Mitigation Measures are required.

Heritage and Aboriginal Cultural Heritage *(Construction and Operational)*

- Material impacts upon any cultural heritage and relics.
- Material impacts upon any Aboriginal cultural heritage and relics.

The development is unlikely to impact upon any heritage or Aboriginal cultural heritage as the development site does not form part of a heritage item and is not identified by the recent site-specific ACHAR as containing any tangible artefacts or relics or other intangible cultural

heritage. In any case, an unexpected finds protocol would be a wholly reasonable and standard mitigation measure for each circumstance.

Risk Assessment Rating = Unlikely (2) likelihood + Minor (2) Consequence = **Medium (4)**.

No additional Mitigation Measures are required beyond that of the unexpected finds protocol.

Air Quality *(Construction)*

- Decrease in air quality.

The development is likely to only impact upon air quality through dust generation during the earthworks / construction phase of the project. Any dust generated will be managed via a final Construction Management Plan.

Risk Assessment Rating = Possible (3) Likelihood + Moderate (3) Consequence = **Significant (6)**.

Mitigation Measures proposed beyond that expected to be applied as a standard condition by the Department in consultation with the EPA.

Tree loss and Biodiversity *(Construction and Operational)*

- Loss of remnant bushland or planted trees within the development site
- Significant impact upon flora and fauna
- Replacement planting
- Tree Protection Zones

There will be no impact upon remnant native vegetation and biodiversity values as the site does not contain any. This is recognised by the development / site-specific BDAR waiver as described and set out in various places within this EIS.

The vegetation at the site is planted native vegetation. Of the site's 287 trees, 166 trees are proposed to be retained and be augmented with new plantings, including 92 new trees within the development site. Whilst a total of 121 trees are proposed to be removed, offset planting of the 92 new trees within the development and a further 30 elsewhere on the MQU campus, consistent with the MQU tree replacement policy of >1:1 will result in a net neutral tree replacement. The remainder of the trees will be retained and protected consistent with the articulated Tree Protection Zones and AS4970-2009.

Habitat trees with hollows (or similarly dead trees) which are proposed to be removed a likely to be able to be reused within the site or elsewhere within the campus to maintain habitat opportunities for birds and/or arboreal mammals.

Risk Assessment Rating = Almost Certain (5) likelihood + Major (4) Consequence = **High (9)**.

No Mitigation Measures are required, on the assumption that the standard tree protection requirements will be enforced as a condition of consent.

Contamination and Acid Sulphate Soils *(Construction)*

- Exposure of contamination, hazardous materials or acid sulphate soils during construction causing harm to human health.
- Contamination reducing the suitability of the site to continue as an education facility.

Based on a physical investigation of the site and borehole testing no contamination or asbestos or other hazardous materials were encountered. The development satisfies SEPP 55 and the site in its current state is suitable for the proposed land use(s).

The site is not mapped as being subject to acid sulphate soils. Assessments also conclude that the site is not subject to any groundwater.

Accordingly, no health effects are likely to arise in relation to construction or operation of the development.

Risk Assessment Rating = Rare (1) likelihood + Rare (1) Consequence = **Low (2)**.

Water Quality *(Construction and Operational)*

- Stormwater run-off impacts.

Construction-related stormwater controls on site will be detailed in an erosion and sediment control plan, generally in accordance with the "Blue Book" - Managing Urban Stormwater: Soils and Construction (Landcom NSW). The plan articulates the measures proposed which includes silt fences around the perimeter of the development site and location of works as well as other sediment and erosion control measures to manage and capture construction-related stormwater.

Ongoing stormwater management is addressed via a Stormwater Management Plan prepared by LP Consulting. This also confirms, via MUSIC modelling that the proposed stormwater management system can meet Council's DCP's minimum standards with respect to minimisation of pollutants into the water catchment and system.

Risk Management Rating = Possible (3) likelihood + Minor (2) Consequence = **Medium (5)**.

No additional Mitigation Measures are required aside from any standard conditions that may be imposed.

Crime *(Operational)*

- Potential areas of criminal or anti-social behaviour arising from the development

The review of the design and operation of the building against the CPTED Principles (see Section 7.3) has revealed that the potential for any new safety or security concerns as well as criminal or anti-social behaviour is low.

Risk Assessment Rating = Unlikely (2) likelihood + Minor (2) Consequence = **Medium (4)**.

