Environmental Impact Statement

State Significant Development Application (SSD 10349)

Multi-Trades and Digital Technology Hub

TAFE NSW Meadowbank Campus
Meadowbank Education and Employment Precinct

Prepared for TAFE NSW

Submitted to the Department of Planning, Industry and Environment

October 2019

Certification of Environmental Impact Statement

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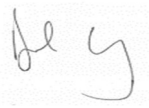
Proposed development

Applicant	TAFE NSW
Applicant's address	Level 2 Building A, Mary Ann Street Ultimo NSW 2007
Land to be developed	TAFE NSW Meadowbank Campus See Street, Meadowbank
Legal description	Lot 11 DP 1232584
Project description	The Multi-Trades and Digital Technology Hub

Declaration

We certify that the contents of the Environmental Impact Statement, to the best of our knowledge, has been prepared in accordance with the requirements of clauses 6 and 7 of Schedule 2 of *Environmental Planning and Assessment Regulation 2000*; contains all available information that is relevant to the assessment of the development and that to the best of our knowledge the information contained in this report is neither false nor misleading.



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Cover image: The Multi-Trades and Digital Technology Hub, viewed from See Street in Meadowbank (Source: Gray Puksand)

Revision	Date Issued	Reviewed by	Approved by	Date approved	Revision Type
1	16.09.2019	Dan Keary	N/A	N/A	Draft
2	11.10.2019	Dan Keary	N/A	N/A	Draft
3	14.10.2019	Dan Keary	Dan Keary	14.10.2019	Final

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Abbreviations

Applicant	TAFE NSW
BC Act	*Biodiversity Conservation Act 2016*
BDAR	Biodiversity Development Assessment Report
Campus	TAFE NSW Meadowbank Campus
CBD	Central Business District
CIV	Capital Investment Value
CPTED	Crime Prevention Through Environmental Design
District Plan	North District Plan
DPIE	Department of Planning, Industry and Environment
DSI	Detailed Limited Site (Contamination) Investigation
Economic Plan	City of Ryde Economic Development Plan 2015-2019
Education SEPP	*State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017*
EES Group	Environment, Energy and Science Group
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ESD	Ecologically Sustainable Development
EVET	Externally delivered HSC Vocational Education Training Courses
FIR	Flood Impact Report
GBA	Gross Building Area
GFA	Gross Floor Area
GSC	Greater Sydney Commission
HIA	Heritage Impact Assessment
ICNG	Interim Construction Noise Guideline
ISEPP	*State Environmental Planning Policy (Infrastructure) 2007*
LGA	Local Government Area
NVIA	Noise and Vibration Impact Assessment
PGI	Preliminary Geotechnical Investigation
PSI	Preliminary Site Investigation
RAP	Remediation Action Plan
RDCP 2014	City of Ryde Development Control Plan 2014
Region Plan	Greater Sydney Region Plan
RLEP 2014	*Ryde Local Environmental Plan 2014*
RMS	Roads and Maritime Services
SDRP	State Design Review Panel
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SIS	State Infrastructure Strategy 2018-2038
SINSW	Schools Infrastructure NSW
SSD	State significant development
SRD SEPP	*State Environmental Planning Policy (State and Regional Development) 2011*
VET	Vocational Education and Training

Executive Summary

This Environmental Impact Statement (EIS) has been prepared by Keylan Consulting Pty Ltd (Keylan) on behalf of TAFE NSW (the Applicant) to support a State significant development (SSD) application (SSD 10349) for a new Construction and Buildings Trade Facility (known as the Multi-Trades and Digital Technology Hub) at the TAFE NSW Meadowbank Campus. The campus is located in the suburb of Meadowbank, within the City of Ryde local government area (LGA).

TAFE NSW Meadowbank currently provides its students with access to the latest technologies and equipment and provides vocational education and training in the highest industry-standard facilities. The development of the new Multi-Trades and Digital Technology Hub will further enhance the education and training delivery modes that are offered on the campus.

The development meets the criteria of State significant development (SSD) under *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). Schedule 1, clause 15(3) of the SRD SEPP specifies development for the purpose of a tertiary institution (within the meaning of *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017*) (Education SEPP), including associated research facilities, that has a capital investment value (CIV) of more than $30 million meets the criteria of SSD.

The Minister for Planning and Public Spaces (the Minister) is the consent authority for the application.

This EIS has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) issued by the Department of Planning, Industry and Environment (DPIE) on 5 July 2019. Revised SEARs were issued by the DPIE on 28 August 2019 to reflect the revised project title and issue of a Biodiversity Development Assessment Report (BDAR) waiver.

This EIS is also prepared in accordance with Schedule 2, Part 3 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). The EIS should be read in conjunction with the appended supporting documents and plans.

Meadowbank Education and Employment Precinct

The Multi-Trades and Digital Technology Hub is a key component of the Meadowbank Education and Employment Precinct (the Precinct) that has been established in collaboration between various NSW Government agencies and the Greater Sydney Commission (GSC). The Precinct includes redeveloped TAFE Meadowbank facilities, the relocation of existing school communities, the construction of new schools and the establishment of new transport links.

The Precinct is envisaged as a world-class education precinct that will provide a continuous pathway for students from school to vocational training or higher education. The Precinct forms part of the NSW Government's commitment to provide significant investment in public education infrastructure, while also being as a safe place where locals can access shared facilities and new community spaces.

The Precinct forms part of the co-location of the existing TAFE NSW Meadowbank campus and the relocation and consolidation of the Meadowbank Public School and Marsden High School to accommodate 1,000 primary school students, 1,500 high school students and a 120 place Intensive English Centre (referred to as the new Meadowbank Education Precinct

Schools). The Precinct provides a unique opportunity to combine primary, secondary and tertiary educational facilities in the one location.

The site and locality

The TAFE Meadowbank campus is located approximately 8 kilometres (km) east of the Parramatta central business district (CBD) and 12 km north-west of the Sydney CBD.

The site is legally described as Lot 11 in Deposited Plan (DP) 1232584. The campus in its entirety comprises an area of approximately 5.6 hectares and is physically bordered by Constitution Road, See Street, McPherson Street, Rhodes Street and the T9 Northern Line (rail corridor) in the suburb of Meadowbank.

The campus is occupied by buildings of varying heights and design, open space and recreational spaces and on-site car parking areas. The campus infrastructure currently supports 13,559 students and 595 staff.

The new Meadowbank Education Precinct Schools (SSD 9343) will adjoin the Multi-Trades and Digital Technology Hub to the north on land that was divested by TAFE NSW to the Department of Education. The remainder of the site has been retained by TAFE NSW for its on-going use as a tertiary institution.

The proposal

The development seeks approval for the construction of a new educational establishment, referred to as the Multi-Trades and Digital Technology Hub. The built form of the facility includes:

- a maximum building height of six storeys (27.4 metres) presenting as a two storey building (12 metres) at its frontage to See Street
- a gross floor area (GFA) of approximately 13,930 m^2
- various learning spaces, workshop areas, digitally enabled spaces, seminar rooms and industry engagement spaces
- amenities, end-of-trip facilities and storage areas
- activation of the laneway and courtyard space adjacent to Building P
- 200 basement car parking spaces
- loading dock and services accessible from See Street
- outdoor spaces and on-site landscaping.

The Multi-Trades and Digital Technology Hub will be an active learning environment co-locating disciplines under building, construction, engineering and manufacturing that are united by a focus on new digital technologies. The development forms part of the NSW Government's investment to transform the TAFE Meadowbank into a technology-focused campus.

The new facilities proposed as part of the development will:

- cater for the needs of educational needs of all students
- address the changing nature of the workforce by offering practicable training experiences that support employability
- include modern, flexible and future-proofed learning spaces
- provide increased opportunities for industry partnerships and collaboration on-site
- improve student experience and amenity.

Works to prepare the site for construction including the demolition of campus Building N, removal of existing hardstand areas and associated car parking infrastructure, vegetation clearing and bulk earthworks and remediation activities will be carried out as part of a separate development approval process under Part 5 of the EP&A Act and in accordance with the Education SEPP.

Permissibility

The development is proposed on land zoned SP2 Infrastructure (Educational Establishments) under the *Ryde Local Environmental Plan 2014* (RLEP 2014) and is defined as an 'Educational Establishment'.

In accordance with the RLEP 2014, educational establishments including any development that is ordinarily incidental or ancillary to development for the purpose of an educational establishment are permissible in the SP2 zone.

Consultation

TAFE NSW has undertaken extensive engagement and consultation with Council, State Government authorities, the TAFE Meadowbank community and the surrounding local community throughout the preparation of the EIS. Engagement and consultation activities will continue to be carried out during the public exhibition process and assessment of the SSD application.

During preparation of the EIS, TAFE NSW has consulted directly with the following agencies:

- Department of Planning, Industry and Environment
- City of Ryde Council
- Government Architect NSW (through the State Design Review Panel process)
- Transport for NSW
- Roads and Maritime Services
- Ausgrid

Strategic context

The development demonstrates strategic merit as it is consistent with the aims and objectives of the following State and local government strategic plans and policies:

- State Priorities
- Greater Sydney Region Plan
- State Infrastructure Strategy 2018-2038
- Future Transport Strategy 2056
- North District Plan
- Better Placed
- City of Ryde Economic Development Plan 2015-2019
- TAFE NSW Strategic Plan 2016-22
- Preliminary Meadowbank Education and Employment Precinct Masterplan

The strategic justification for the proposal and consideration of the above policies is provided in Section 6 of this EIS.

Statutory context

The site is zoned SP2 Infrastructure (Educational Establishment) under the *Ryde Local Environmental Plan 2014* (RLEP 2014). The proposed development is for an education facility and is permissible with consent in the SP2 land use zone.

The Minister is the consent authority for the application as it meets the threshold for SSD under the SRD SEPP.

The statutory requirements that are relevant to the application, including the applicable environmental planning instruments (EPIs) and planning and environmental policies are addressed at Section 7 of the EIS.

Environmental assessment

A detailed assessment of the potential environmental impacts of the proposal is contained in Section 8. A summary of the conclusions made regarding potential environmental impacts is provided below.

Built form and urban design

The built form and design of the development is appropriate in the context of the site and the surrounding locality on the basis that:

- the development is of an appropriate height and scale in relation to existing buildings on the TAFE site and the lower-scale residential development along See Street
- it is consistent with existing larger-scale buildings located across the TAFE Meadowbank campus
- the development will present as a two storey structure when viewed from See Street
- it provides an appropriate response and interaction with Building P by maintaining a visual link from See Street
- the building makes use of space and natural light through its atrium-style design
- the basement car park and loading dock area is shielded from view from See Street
- the development will not result in unacceptable overshadowing impacts
- the development will not have an unacceptable visual impact from the nearest residences
- the development incorporates a range of Crime Prevention Through Environmental Design principles.

Traffic and transport

Travel surveys of existing staff and students indicate that private vehicles are the most common mode of travel to the site for both staff (74 per cent) and students (42 per cent), with travel via train also comprising a significant portion of travel to and from the campus, given its location next to Meadowbank Railway Station.

Traffic impacts of the development on the surrounding intersections were assessed in response to the results of SIDRA Intersections modelling. The traffic generation from the new Meadowbank Education Precinct Schools was included in the traffic models to ensure that a comprehensive and cumulative traffic impact assessment was undertaken.

For the 2022 future base traffic conditions, all intersections in proximity to the site are found to perform at an acceptable level of service (LoS) D or better, except for the Victoria Road and Hermitage Road intersection in the AM peak.

For the 2032 future base scenario, all intersections are found to perform at an acceptable LoS D or better, except for:

- Victoria Road and Hermitage Road
- Victoria Road and Bowden Street

A Travel Plan has been prepared as part of the application which targets initiatives to reduce staff and student reliance on private vehicle travel and increase travel via more sustainable modes such as public and active transport. Some of the key initiatives include:

- ensuring adequate bicycle parking is provided to meet the demand of the campus
- providing lockers to allow students and staff to carry a change of clothes
- developing a map showing public transport routes and key pedestrian and cyclist routes to the campus
- allocating priority parking spaces for car-poolers.

Heritage

The TAFE Meadowbank campus does not contain any items of State or local heritage significance. There are, however, a number of listed heritage items located in proximity to the campus.

The assessment finds that all works associated with the development are wholly contained within the boundaries of the campus and, therefore, will not impact on the significance or values of the surrounding heritage items.

An Aboriginal Cultural Heritage Assessment prepared as part of the application finds that the site does not contain any Aboriginal sites, places or objects or areas of potential Aboriginal archaeological sensitivity. Previous development has seen the site extensively cleared of any native vegetation and has been subject to excavation and land modification works.

Should any unknown Aboriginal objects of archaeological significance be exposed during construction, disturbance of the area will cease and the Cultural Heritage Division of DPIE informed in accordance with section 89A of the *National Parks and Wildlife Act 1974*.

Social impacts

The following positive social impacts would result from the development:

- extensive improvement to vocational teaching and learning standards
- extensive opportunity for advanced educational outcomes in trades and technology disciplines
- significant value-addition to integrated and contemporary education facilities nationwide;
- improved local social capital and on-campus cohesion.

Noise and vibration

The noise and vibration assessment has considered the potential impacts on the acoustic environment during both construction and operation of the development.

The existing ambient noise environment surrounding the site is variable with road traffic noise and rail noise the primary noise sources. There are various surrounding receivers including residential, education and industrial land uses.

Attended and unattended noise surveys were conducted in the locations near the site to establish the ambient and background noise levels at the site and the surrounding area. The results of the noise surveys were used to determine the rating background levels (RBLs).

Construction activities on the site will be managed in accordance with the *Interim Construction Noise Guideline* (ICNG) including the recommended hours of construction. It is noted that the ICNG includes quantitative noise management levels (NMLs) and sleep disturbance criteria for residences and other sensitive land uses, including a NML of 10 dB above the RBL for residential receivers.

Construction of the development will be carried out in accordance with the quantitative NMLs outlined in the ICNG. It is noted that majority of the high noise-generating activities including demolition and site preparation works such as bulk earthworks will be undertaken as part of a separate development approval process.

Operational noise impacts generated by the development will potentially include noise emissions from the following sources:

- mechanical plant
- use of power tools in the outdoor workshops
- the external loading dock
- traffic generated by the development.

A range of mitigation measures are proposed to address the operation noise impacts including limiting the use of power tools and construction plant in the outdoor workshops and ensuring waste collection and external loading movements occur only during the day-time period.

Contamination

A Preliminary Site Investigation (PSI), Limited Detailed Site (Contamination) Investigation (DSI) and a Remediation Action Plan (RAP) are submitted as part of the SSD application.

The RAP has been prepared in accordance with the requirements of the EPA's statutory guidelines and has determined that the site can be made suitable for the proposed development subject to the following:

- appropriate management of off-site disposal of fill/soil in accordance with the RAP
- proper implementation of unexpected finds protocols during basement excavation and other civil works on the site
- consideration of remedial options and procedures in the event of finding significant site contamination.

The development is considered to be consistent with the requirements of *State Environmental Planning Policy No. 55 – Remediation of Land* as the RAP confirms that the site can be made suitable for its proposed use as an educational establishment.

Flooding and drainage

The development is within a minor overland flow path (through the existing on-site car park). The proposed site grading and stormwater drainage infrastructure incorporated as part of the development will redirect and convey flows away from the building.

The development will have no impact on the areas of major flooding that occur to the west of the building footprint and will have no impact on any existing buildings or structures that are located within the campus or any buildings or structures that are outside of the campus boundaries.

Flood modelling undertaken for the EIS demonstrates that the minor overland flow from See Street during both the 1% AEP and Probable Maximum Flood can be managed through adequate site grading and the implementation of appropriate stormwater management measures incorporated as part of the development design.

Biodiversity

A BDAR Waiver Request was prepared as part of the Request for SEARs and confirms that there are no naturally occurring threatened flora, fauna or ecological communities present on the site and that there is no suitable habitat for any threatened species that are predicted to occur in the locality.

Further, ecological habitat connectivity is negligible due to the site's highly disturbed nature and current use as an educational establishment and surrounding land uses including a light industrial estate to the north and established residential development to the east and south.

A BDAR waiver was subsequently granted by DPIE and the Environment, Energy and Science (EES) Group on 22 August 2019.

Following the change to the project description to include the Digital Technology Hub and the subsequent reissuing of the SEARs, DPIE advised the Applicant that a new BDAR waiver request was required. Consequently, a revised BDAR waiver request was prepared by EMM (dated September 2019) and was lodged with DPIE on 16 September 2019.

A new BDAR Waiver was granted by DPIE and EES Group on 25 September 2019. In its letter to the Applicant, DPIE advised that the development is "not likely to have any significant on biodiversity values" and does not require a BDAR.

Conclusion

The development will provide a significant public benefit through the provision of a major new tertiary educational facility on a site that is appropriately zoned for such purposes. The development will contribute to the broader vision of the Meadowbank Education and Employment Precinct as a world-class education precinct that will provide a continuous pathway for students from school to vocational training or higher education.

The conclusions and recommendations provided in the accompanying technical reports confirm the development will not have a significant or detrimental impact on the amenity of the surrounding locality or upon the existing environment.

Further, the EIS demonstrates the development has strategic merit as it is consistent with the aims and objectives of the relevant strategic plans that apply to the site including the

Greater Sydney Region Plan, North District Plan and the preliminary Meadowbank Education and Employment Precinct Masterplan.

Given the above, the development is considered to be in the public interest and therefore warrants approval.

1 Introduction

1.1 Purpose of the report

This Environmental Impact Statement (EIS) supports a State significant development (SSD) application for a new Construction and Buildings Trade Facility (known as the Multi-Trades and Digital Technology Hub) at the TAFE NSW Meadowbank Campus (the campus). The campus is located in the suburb of Meadowbank, within the City of Ryde local government area (LGA).

The Multi-Trades and Digital Technology Hub is part of the Meadowbank Education and Employment Precinct. The Precinct was announced by the NSW Government in June 2018 as a world-class education precinct that will provide a continuous pathway for students from school to vocational training or higher education and forms part of the NSW Government's commitment to provide investment in public education infrastructure.

The development meets the criteria of State significant development (SSD) under *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). Schedule 1, clause 15(3) of the SRD SEPP specifies development for the purpose of a tertiary institution (within the meaning of *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017*), including associated research facilities, that has a capital investment value (CIV) of more than $30 million meets the criteria of SSD.

The application is submitted to the Department of Planning, Industry and Environment (DPIE) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The development is for the purpose of a tertiary institution (TAFE NSW) and has a CIV in excess of $30 million (refer Appendix B).

1.2 Structure of the report

The structure of this EIS is outlined in Table 1. The EIS should be read in conjunction with the supporting information and plans that are appended to this report and listed in Table 3.

Section No.	Description
Executive Summary	A summary of the EIS including the key findings.
Section 1 **Introduction**	Overview of the EIS, the proposed development and project objectives.
Section 2 **Site analysis**	A description of the site and surrounding development.
Section 3 **Development description**	A detailed description of the development.
Section 4 **Project justification**	Justification for the development and consideration of project alternatives.
Section 5 **Consultation**	Outlines the consultation activities that have been carried out during preparation of the EIS.
Section 6 **Strategic planning context**	Identifies the relevant strategic plans and documents as they relate to the site and the development.
Section 7 **Statutory planning context**	Identifies the statutory requirements of the site and the development.
Section 8 **Environmental assessment**	An assessment of the potential impacts on the environment and recommended mitigation measures to minimise such impacts.
Section 9 **Environmental Risk Assessment**	Identifies potential environmental impacts associated with the proposal and proposed mitigation measures.

Section No.	Description
Section 10 Conclusion	A summary of the key findings of the EIS.

Table 1: Structure of the EIS

1.3 Project Team

The project team formed to deliver the SSD application is outlined in Table 2.

Supporting documentation	Consultant	Appendix No.
Environmental Impact Statement	Keylan Consulting	N/A
Secretary's Environmental Assessment Requirements	N/A	Appendix A
Capital Investment Value	Slattery	Appendix B
Architectural Design Statement	Gray Puksand	Appendix C
Architectural Plans	Gray Puksand	Appendix D
Landscape Plans	Tract	Appendix E
Survey Plan	CMS Surveyors	Appendix F
Wind Statement	Windtech	Appendix G
Crime Prevention Through Environmental Design	Mecone	Appendix H
Transport and Accessibility Impact Assessment	GTA	Appendix I1
Travel Plan	GTA	Appendix I2
Ecologically Sustainable Development Report	JHA	Appendix J
Heritage Impact Assessment	AMBS Ecology & Heritage	Appendix K
Aboriginal Cultural Heritage Assessment	AMBS Ecology & Heritage	Appendix L
Social Impact Assessment	Elton Consulting	Appendix M
Noise and Vibration Impact Assessment	JHA	Appendix N
Preliminary Geotechnical Investigation	Douglas Partners	Appendix O
Preliminary Site Investigation	Greencap	Appendix P
Detailed Limited Site (Contamination) Investigation	Douglas Partners	Appendix P1
Remediation Action Plan	Douglas Partners	Appendix P2
Services Infrastructure Management Plan	JHA	Appendix Q
Flood Impact Report	TTW	Appendix R1
Civil Design Report	TTW	Appendix R2
BDAR Waiver Request and Waivers	EMM Consulting	Appendix S
Construction Waste Management Plan	Waste Audit	Appendix T1
Operational Waste Management Plan	Waste Audit	Appendix T2

Supporting documentation	Consultant	Appendix No.
Preliminary Construction Management Plan	GHD	Appendix U
Stakeholder Engagement Outcome Report	Elton Consulting	Appendix V
Accessibility Design Review Report	ABE Consulting	Appendix W
Electromagnetic Field Study	JHA	Appendix X
Specialist Lighting Report	JHA	Appendix Y
Section 10.7(2) and (5) Planning Certificates	N/A	Appendix Z

Table 2: Supporting documentation and project team

1.4 Secretary's Environmental Assessment Requirements

This EIS has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) issued by the DPIE on 5 July 2019 (SSD 10349).

Revised SEARs were issued by the DPIE on 28 August 2019 to reflect the revised project title, minor built form changes and the issue of a Biodiversity Development Assessment Report (BDAR) waiver.

The SEARs and where they are addressed in this EIS are set out in Table 3 below.

Environmental Assessment Requirement	EIS Reference	Supporting Documentation
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).	Section 7	
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 9	
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); and* • *measures to avoid, minimise and if necessary, offset predicted impacts, including detailed contingency plans for managing any significant risks to the environment.*	Section 8	
The EIS must also be accompanied by: • *high quality files of maps and figures of the subject site and proposal; and* • *a report from a qualified quantity surveyor providing:* ○ *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;* ○ *an estimate of jobs that will be created during the construction and operational phases of the proposed development; and* ○ *certification that the information provided is accurate at the date of preparation.*	Section 2	Appendix B
Key Issues		
The EIS must address the following specific matters: ***1. Statutory and Strategic Context*** *Address the statutory provisions contained in all relevant environmental planning instruments, including:* • *Biodiversity Conservation Act 2016;*	Section 7	N/A

Environmental Assessment Requirement	EIS Reference	Supporting Documentation
• *State Environmental Planning Policy (State & Regional Development) 2011;* • *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017;* • *State Environmental Planning Policy No. 64 – Advertising and Signage;* • *State Environmental Planning Policy No.55 – Remediation of Land;* • *Draft State Environmental Planning Policy (Remediation of Land);* • *Draft State Environmental Planning Policy (Environment); and* • *Ryde Local Environmental Plan 2014.* *Permissibility* *Detail the nature and extent of any prohibitions that apply to the development.* *Development Standards* *Identify compliance with the development standards applying to the site and provide justification for any contravention of the development standards.* *Provisions* *Adequately demonstrate and document in the EIS how each of the provisions in the listed instruments are addressed, including reference to necessary technical documents.*		
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;* • *Sydney's Cycling Future 2013;* • *Sydney's Walking Future 2013;* • *Sydney's Bus Future 2013;* • *Crime Prevention Through Environmental Design (CPTED) Principles;* • *Healthy Urban Development Checklist (NSW Health, 2009);* • *Better Placed – an integrated design policy for the build environment of NSW (Government Architect NSW (GANSW), 2017); and* • *Ryde Development Control Plan 2014.*	Section 6	N/A
3. Operations *Provide details of the existing and proposed operations, including staff and student numbers, and hours of operation.*	Section 2	N/A
4. Built Form an Urban Design • *Address the height, density, bulk and scale, setbacks and interface of the proposal in relation to the*	Section 8	Appendix C and Appendix D

Environmental Assessment Requirement	EIS Reference	Supporting Documentation
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, colours and colours.* • *Provide details of any digital signage boards, including size, location and finishes.* • *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 integration with built form, security, shade, topography and existing vegetation.* • *Address CPTED Principles.*		
5. ***Environmental Amenity*** • *Detail amenity impacts including solar access, acoustic impacts, visual privacy, view loss, overshadowing and wind 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 envelope and likely future development).* • *Include a lighting strategy and measures to reduce spill into the surrounding sensitive receivers.*	Section 8	Appendix C
6. ***Staging*** *Provide details regarding the staging of the proposed development (if any).*	N/A	N/A
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 existing TAFE facilities and similar schools within the local area;* • *existing car parking capacity and utilisation on streets within a 400 metre radius from the site on a typical weekday covering at least one hour before and after the proposed hours of operation (including night classes);* • *the adequacy of existing public transport services or any future public transport infrastructure within the vicinity of the site, pedestrian and bicycle networks and associated infrastructure within the vicinity of the site*	Section 8	Appendix I1 and Appendix I2

Environmental Assessment Requirement	EIS Reference	Supporting Documentation
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 the existing TAFE building(s) which are currently being refurbished, including the potential increase in student population and increase in traffic and parking demands;* • *the impact of trips generated by the development on the area-wide network, with consideration of the cumulative impacts from other proposed and / or 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 and services required to ameliorate any impacts on traffic flow efficiency and road user safety impacts associated with the proposed development, including details on improvements required to affected intersections, additional bus routes along bus capable roads (i.e. minimum 3.5 m wide travel lanes), additional bus stops or bus bays;* • *details of travel demand management measures to minimise the impact on general traffic and bus operations, including details of a location-specific sustainable travel plan (Green Travel Plan and specific Workplace Travel Plan) and the provision of facilities to increase the non-car mode share for travel to and from the site* • *the future pedestrian and cyclist desire lines, 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;* • *identify the loss of existing on-site parking as a result of the development and the recent reduction in area of the TAFE site;* • *proposed number of on-site car parking spaces for staff, students and visitors and corresponding compliance with existing parking codes (i.e. City of Ryde Development Control Plan) and justification for the level of car parking provided on-site and an assessment of the impact on the on street capacity and utilisation;* • *the short term reduction of existing car parking spaces for staff, students and visitors due to the proposed*		