No additional Mitigation Measures are required.

ESD, and climate change-related adaptability *(Construction and Operational)*

- Potential increase in emissions.
- Changed impacts upon and of the development resulting from climate change

Based on the ESD credentials for the development and the targets set the development, with a goal of equivalency to a 4.5-star Green Star rating and seeking to exceed the 4.5-star NABHERS rating, the development is well placed to meet industry norms for ESD.

The development is also flexible to address impacts upon it, and of it upon, the CSIRO's Climate Change impacts. The development is resilient and adaptable to change that is predicted in ensuing decades within the region.

Risk Assessment Rating = Possible (3) likelihood + Minor (2) Consequence = **5 (Medium)**.

No additional Mitigation Measures are required.

Bushfire *(operational)*

- Bushfire risk upon a Special Fire Protection Purpose development

As noted, the bushfire prone land classification of the site arises due to it sitting partly within Lot 191 DP 1157041 on the campus. This land parcel is affected by bushfire risk in various ways. The other land parcel the site sits on (Lot 8 DP 1047085) is however not bushfire affected or bushfire prone land.

The development site and its immediate environs, despite its vegetated nature, is described by the project's bushfire consultant as 'managed lands' given the maintenance regime in place over the site, its disturbed (albeit turfed) nature, and the lack of remnant vegetation and understorey vegetation.

The proposed tree removal and replacement plantings are able to maintain the site's 'managed land' character and classification to the extent that not Asset Protection Zone (APZ) is warranted. Similarly, the Bushfire Attack Level (BAL) rating of BAL-LOW reinforces the low risk bushfire environment.

Notwithstanding, and generally despite its Special Fire Protection Purpose classification, the development will need to meet all relevant Services Requirements of Planning for Bushfire Protection to ensure a safe bushfire environment and fire fighting outcome arises. There is insufficient bushfire threat to warrant a specific bushfire emergency management and evacuation plan. Should the NSW Rural Fire Service request a specific bushfire emergency management plan, this can be prepared integral to the overall emergency management procedures for the site that may address other emergency management threats.

Risk Assessment Rating = Possible (3) likelihood + Minor (2) Consequence = **Medium (5)**.

Lighting *(operational)*

- Impacts upon adjacent sensitive uses, including Macquarie University Observatory

The potential exists for new lighting impacts to occur upon adjacent light-sensitive uses, such as the Macquarie University Observatory. Whilst the site is a long-standing nominated development site (of up to 6 storeys), the proposed development is generally low-rise and seeks to maintain the vegetated condition of its adjacent tree canopy. Accordingly, the development's propensity to emit light or glare is somewhat lesser than a different development seeking to achieve the maximum development parameters for the site.

The development is generally likely to be used during business hours. Extended hours are likely to be limited and rare.

A lighting strategy has been formulated to address integration of the lighting with landscaping, promote safety and security at the site, and to manage impacts upon the observatory, with reference to the DPIE Dark Sky planning guideline.

Risk Assessment Rating = Possible (3) likelihood + Minor (2) Consequence = **Medium (5)**.

No additional mitigation measures are warranted, other than consistency with the Dark Sky planning guideline.

8.1 Cumulative Impacts Assessment

In light of the above and the assessment in Section 7.0 of this EIS, it is considered that the proposed development on its own or whether in conjunction with other developments occurring nearby at the same time, does not give rise to any cumulative environmental impacts that cannot be appropriately managed through the mitigation measures identified in the section above and in this EIS's appendices.

It is understood that there will be no concurrent works proposed in the vicinity of the site, and if so, none of a scale to significantly contribute to major impacts upon the locality in tandem with this development.

The recent MQU Central Courtyard development will be completed by the time consent is granted to this DA. Similarly, the recent MQU 8-12 University Ave project presently has no programmed commencement date. In the event this development is to commence demolition and construction works within the next 12 months, displaced car parking from that site will be able to utilise the nearby temporary car park as expected, given ample available capacity. Construction traffic will be able to be dispersed via Herring and Balaclava Roads in that instance given the location of that site towards the core of the campus. Construction of that development will not be serviced via Gymnasium Road or Culloden Road.