Environmental Assessment Requirement	EIS Reference	Supporting Documentation
construction works and the proposed location, operational and functional characteristics of the re-allocated staff, students and visitor's car parking area; • *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 and provide any associated recommendations to ameliorate any such impacts;* • *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 location and loading arrangements including swept path diagrams of the largest design vehicle showing forward inbound and forward outbound movements 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);* ○ *how these impacts will be mitigated for any associated traffic, pedestrian, cyclists, parking and public transport service;* ○ *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 5 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; and* ○ *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).*		

Environmental Assessment Requirement	EIS Reference	Supporting Documentation
• *Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development.* • *Standards Australia AS2890.1 (Off-Street car parking).* • *Standards Australia AS2890.2 (Parking Facilities Off-street commercial vehicle facilities).* • *Standards Australia AS2890.3 (Bicycle Parking Facilities).* • *Standards Australia AS2890.5 (On-street car parking).* • *Standards Australia AS2890.6 (Off-street parking for people with disabilities).* • *City of Ryde Bicycle Strategy.* • *City of Ryde Integrated Transport Strategy.*		

8. Ecologically Sustainable Development
• *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.*
• *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; and*
  ○ *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.*
	Section 8	Appendix J

9. Heritage • *Provide a statement of significance and an assessment of the impact on the heritage significance of the heritage items on or adjacent to the site in accordance with the guidelines in the NSW Heritage Manual (Heritage Office and DUAP, 1996).*	Section 8	Appendix K

Environmental Assessment Requirement	EIS Reference	Supporting Documentation
• *Address any archaeological potential and significance on the site and the impacts the development may have on this significance.*		
10. Social Impacts • *Prepare a social impact assessment, which:* • *identifies and analyses the potential social impacts of the development, from the points of view of the affected community/ies and other relevant stakeholders, i.e. how they expect to experience the project* • *considers how potential environmental changes in the locality may affect people's: way of life; community; access to and use of infrastructure, services, and facilities; culture; health and wellbeing; surroundings; personal and property rights; decision-making systems; and fears and aspirations, as relevant and considering how different groups may be disproportionately affected* • *assesses the significance of positive, negative, and cumulative social impacts considering likelihood, extent, duration, severity/scale, sensitivity/importance, and level of concern/interest* • *includes mitigation measures for likely negative social impacts, and any proposed enhancement measures* • *details how social impacts will be adaptively monitored and managed over time*	Section 8	Appendix M
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).* • *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) (DECCW). 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*	Section 8	Appendix L

Environmental Assessment Requirement	EIS Reference	Supporting Documentation
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, mechanical services (e.g. trade equipment, air conditioning plant), use of site facilities for events, 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 (Department of Environment and Conservation, 2006).* • *Development Near Rail Corridors and Busy Roads – Interim Guideline (Department of Planning, 2008).* • *Australian Standard 2363:1999 Acoustics – Measurement of noise from helicopter operations.*	Section 8	Appendix N
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).*	Section 8	Appendix O and Appendices P, P1 and P2
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,*	Section 8	Appendix Q

Environmental Assessment Requirement	EIS Reference	Supporting Documentation
proposed end uses of potable and non-potable water, and water sensitive urban design. • *Identify any potential impacts of the proposed construction and operation on existing utility infrastructure (and impacts of existing utility infrastructure on the proposal) and service provider assets and demonstrate how these will be protected or impacts mitigated.* *Relevant Policies and Guidelines:* • *Guidelines for limiting exposure to time-varying electric and magnetic fields (1 Hz – 100 kHz) (International Commission on Non-Ironizing Radiation Protection (ICNIRP), 2010).*		
15. Contributions • *Address Council's 'Section 7.11/7.12 Contribution Plan' and/or details of any Voluntary Planning Agreement, which may be required to be amended because of the proposed development.*	Section 8	N/A
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.* *Relevant Policies and Guidelines:* • *Guidelines for developments adjoining land managed by the Office of Environment and Heritage (OEH, 2013).*	Section 8	Appendix Q
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.*	Section 8	Appendix R1
18. Flora and Fauna *Engage a suitably qualified person to assess and document the flora and fauna impacts related to the proposal.*	Section 8	Appendix S
19. 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.* *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 (EPA).* • *Guidelines for developments adjoining land managed by the Office of Environment and Heritage (OEH, 2013).*	Section 8	Appendix U
20. Acid Sulphate Soils	Section 8	Appendix O

Environmental Assessment Requirement	EIS Reference	Supporting Documentation
Prepare an Acid Sulphate Soil Management Plan or otherwise address Clause 6.1 of the Ryde Local Environmental Plan 2014.		
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).*	Section 8	Appendix T1 and Appendix T2
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.*	Section 8	Appendix U
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:
• *Section 10.7(2) and (5) Planning Certificates (previously Section 149(2) and (5) Planning Certificate);*
• *Architectural drawings showing key dimensions, RLs, scale bar and north point, including:*
  ○ *plans, sections and elevation of the proposal at no less than 1:200;*
  ○ *illustrated materials schedule including physical or digital samples board with correct proportional representation of materials, nominated colours and finishes;*
  ○ *details of proposed signage, including size, location and finishes;*
  ○ *detailed annotated wall sections at 1:20 scale that demonstrate typical cladding, window and floor details, including materials and general construction quality;*
  ○ *site plans;*
• *Site Survey Plan, showing existing levels, location and height of existing and adjacent structures / buildings and site boundaries;*
• *Site Analysis Plan, including:*
  ○ *site and context plans that demonstrate principles for future development and expansion, built form character and open space network;*
  ○ *precinct scale plan showing relationship of the proposal to any proposed development on surrounding land;*
  ○ *active transport linkages with existing, proposed and potential footpaths and bicycle paths and public transport links; and*
		Appendix D, Appendix F, Appendix O and Appendix Z

Environmental Assessment Requirement	EIS Reference	Supporting Documentation
○ *site and context plans that demonstrate principles for future network, active transport linkages with existing, proposed and potential footpaths and bicycle paths and public transport links.* • *Sediment and Erosion Control Plan;* • *Shadow Diagrams;* • *View analysis, photomontages and architectural renders, including from those from public vantage points;* • *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;* ○ *plan identifying significant trees, trees to be removed and trees to be retained or transplanted;* • *Design report to demonstrate how design quality will be achieved in accordance with the above Key Issues including:* • *architectural design statement;* ○ *diagrams, structure plan, illustrations and drawings to clarify the design intent of the proposal;* ○ *detailed site and context analysis;* ○ *analysis of options considered including building envelope study to justify the proposed site planning and design approach;* ○ *visual impact assessment identifying potential impacts on the surrounding built environment and adjoining heritage items;* ○ *summary of feedback provided by GANSW and NSW State Design Review Panel (SDRP) and responses to this advice;* ○ *summary report of consultation with the community and response to any feedback provided;* ○ *how Aboriginal culture and heritage has been considered and incorporated into the design;* • *Geotechnical and Structural Report;* • *Accessibility Report;* • *Arborist Report;* • *Salinity Investigation Report (where required);* • *Acid Sulphate Soils Management Plan; and* • *Schedule of materials and finishes.*		
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;* • *GANSW (through the NSW SDRP process);* • *Transport for NSW; and* • *Transport for NSW (Roads and Maritime Services).*	Section 5	Appendix V

Environmental Assessment Requirement	EIS Reference	Supporting Documentation
Consultation should commence as soon as practicable to agree the scope of investigation. *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.*		
Further consultation after 2 years		
If you do not lodge a development application and EIS for the development within two years of the issue date of these SEARs, you must consult further with the Planning Secretary in relation to the preparation of the EIS.		
References		
The assessment of the key issues listed above must consider relevant guidelines, policies, and plans as identified.		

Table 3: Secretary's Environmental Assessment Requirements

2 Site analysis

2.1 Site location

The TAFE NSW Meadowbank Campus (the campus) is located approximately 5 kilometres (km) south-west of Macquarie Park, 8 km north-east of the Parramatta central business district (CBD) and 12 km north-west of the Sydney CBD.

The campus is bordered by Constitution Road, See Street, McPherson Street, Rhodes Street and the T9 Northern Line rail corridor in the suburb of Meadowbank within the City of Ryde local government area (LGA).

The campus is strategically located within 5 km of the Eastern Economic Corridor and the Greater Parramatta to the Olympic Peninsula (GPOP) and is accessible from Macquarie Park and Parramatta centres within 30 minutes via public transport.

The site location in context to the Parramatta CBD and Sydney CBD is shown in Figure 1.

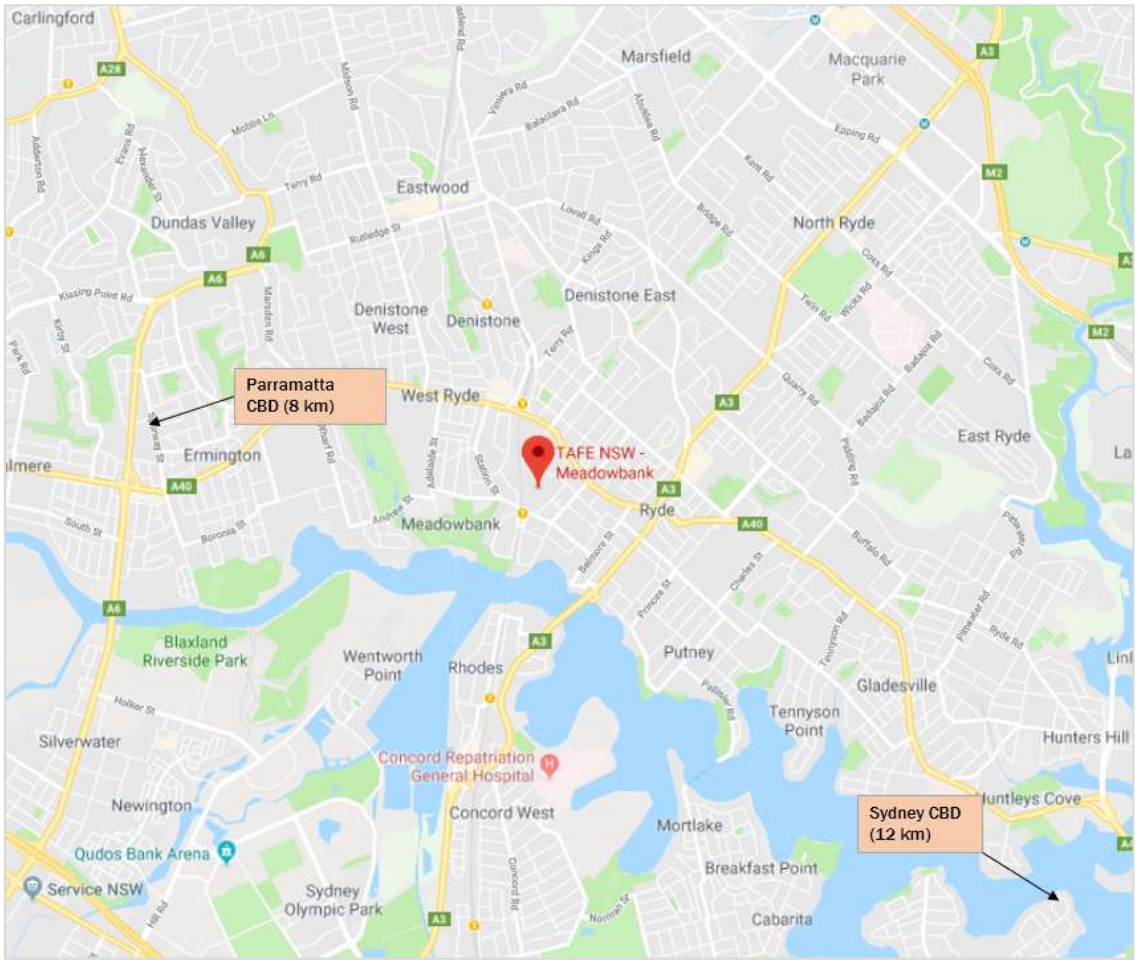

Figure 1: Site context (Source: Google Maps)

2.2 Site description

The campus in its entirety encompasses an area of approximately 5.6 hectares and is occupied by buildings of varying heights and designs, public domain and recreational spaces and on-site car parking areas. The campus currently provides for approximately 13,559 students and 595 staff.

The campus sits upon undulating topography and is constrained by an elevated rail line (the T9 Northern Line) and dense vegetation coverage along the western site boundary.

There are a number of access points to the campus including primary pedestrian access from Constitution Road adjacent to Meadowbank Train Station and secondary pedestrian access Rhodes Street. Vehicular access to on-site car parking areas are provided via See Street and egress provided via both See Street and Rhodes Street.