8.2 Student and Staff Caps

Based on consideration of the above section and assessment in the preceding section, the imposition of a student and/or staff cap to limit or control the development is not warranted. As noted elsewhere in this EIS, it is the applicant's strong preference that no limits or caps be imposed so that the intent of the available provisions of *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* is maintained and maximised to ensure appropriate flexibility. It is our view that conditions with a trigger point threshold are more appropriate in managing the need for any modification or new DA with respect to incremental and minor manageable growth.

Applying *Planning Circular PS17-004 – Regulating expansion of schools* the principles set out for consent authorities' consideration in determining whether to place a condition on a consent that will impose and numerical limit on student and staff numbers at school sites articulates that any cap can only be imposed if there is an extremely strong evidence and valid planning reason for doing so. The following provides an assessment against these principles.

Application of outcome-based consent conditions to retain flexibility
The consent authority should consider whether an outcome-based condition would mitigate the impact, rather than a prescriptive, numerical cap. Section 4.17 of the EP&A Act allows conditions to be expressed as an outcome or an objective, so long as there are clear criteria against which achievement of the outcome or objective can be assessed.

If a cap on student numbers is considered warranted, the condition should be drafted to require delivery of the desired outcome of the cap. For example, a cap condition placing an upper limit of student and staff numbers above current enrolment needs could be applied and the condition drafted to require certain measures to be implemented progressively prior to any increase in student numbers. This could include a condition requiring the applicant to submit revised traffic and pedestrian management plans to the consent authority to reflect the increased number to the satisfaction of the approval of the consent authority. This approach delivers an absolute limit to growth at the school but provides flexibility for incremental increases up to the limit permitted by the cap condition to address future operating needs without the need for a new application or a modification.

As noted in the Circular, the consent authority should recognise the need for flexibility when limiting staff and student numbers. Non-government schools (such as RIDBC) can also experience similar fluctuations in enrolments due to changes in population. Staff numbers may also fluctuate at schools depending on student numbers and specialist learning needs of the school. Should a consent authority determine that a cap is required, then it should also consider how the cap may be reasonably implemented with sufficient flexibility to allow the school to meet increased student enrolment demands.

9.0 CONCLUSION

The site at MQU provides RIDBC with a significant opportunity to relocate, consolidate and refocus its operations from the existing North Rocks campus to a new location which enhances its relationship with, and proximity to, academic functions with MQU, its student base, and the Australian Hearing Hub and Cochlear.

The site is highly suitable for the proposed development given the strategic and statutory planning basis underlining its ability for redevelopment. The site's environmental constraints are few and where these do exist are able to be suitably managed.

The subject land lies within the City of Ryde Council area and is subject to the *Ryde Local Environmental Plan 2014* (LEP). The area subject of the development is zoned B4 – Mixed Uses as well as Schedule 1 of the LEP. The proposal is permissible on the subject land under the LEP, as well as under the Education SEPP, by virtue of the B4 zone also being a prescribed zone for the purposes of clause 35(1) of that SEPP.

The proposal is also consistent with all other relevant provisions under the LEP including those in relation to heritage. There are no height, density, minimum lot size, or other built form controls that limit the development under the LEP whilst the approved MQU Part 3A Concept Plan also provides little control over this part of the campus. The development site itself is unaffected by biodiversity, contamination, flooding, heritage (whether Aboriginal or non-Aboriginal), or significant bushfire risk.

The proposed development contributes towards the achievement of the objects of the relevant strategic planning policies including the North District Plan and 'Better Placed: An integrated design policy for the built environment of New South Wales', which amongst other things advocate for development in support of education services for the region and better designed developments in their context.

The proposed development has been considered with reference to *State Environmental Planning Policy No. 55 - Remediation of Land*. In accordance with requirements under Clause 7(4), a Detailed Site Investigation has been prepared. The assessment concludes the likelihood of contamination at the site is nil.

A range of environmental impacts principally related to the construction of the development (such as noise, air quality, traffic, tree removal and parking) are able to be suitably mitigated and managed. From an operational standpoint, the development's key likely issues concern traffic management, which are also suitably able to be managed recognising that the school component of the development does not operate as a conventional school given the special nature and character of its student base and the concurrent traffic arrangements arising. The development is unlikely to significantly impact upon any MQU and sensitive adjacent development.

The development, as proposed, is worthy of approval by the Minister / Department and its consistency with the relevant strategic and statutory planning requirements is in the public interest due to wider community and educational benefits the development will bring to the region and Metropolitan Sydney.