The development is proposed to be constructed within the north-eastern extent of the campus with primary frontage to See Street. The development will be constructed in place of an existing at-grade car park and campus Building N (child care facility).

The site location and features surrounding the campus are shown in Figure 2. The current layout of the TAFE Meadowbank campus is shown in Figure 3. Site images are provided at Figure 4 to Figure 6.

Figure 2: Site location and surrounding features (Base source: SIX Maps)

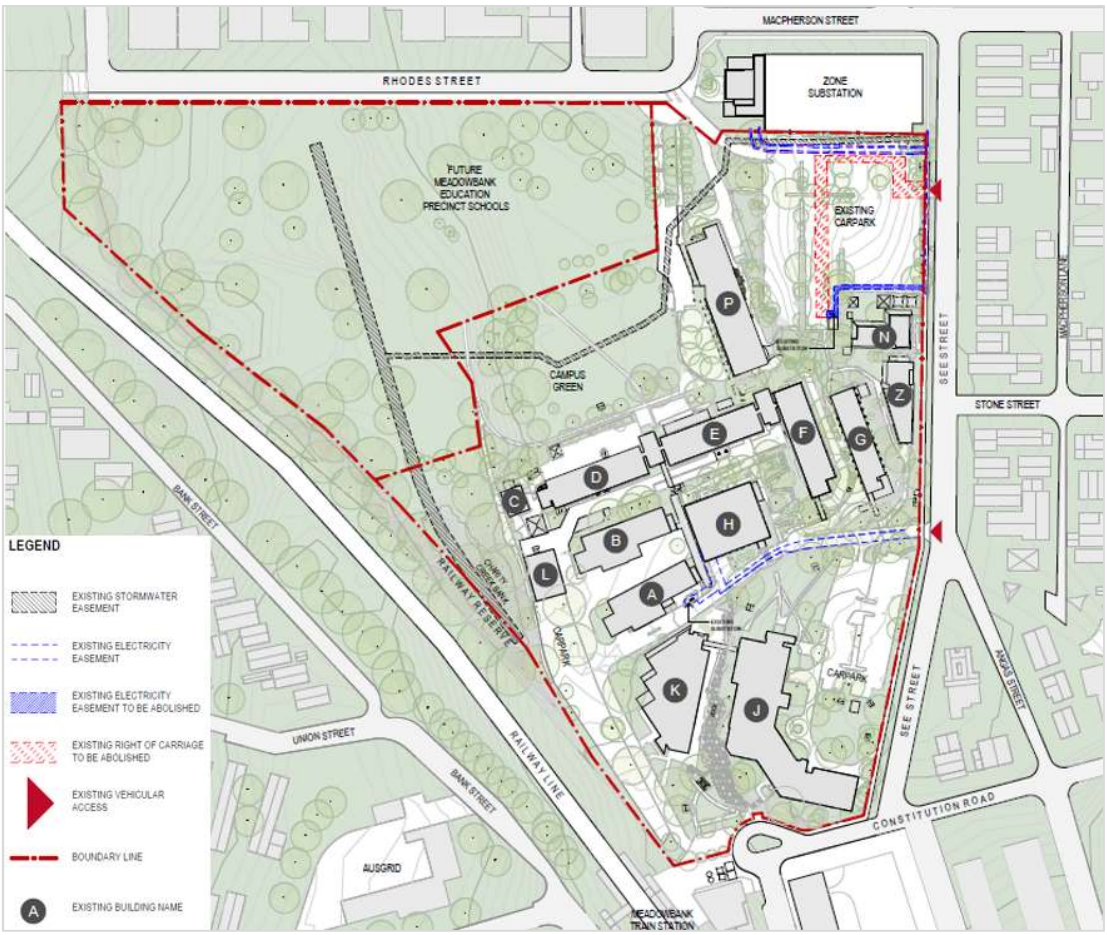

Figure 3: Layout of the TAFE Meadowbank Campus and adjoining school site (Source: Gray Puksand)

Figure 4: Existing on-site car park viewed from See Street, looking south-west (Source: Google Maps)

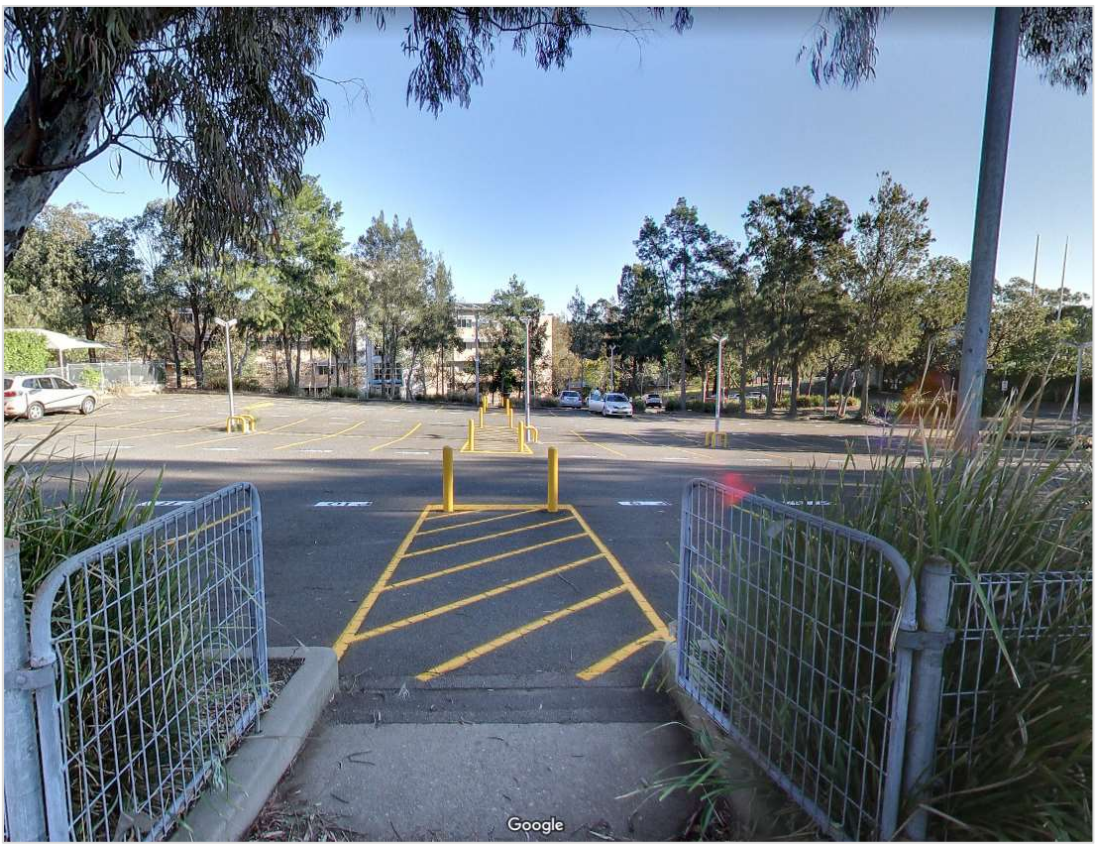

Figure 5: Existing on-site car park, looking east toward campus Building P (Source: Google Maps)

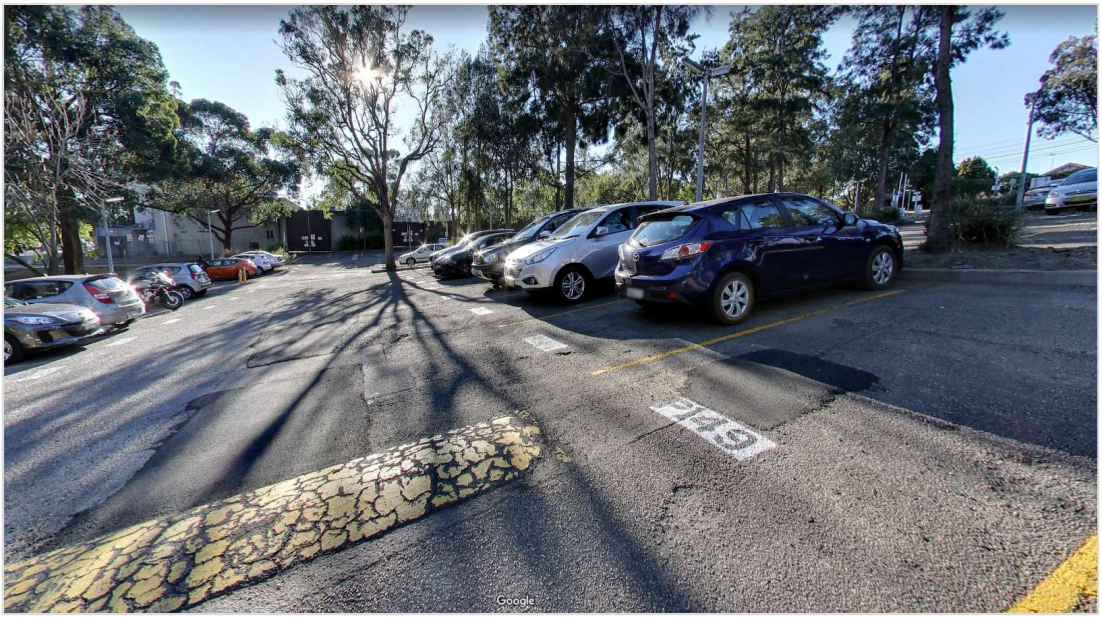

Figure 6: View of the site from within the existing on-site car park showing the sloping east-west topography, looking north to the zone substation (Source: Google Maps)

TAFE NSW recently divested the northern extent of the campus to the NSW Department of Education for the development of a new K-12 school. The new school will consolidate the existing Meadowbank Public School and Marsden High School (refer Section 2.4.1). The remainder of the site has been retained by TAFE NSW for its on-going use as a tertiary institution.

2.3 Site operations

Operations on the site are consistent with a tertiary educational establishment including buildings that house various learning spaces (classrooms, workshop areas, library etc.), recreational spaces, café and on-site car parking areas.

TAFE Meadowbank campus currently provides the following course offerings:

- Health and community teaching including children's services, community services, massage therapy, health, fitness, nursing and aged care
- Construction and engineering trades including carpentry, building, engineering and plumbing
- Media, business and information technology teachings including business administration, business services, communications, media, electro technology, information technology
- Foundation education and access educational programs and an outreach centre
- Adult Migration and Education Program (AMEP) and Skills for Education and Employment (SEE) programs
- Tourism, hospitality and horticulture offerings including the hair, beauty and make up and general hospitality.

2.4 Surrounding development

The TAFE Meadowbank campus is surrounded by a variety of different land uses. Land zoned for light industrial is located to the north and east and comprises a range of businesses including smash repairs, art supplies, self-storage facilities and manufacturing uses.

To the east is land zoned for low density residential and comprises the suburbs of Meadowbank and Ryde. This area generally comprises one and two storey detached dwellings as well as several places of public worship.

Land to the south (formerly referred to as the Meadowbank Employment Area) was recently rezoned to allow for mixed use development and includes various commercial and retail businesses. Higher density residential development including residential flat buildings of up to 8 storeys are located in this mixed use centre. Shepherds Bay and the Parramatta River is located further south, approximately 600 m from the campus.

To the west is the Northern Line rail corridor and established vegetation that provides a physical buffer between the campus and the rail corridor. Meadowbank Train Station is located at the southern extent of the campus.

2.5 Meadowbank Education and Employment Precinct

The Multi-Trades and Digital Technology Hub is a key component of the Meadowbank Education and Employment Precinct (the Precinct) that has been established in collaboration between various NSW Government agencies and the Greater Sydney Commission (GSC). The Precinct includes redeveloped TAFE Meadowbank facilities, the relocation of existing school communities, the construction of the new Meadowbank Education Precinct Schools and the establishment of new transport links.

The Precinct is envisaged as a world-class education precinct that will provide a continuous pathway for students from school to vocational training or higher education. The Precinct forms part of the NSW Government's commitment to provide significant investment in public

education infrastructure, while also being as a safe place where locals can access shared facilities and new community spaces.

In summary, the GSC's vision for the Precinct comprises:

- a revitalised and liveable place for the communities of Ryde and Meadowbank
- a highly connected place through existing transport networks
- a place that embodies place making informed by community engagement
- an opportunity to showcase the unique landscape and environment of Meadowbank
- accessible green spaces and sporting facilities shared with the residents of Ryde and Meadowbank.

The 'core' of the Precinct relates to the TAFE Meadowbank campus and the new Meadowbank Education Precinct Schools as well as the existing employment lands and Sydney Water site to the north, the Meadowbank Railway Station and retail area to the south and the small area of commercial land use to the west of the Northern Railway Line and Ausgrid site.

A broader 'frame' area is included as part of the Precinct where consideration of appropriate levels of amenity, connections and mobility is to be further investigated.

The Precinct, including the 'core' and 'frame' boundaries, are shown in Figure 7.

Figure 7: Meadowbank Education and Employment Area (Source: GSC)

The *Meadowbank Education and Employment Precinct Preliminary Masterplan* sets out the precinct-wide strategic planning framework for future land uses and key developments in the Precinct including the Multi-Trades and Digital Technology Hub and the new Meadowbank Education Precinct Schools. The Masterplan is further discussed at Section 6.2.1.

2.5.1 New Meadowbank Education Precinct Schools

TAFE NSW has divested approximately 3.3 ha of land within the northern extent of the TAFE Meadowbank campus to DoE for the development of the new Meadowbank Education Precinct Schools. The redevelopment of the site for the purpose of a new school is a key component of the Meadowbank Education and Employment Precinct, discussed at Section 2.5 above.

The new Meadowbank Education Precinct Schools will relocate and consolidate the existing Meadowbank Public School and Marsden High School to accommodate 1,000 primary school students, 1,500 high school students and a 120 place Intensive English Centre.

The delineation of the site apportioned to DoE for the new Meadowbank Education Precinct Schools, shown in context to the TAFE Meadowbank campus, is outlined in Figure 8.

Figure 8: TAFE Meadowbank site in context to the Meadowbank Schools site (Source: Gray Puksand)

Decanting of the school site is complete which has allowed School Infrastructure NSW (SINSW) to undertake all demolition and site preparation works for the new schools.

A SSD application for the new Meadowbank Education Precinct Schools (SSD 9343) has subsequently been prepared on behalf of DoE and SINSW and lodged with DPIE. It is understood the SSD application and the accompanying EIS for SSD 9343 will be publicly exhibited shortly.

The SSD application for the new Meadowbank Education Precinct Schools seeks development consent for the following:

- a multi-level, multi-purpose, integrated school building with a primary school wing and high school wing. The school building is connected by a centralised library that is embedded into the landscape and is proposed to include:
  - collaborative general and specialist learning hubs, with a combination of enclosed and open spaces
  - adaptable classroom home bases
  - four level central library, with primary school library located on ground floor and high school library on levels 1 to 3
  - laboratories and workshops
  - staff workplaces
  - canteens
  - indoor gymnasium
  - multipurpose communal hall
  - outdoor learning, play and recreational areas (both covered and uncovered)
- associated site landscaping and public domain improvements
- 60 on-site car parking spaces
- construction of ancillary infrastructure and utilities as required.

3 Development description

3.1 Development overview

The development is for a new Construction and Buildings Trade Facility, referred to as the Multi-Trades and Digital Technology Hub.

The **Multi Trades** component will be relocated from existing campus Buildings D, E and F and will be an active learning environment co-locating disciplines under building, construction, engineering and manufacturing and united by a focus on new digital technologies. Students will have access to state-of-the-art facilities that can expand, contract and adapt to industry needs.

The **Digital Technology** component involves the expansion of Business and Digital Technology teaching and will be the heart of the new technology-driven campus where facilities such as simulation rooms and dedicated technology workshops allow students to develop applicable software and hardware expertise in an increasingly digitalised workforce. There will be a focus on industry and academic engagement from the opportunity to pilot a new VET program in NSW.

The new facilities proposed as part of the development will:

- cater for the needs of educational needs of all students
- address the changing nature of the workforce by offering practicable training experiences that support employability
- include modern, flexible and future-proofed learning spaces
- provide increased opportunities for industry partnerships and collaboration on-site
- improve student experience and amenity.

A description of the development is summarised in Table 4.

Proposal	Description
Development summary	**The Multi-Trades and Digital Technology Hub comprising a maximum six storey building with basement car park included within the first two storeys and approximately 13,930 sqm of floor space to accommodate various learning spaces, workshop areas and digitally enabled spaces**
Site location	• Lot 11 in DP 1232584 • See Street, Meadowbank in the City of Ryde LGA • The building will be sited toward the north-eastern extent of the TAFE Meadowbank campus.
Building height	• Maximum building height of 27.4 m (six storeys) at the western elevation (rear of the site) • Presenting as a 12 m high building (two storeys) at its frontage to See Street at the eastern elevation
Gross floor area	• Total GFA of 13,930 m², comprising: ○ Level 1: 1,535 m² ○ Level 2: 871 m² ○ Level 3: 4,688 m² ○ Level 4: 2,034 m² ○ Level 5: 3,231 m² ○ Level 6: 1,572 m²

Proposal	Description

Building uses	• Level 1:
	  ○ basement car parking
	  ○ learning spaces
	  ○ workshop areas (plumbing workshop and sandpits)
	  ○ amenities
	• Level 2:
	  ○ basement car parking (over two levels)
	  ○ building services
	  ○ learning spaces
	  ○ workshop areas (welding)
	  ○ bicycle storage
	  ○ end-of-trip facilities
	• Level 3:
	  ○ learning spaces
	  ○ workshop areas (multi-trades, electro-technology, carpentry and construction)
	  ○ outdoor workshop
	  ○ workshop storage areas
	  ○ data rooms
	  ○ amenities
	  ○ waste storage areas
	  ○ loading dock access
	• Level 4:
	  ○ primary building access from See Street
	  ○ learning spaces
	  ○ industry engagement
	  ○ café
	  ○ amenities
	• Level 5:
	  ○ learning spaces
	  ○ seminar rooms
	  ○ applied research
	  ○ industry engagement
	  ○ workspaces
	  ○ outdoor area
	  ○ amenities
	• Level 6:
	  ○ learning spaces
	  ○ seminar rooms
	  ○ workshop
	  ○ industry engagement
	  ○ amenities

Car parking	• Approximately 200 basement car parking spaces • Loading and services deliveries accessible from See Street
Capital Investment Value	• In excess of $30 million
Jobs	• 120 full-time equivalent construction jobs • 125 full-time equivalent operational jobs

Table 4: Development summary

3.2 Site preparation works

Works to prepare the site for the construction of the development do not form part of the SSD application. The site preparation works will be carried out as part of a separate development approval process under Part 5 of the EP&A Act and in accordance with clause 53 of *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP).

The scope of works that will be considered as part of a (future) Review of Environmental Factors under Part 5 of the EP&A Act will include:

- all vegetation removal
- the removal of existing hardstand surfaces and associated car parking infrastructure
- the demolition of campus Building N.

3.3 Site layout and building access

The building is proposed to be sited toward the north-eastern extent of the campus and will have primary frontage to See Street.

The main civic arrival point and public entry to the building will be accessed from See Street (Level 4, eastern side of the building). Secondary public access will be via the new landscaped courtyard area and laneway space (Level 1, western side of the building).

Vehicular access to the basement car park and the loading dock will be provided at the northern extent of the building via a new driveway extending off See Street.

The location of the development in context to the broader campus and the new Meadowbank Education Precinct Schools is shown in Figure 9. Vehicular access arrangements to the site and the broader TAFE Meadowbank campus is shown in Figure 10.

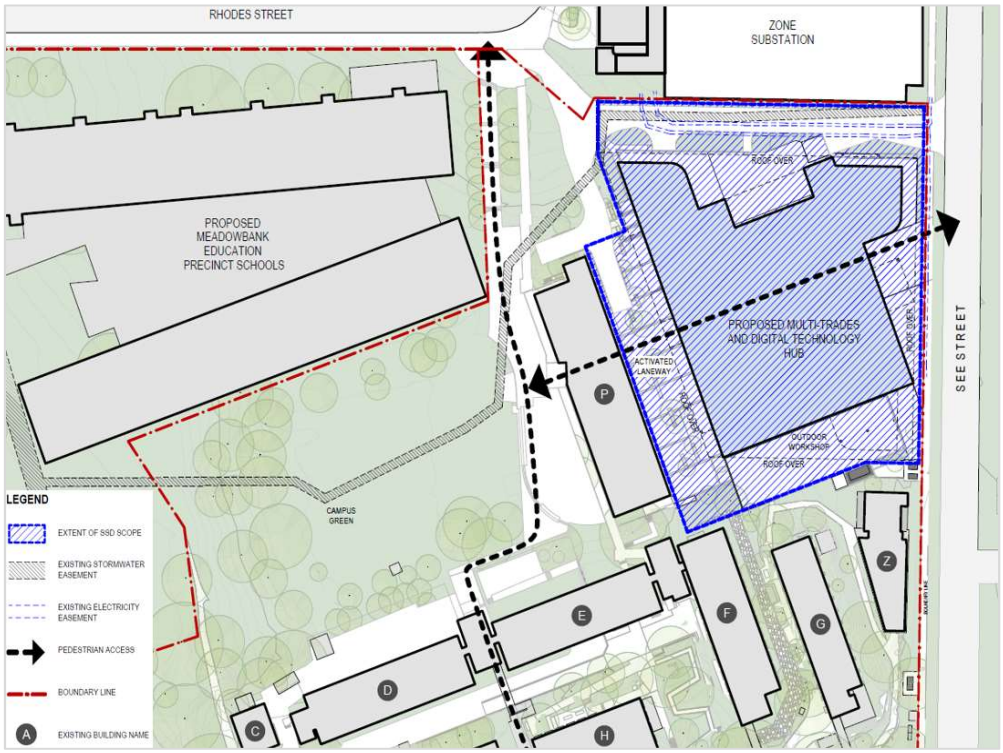

Figure 9: Development site context (Source: Gray Puksand)

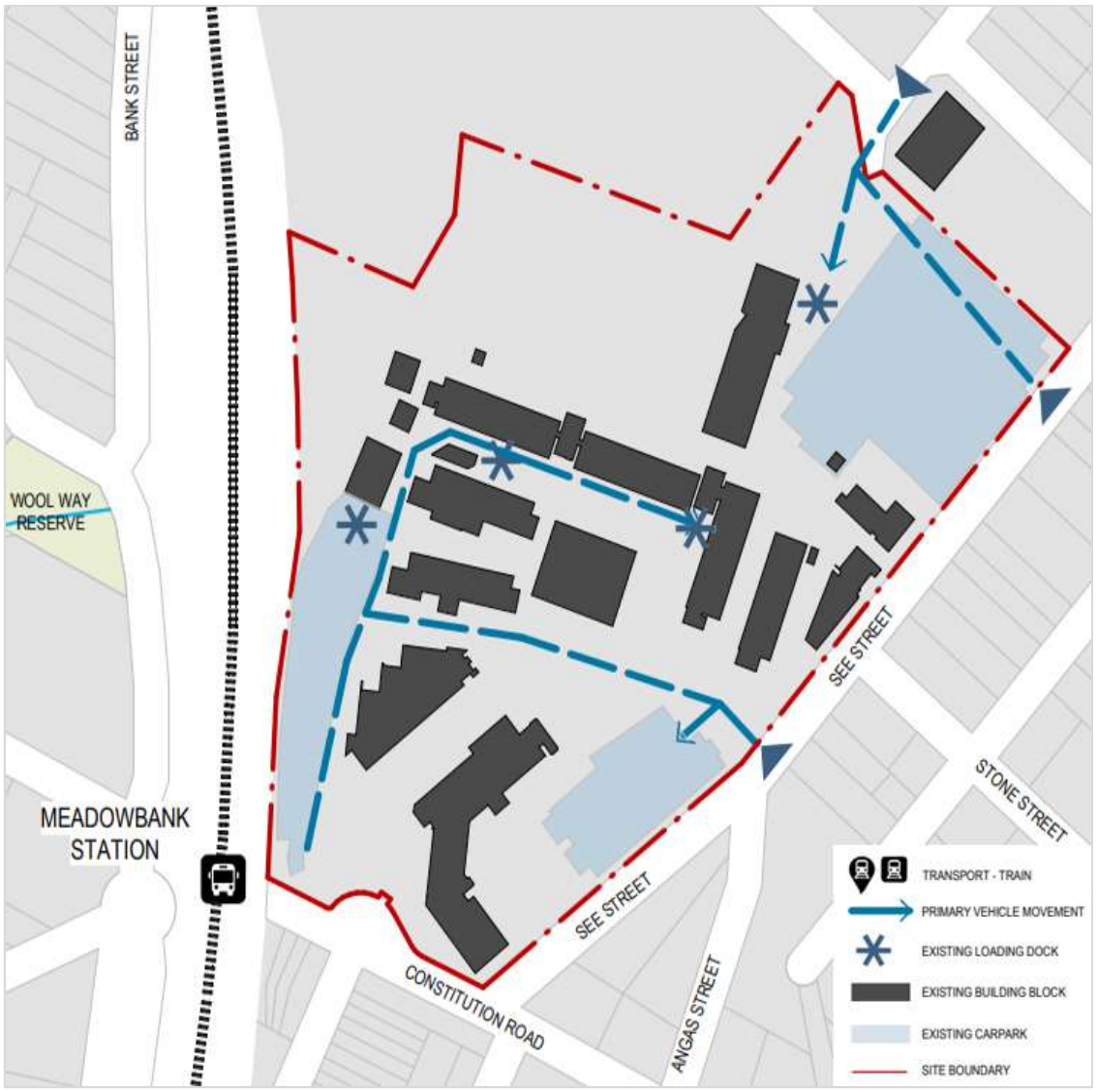

Figure 10: Vehicular access to the site and the broader TAFE Meadowbank campus (Source: Gray Puksand)

3.4 Building height, bulk and scale

The building is designed to respond to the significant sloping topography (east to west) across the site. The building will have a maximum height of 27.4 m (six storeys) at its western extent (adjacent to campus Building P) and will present as a 12 m high (two storey) building at its eastern extent and frontage to See Street.

The building will comprise a total GFA of 13,930 m² (excluding plant and circulation) that will include various learning spaces, seminar rooms, workshop areas, industry engagement spaces, digitally enabled spaces, amenities and end-of-trip facilities.

The building elevations are shown in Figure 11 to Figure 14. Detailed elevations are provided in the Architectural Plans at Appendix D.

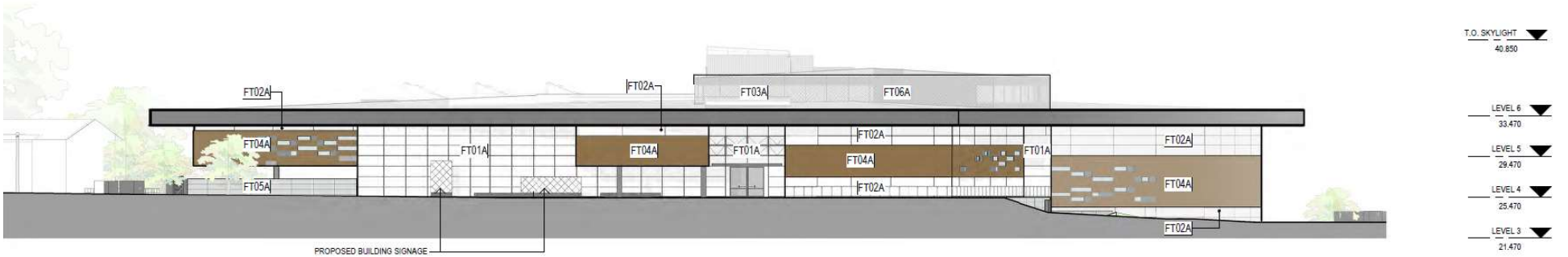

Figure 11: Eastern building elevation – view from See Street (Source: Gray Puksand)

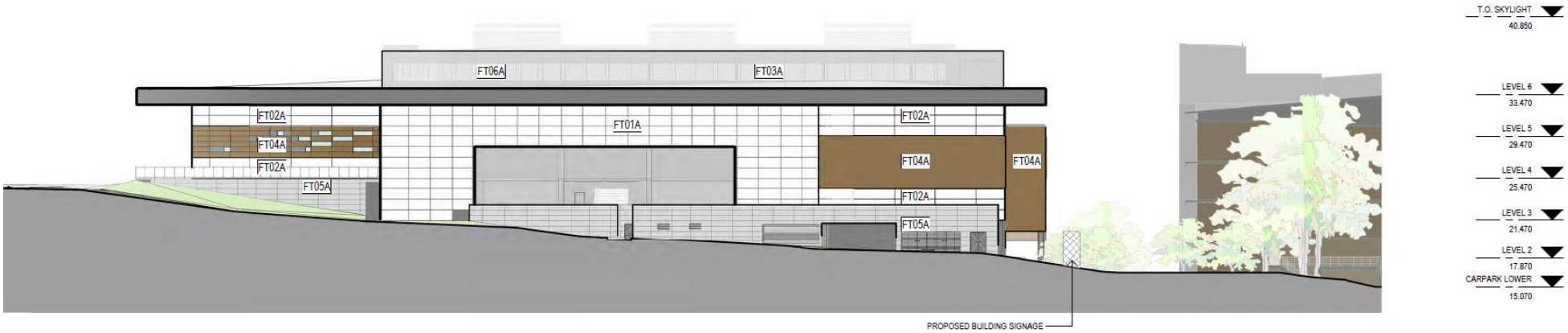

Figure 12: Northern building elevation (Source: Gray Puksand)

Figure 13: Western building elevation (Source: Gray Puksand)

Figure 14: Southern building elevation (Source: Gray Puksand)

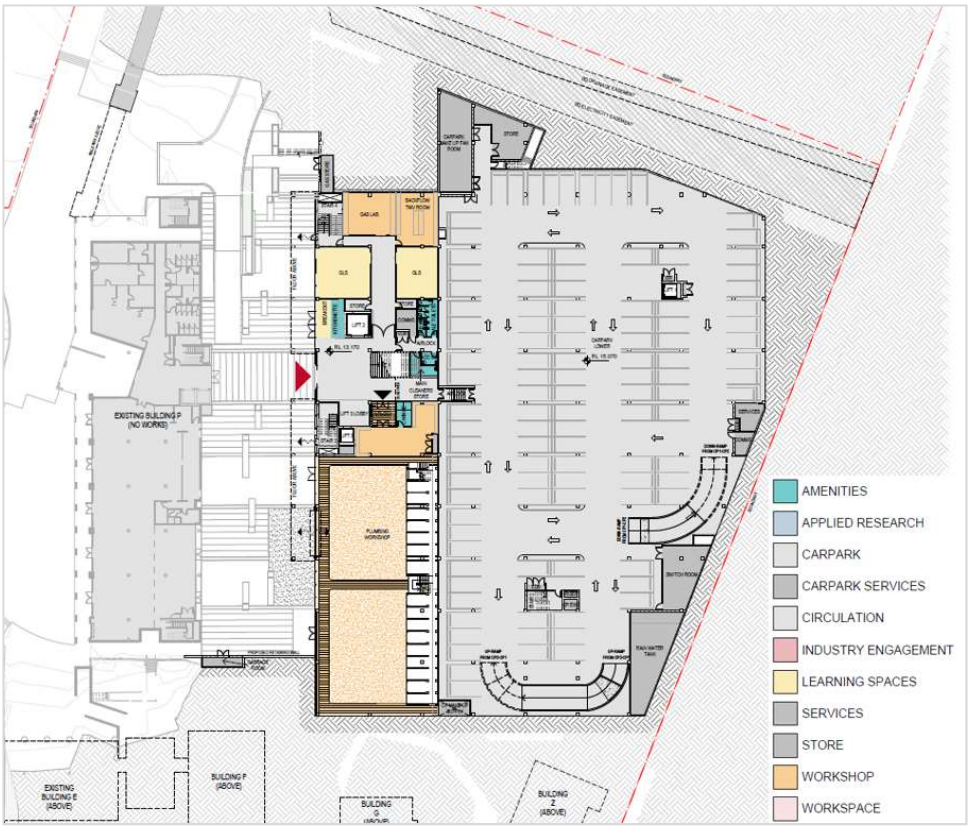

Figure 15: Level 1 floorplan (Source: Gray Puksand)

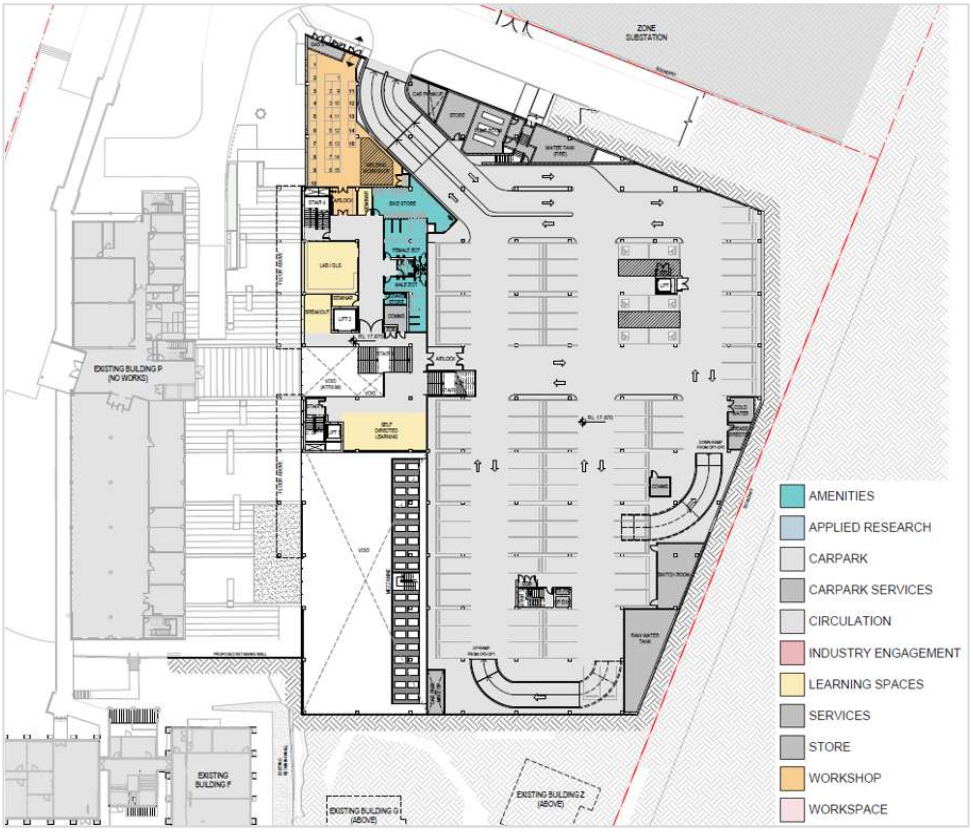

Figure 16: Level 2 floorplan (Source: Gray Puksand)

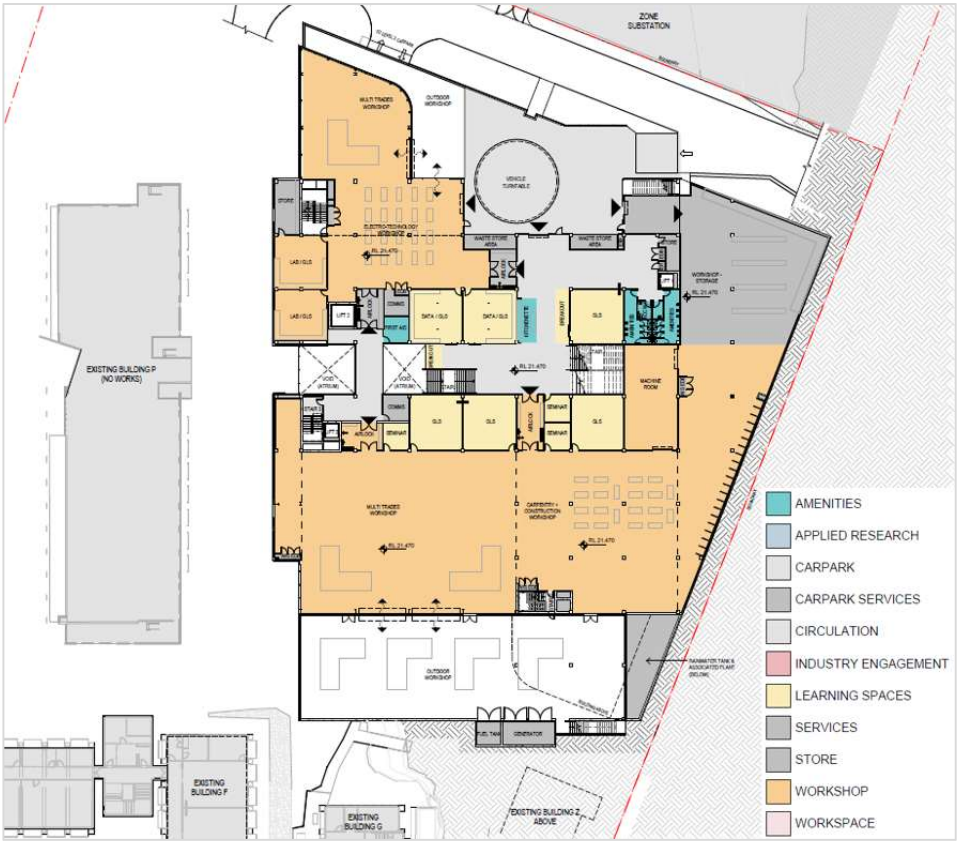

Figure 17: Level 3 floorplan (Source: Gray Puksand)

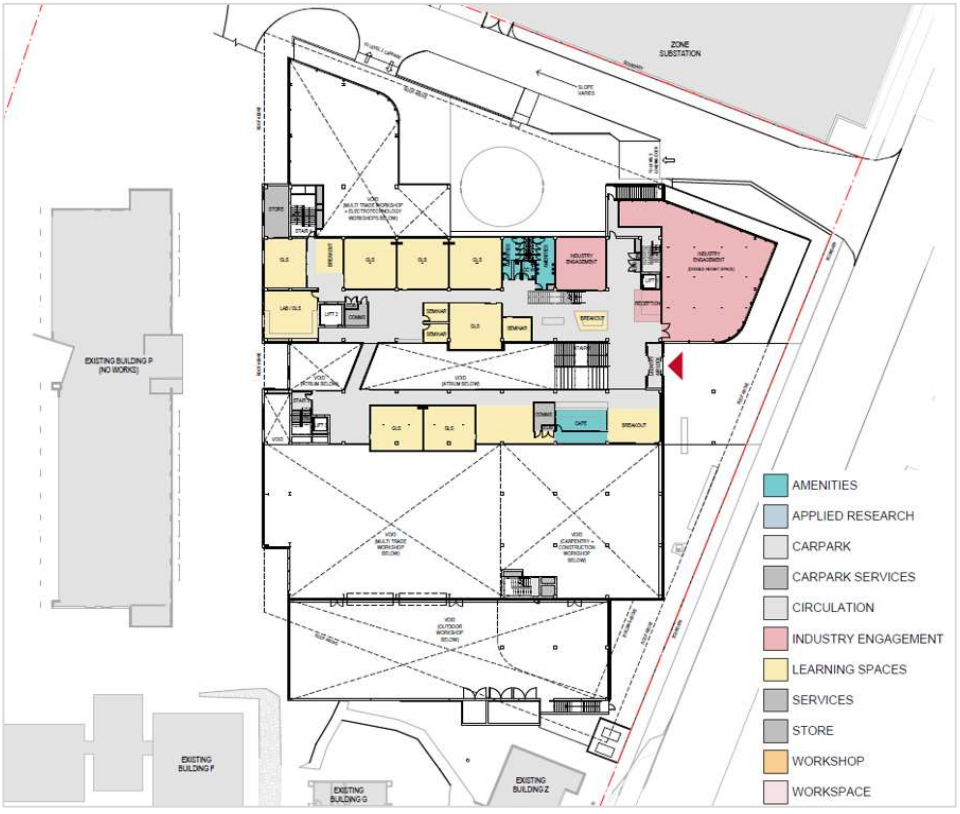

Figure 18: Level 4 floorplan (Source: Gray Puksand)

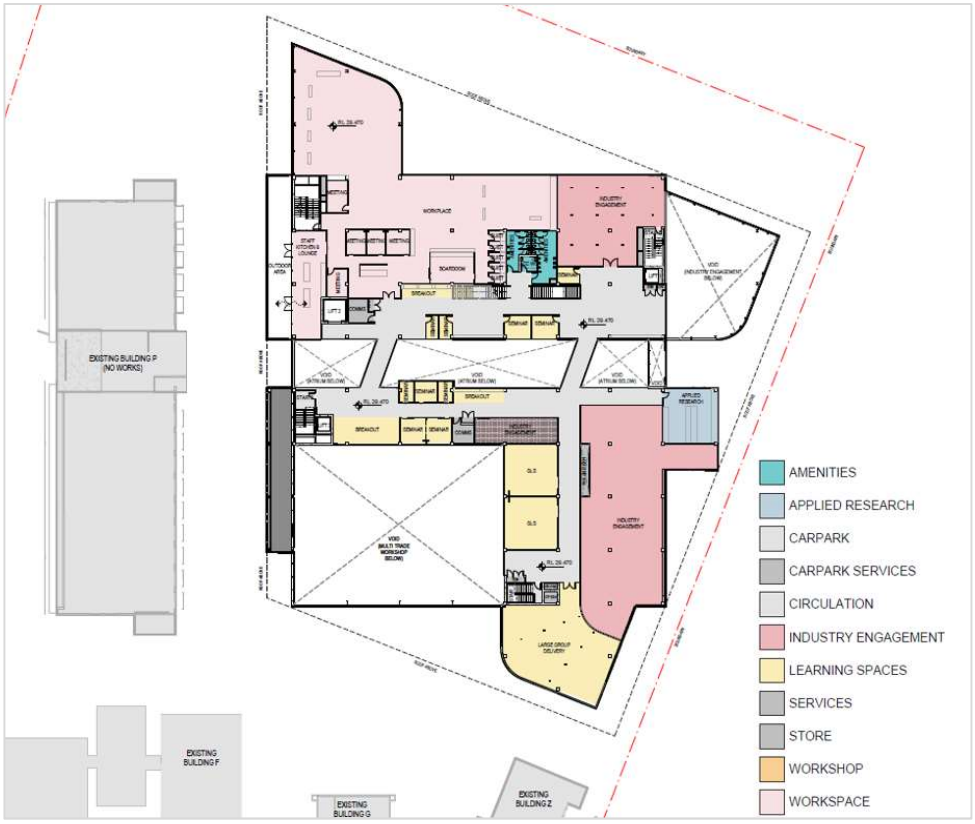

Figure 19: Level 5 floorplan (Source: Gray Puksand)

Figure 20: Level 6 floorplan (Source: Gray Puksand)

3.5 External materials and finishes

Examples of the architectural form and the external finishes to be incorporated as part of the development are shown in shown in Figure 21 and Figure 22, and are described below:

- 01 – cantilevered roof structure
- 02 – expressed timber lock ceiling
- 03 – metal screening to Level 6
- 04 – plugin solid elements
- 05 – window shroud articulation
- 06 – mullion systems and tints

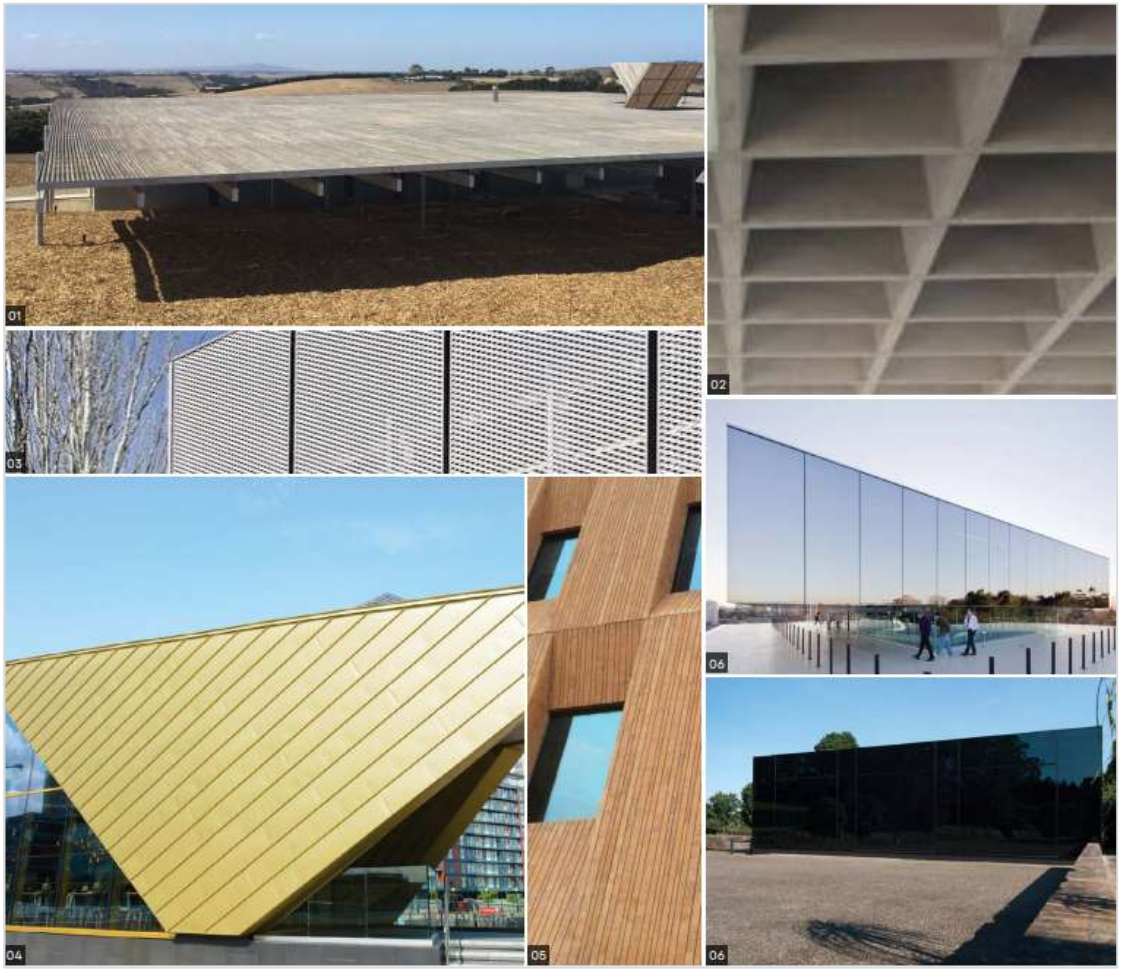

Figure 21: Architectural forms (Source: Gray Puksand)

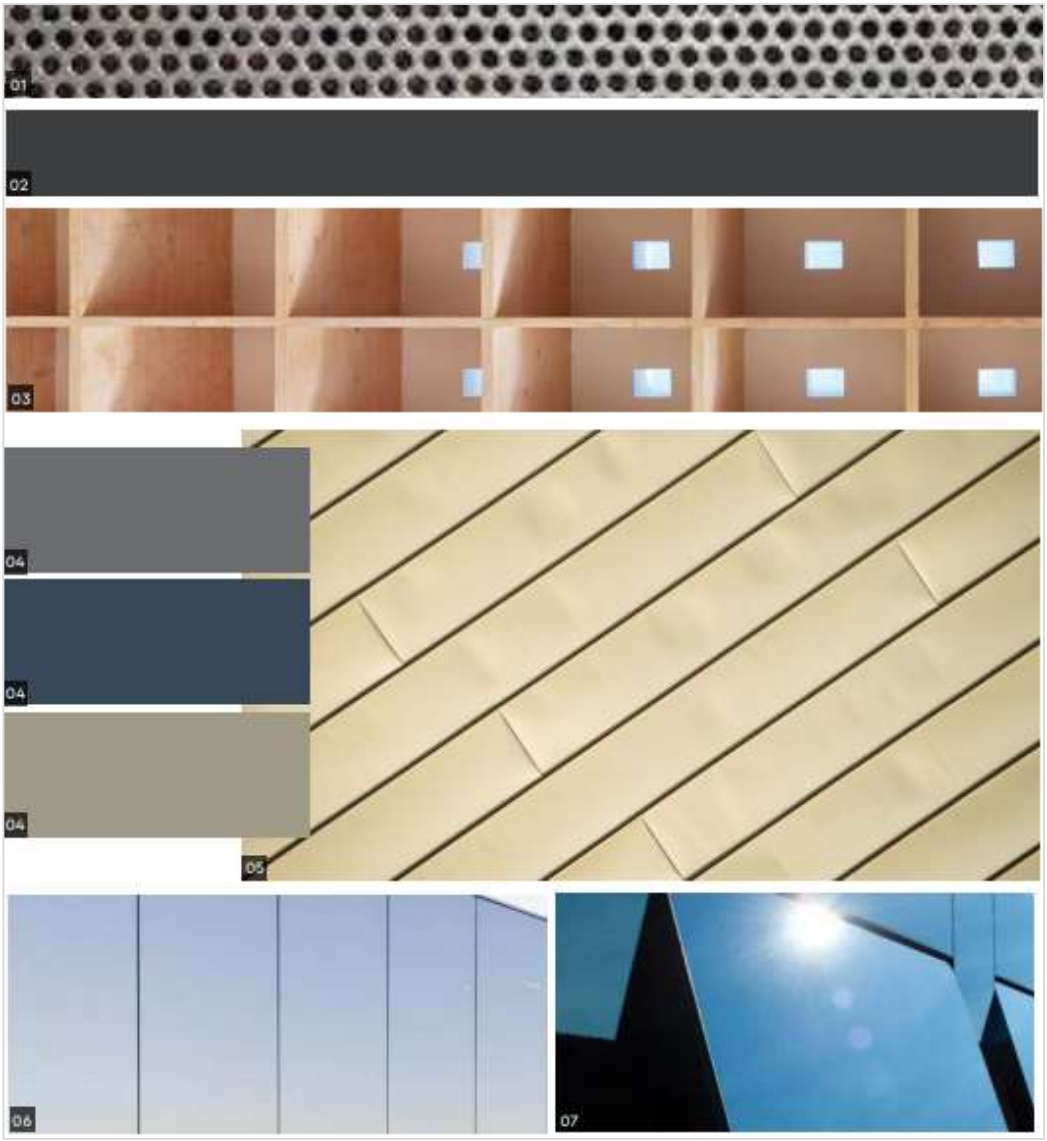

Figure 22: External finishes (Source: Gray Puksand)

3.6 Landscaping

A landscape design concept for the subject site and the broader TAFE Meadowbank campus has been prepared by Tract and is included at Appendix E.

The landscape design aims to retain the substantial tree plantings that currently exist on the site where possible. Trees and other areas of vegetation that are required to be removed (under a separate development approval process) are proposed to be replaced along the boundaries of the new building and will include the planting of various native tree species and shrubs.

Landscaping and plantings will be focused particularly along the See Street frontage and within the courtyard and laneway space that will be created between the new building and existing campus Building P.

The landscape design for the Multi-Trades and Digital Technology Hub is shown in Figure 23 and Figure 24.

Figure 23: Landscape design for the Multi-Trades and Digital Technology Hub (Source: Tract)

Figure 24: Example landscape design concepts for the TAFE Meadowbank campus (Source: Tract)

4 Project justification

4.1 Need for the proposal

The Multi-Trades and Digital Technology Hub will form part of the Meadowbank Education and Employment Precinct (the Precinct), announced by the NSW Government in June 2018 as a world-class education precinct that will provide a continuous pathway for students from school to vocational training or higher education. The Precinct will be created through the colocation of TAFE Meadowbank with the relocated and expanded Meadowbank Public School and Marsden High School.

In order for the Precinct to achieve its full potential and provide a benchmark for other education precincts across NSW, further investment in campus infrastructure and educational facilities is required. Bringing together industry and whole-of-lifecycle educational facilities provides a clear pathway for students to enter value-adding careers and more closely aligns skills development with industry requirements, including upskilling and reskilling to align with evolving industries.

The key drivers for the development of a new Multi-Trades and Digital Technology Hub on the site includes:

- the inability to meet increased enrolment demand at TAFE Meadowbank due to a lack of available physical space
- a change in the working relationship between DoE and TAFE NSW in relation to Externally delivered HSC Vocational Education Training Courses (EVET) to prevent the duplication of Vocational Education and Training (VET) infrastructure in schools
- the opportunity to leverage relationships with the private sector and universities to drive digital technology as part of VET and skills development in NSW.

Further to the above drivers for the development, the proposal will result in the orderly and economic use of land being an established education precinct that is zoned for educational infrastructure and associated uses.

The development also demonstrates strategic merit as it is consistent with the aims and objectives of the relevant strategic plans that apply to the site. The strategic justification for the proposal is further discussed in Section 6.

4.2 Proposal alternatives

Schedule 2, Part 3 of the *Environmental Planning & Assessment Regulation 2000* (EP&A Regulation) requires an analysis of any feasible alternatives to the carrying out of the development, including any feasible alternatives.

Current State

The TAFE NSW Sydney Region is broadly at spatial capacity and has limited opportunity for enrolment growth without additional capacity being added. Meadowbank is an ideal location for a step change increase in TAFE NSW's metropolitan capacity that requires specialist infrastructure (e.g. trades, IT and technology) due to its central location and proximity to established transport links.

TAFE NSW is currently experiencing waitlists in the Construction Trades (including plumbing, carpentry and joinery and electro-technology) across all Sydney and Western Sydney TAFE NSW campuses as these facilities are at capacity and unable to meet increasing demand.

Base Case (do nothing)

Following the divestment of the northern portion of the TAFE NSW Meadowbank campus to the Department of Education for the new Meadowbank Education Precinct Schools, TAFE NSW Meadowbank enrolment projections are capped at 14,700 enrolments from 2022 and beyond due to no further physical space to accommodate students. Inability to meet enrolment demand in skills areas with high growth forecasts is due to a lack of available physical space.

Option considered - a new Multi-Trades and Digital Technology Hub

The new Multi-Trades and Digital Technology Hub is a combined facility that will service both trades and digital technologies as stand-alone functions, but will also have the ability to enable collaboration between the two training environments for teachers, students and Industry participants/investors.

The new Multi-Trades section of the Hub will be an active learning environment co-locating disciplines under building, construction, engineering and manufacturing united by a focus on new digital technologies. Experienced students will have the opportunity to collaborate on a cross disciplinary Project. Students will have access to state-of-the-art facilities that can expand, contract and adapt to industry needs.

The Digital Technology section of Hub will be the heart of the technology driven TAFE NSW Meadowbank where facilities such as simulation rooms and dedicated technology workshops will allow students to develop applicable software and hardware expertise to face an increasingly digital workforce. There will be a focus on industry and academic engagement and the opportunity to pilot new EVET programs for NSW schools.

The Meadowbank Education Precinct will offer a unique environment for collaborative learning for school (primary and secondary), TAFE NSW and University students. This will be a centre for applied research where students from all institutions co-create knowledge together with industry specialists and educators. The Hub will respond to technology trends materialised by Industry 4.0 and Industry 5.0, and prototype technology-based solutions for technology-disrupted industries including advanced manufacturing, agribusiness, engineering and supply chain. The new facility will have capacity to meet the future 3,000 student enrolment demand.

5 Consultation

TAFE NSW has undertaken extensive engagement and consultation with Council, State Government authorities, the TAFE Meadowbank community and the surrounding local community throughout the preparation of the EIS.

The engagement and consultation activities have been carried out in accordance with the requirements of the SEARs and will continue to be carried out during the public exhibition process and assessment of the SSD application.

During preparation of the EIS, TAFE NSW has consulted directly with the following agencies:

- Department of Planning, Industry and Environment
- City of Ryde Council
- Government Architect NSW (through the State Design Review Panel process)
- Transport for NSW
- Roads and Maritime Services
- Ausgrid

Extensive engagement and consultation has also been carried out with the local community and students and staff of the TAFE Meadowbank campus. The following activities were used to engage with these various stakeholder groups:

- a project email and hotline
- launch postcards and posters
- community newsletters
- staff newsletters
- community information and feedback sessions
- staff information and feedback sessions
- student pop-up information session
- technical reference groups
- design workshops
- market sounding

A detailed summary of the engagement and consultation activities that have been conducted throughout the preparation of the EIS is provided in the Stakeholder Engagement Outcome Report at Appendix V.

6 Strategic planning context

6.1 State government policies

6.1.1 State Priorities

NSW Making it Happen sets out the Premier's State Priorities to grow the economy, deliver infrastructure and improve health, education and other services across NSW.

In June 2019, the Premier provided an update on the Premier's Priorities. The NSW Government's key areas of focus includes the provision of a strong economy, the highest quality education and well connected communities. All of the Premier's Priorities are listed below:

- Bumping up education results for children
- Increasing the number of Aboriginal young people reaching their learning potential
- Protecting our most vulnerable children
- Increasing permanency for children in out-of-home care
- Reducing domestic violence reoffending
- Reducing recidivism in the prison population
- Reducing homelessness
- Improving service levels in hospitals
- Improving outpatient and community care
- Towards zero suicides
- Greener public spaces
- Greening our city
- Government made easy
- World class public service

The proposal is consistent with the Premier's priorities to deliver a better quality educational establishment with improved facilities and well connected communities.

The proposal will also create employment opportunities during construction and operation of the development which will contribute to the provision of a strong economy.

6.1.2 Greater Sydney Region Plan

The *Greater Sydney Region Plan* (Region Plan) outlines how Greater Sydney will manage growth and change in the context of social, economic and environmental matters. It sets the vision and strategy for Greater Sydney that is to be implemented at a local level through District Plans.

The overriding vision for Greater Sydney in the Region Plan is to rebalance Sydney into a metropolis of three unique but connected cities; an Eastern Harbour City, the Western Parkland City and the Central River City with Greater Parramatta at its heart.

The Region Plan provides broad Priorities and Actions which focus on the following 4 key themes:

- Infrastructure and collaboration;
- Liveability;
- Productivity; and
- Sustainability

The following objectives outlined in the Region Plan are of particular relevance to the development:

Objective 6 provides for services and infrastructure to meet communities' changing needs.

The Region Plan acknowledges the Education SEPP and the need for additional educational infrastructure with a focus on good design.

The Education SEPP has been established to make it easier for education providers (such as TAFE) to build new facilities and improve existing facilities through a streamlined approval process. The application for the Multi-Trades and Digital Technology Hub has been prepared having considered the development controls as they apply to TAFE establishments, as set out in the Education SEPP.

Objective 21 aims to provide internationally competitive health, education, research and innovation precincts.

The proposed Multi-Trades and Digital Technology Hub will be established as part of the broader Meadowbank Education and Employment Precinct comprising primary, secondary and tertiary education facilities. The Region Plan acknowledges tertiary educational facilities as significant contributors to Greater Sydney's economy. The development will provide a modern and innovative learning facility and will contribute to the economy of Greater Sydney by creating jobs and providing capital investment in the Meadowbank Education and Employment Precinct.

6.1.3 State Infrastructure Strategy 2018-2038

The *State Infrastructure Strategy 2018-2038* (SIS) sets out the NSW Government's infrastructure needs and priorities over the next 20 years to support a growing population and a growing economy.

The SIS outlines sector-based infrastructure directions, including directions that relate to education. The overarching strategic direction for education is to deliver infrastructure to keep pace with student numbers and to provide modern, digitally-enabled learning environments for all students.

The SIS acknowledges that much of TAFE NSW's current asset portfolio is no longer fit-for-purpose and that many facilities have inefficient, inflexible layouts that are unable to use the latest teaching and learning technology. The SIS therefore recommends the preparation and implementation of a 20-year TAFE NSW Infrastructure Strategy to transform the existing asset portfolio and deliver additional training services across NSW.

The TAFE NSW Infrastructure Strategy is currently being prepared and is forecast to be completed by the end of June 2020. The implementation of an Interconnected Training Network will form part of the Strategy and is expected to redefine the way teaching, learning and community interaction occurs at TAFE NSW facilities.

The proposed development is consistent with the SIS as it provides for new, modern facilities to support teaching and learning at the TAFE NSW Meadowbank Campus and responds to changes in student demand. Further, the proposed Multi-Trades and Digital Technology Hub will provide space for innovative educational and training methods that make use of the latest digital technology.

6.1.4 Future Transport Strategy 2056

The *Future Transport Strategy 2056* (Transport Strategy) is a 40-year vision for the creation and maintenance of a world-class, safe, efficient and reliable transport system. The Transport Strategy focuses on a shift away from private motor vehicle use towards public and active transport alternatives in alignment with productivity, liveability and sustainability outcomes. It aims to align the provision of transport services with other key infrastructure investments to support the 30-minute city model where customers can access their nearest metropolitan centre by public transport within 30-minutes.

The campus is strategically located and is accessible from Macquarie Park and Parramatta within 30-minutes by public transport, supporting the 30-minute city model. Further, the development seeks to include travel demand management measures and a Green Travel Plan to outline initiatives to reduce the need and reliance on private motor vehicles.

The proposed development is consistent with the Transport Strategy as it is adequately serviced by public transport including bus and train services and is therefore likely to encourage students and staff to use active and public transport modes over private motor vehicles.

6.1.5 North District Plan

The *North District Plan* (District Plan) is a 20-year plan to manage growth in the context of economic, social and environmental matters in the North District and includes the City of Ryde LGA. The District Plan identifies a number of Planning Priorities to achieve a liveable, productive and sustainable future for the district.

The proposed development is consistent with the District Plan as it will:

- contribute to the growth and investment in an existing education establishment;
- provide modern training facilities that support higher level skills;
- provide additional employment opportunities and course offerings; and
- contribute to the economic productivity of the Meadowbank Precinct and the City of Ryde LGA.

6.1.6 Better Placed

Better Placed was developed by the Government Architect NSW in 2017 and is an integrated design policy for the built environment of NSW. *Better Placed* recognises the importance of good design in making cities and towns more appealing, liveable and successful for the communities that live there. The purpose of *Better Placed* is to achieve better places for the people of NSW through seven distinct objectives that ensure the creation of useable, user-friendly, enjoyable and attractive places and spaces.

The proposed development is consistent with *Better Placed* as it aims to integrate good design principles to ensure the creation of a healthy, responsive, integrated, equitable and resilient space. The alignment of the development with the objectives of *Better Placed* is outlined below:

Objective 1: Better fit – contextual, local and of its place
The design for the building overcomes contextual challenges to fit within its locality and remain sympathetic to place. Each of the four facades actively respond to the adjacent contextual conditions. The development responds to the nearby single-storey residences by

incorporating a height limit of two storeys fronting See Street, deep angled setbacks to reduce its mass and sympathetic materials colour selection.

Objective 2: Better performance – sustainable, adaptable and durable
The design performs in a sustainable manner and creates positive environmental benefits through a roof top photovoltaic array which assists in energy generation and an integrated hydraulic system enabling water recycling and reuse. The atrium effect created by the main spine of the building allows controlled natural daylight through the roof whilst simultaneously providing a natural chimney effect for passive cooling and ventilation.

Objective 3: Better for community – inclusive, connected and diverse
The design of the building is inclusive and connected by establishing links with its surrounds, allowing students and visitors to move freely around and through the building. In particular, the civic forecourt provides a shared domain for social engagement, events, interaction and invitation for further education. The design of the building also adds diversity to the surrounding community infrastructure and the facilities.

Objective 4: Better for people – safe, comfortable and liveable
The building is designed with people at its centre by connecting and creating social spaces both inside the building and across the adjacent landscaped spaces. The workspace environments in combination with the extensive natural daylight and views work together to create a comfortable environment that promotes health and wellbeing for students and visitors alike. The design creates a community interface that is safe and liveable through clear view lines, open social and well-lit external spaces with generous street setbacks. This combines to provide an urban response that protects people from harm.

Objective 5: Better working – functional, efficient and fit for purpose
The interior architecture is driven by a desire to create a legible building that adds value to a campus environment, conceived with core principles of practicality, purpose and adaptability. The efficient grid arrangement allows the spaces to be reconfigurable and the services integration support this. The built form has an inherent sense of transparency and permeability, enhancing functionality and efficiency.

Objective 6: Better value – creating and adding value
Sited on an established educational campus, the new facility leverages the existing characteristics and qualities of the adjacent TAFE buildings and recreational spaces to increase social, economic and environmental benefits. With the construction of the new Meadowbank Education Precinct Schools in close proximity to the new facility, this urban design contribution will aid in the establishment of a lifelong learning precinct with ongoing social, economic and environmental benefits for the community.

Objective 7: Better look and feel – engaging, inviting and attractive
The building design is sympathetic to its location whilst encouraging community engagement and interaction. The design draws people in and creates a welcoming and attractive arrival point for visitors, adding to the vibrancy of the campus. The building engages with the community through acting as a gallery for the public, ensuring inevitable learning opportunities within the wider community. Industry engagement spaces have been created for exhibitions and events, further enlivening and activating the streetscape and campus.

NSW State Design Review Panel

The NSW State Design Review Panel (SDRP) provides independent advice on the design quality of development proposals in NSW to inform the formal recommendations of Government Architect NSW to SSD application that are submitted to DPIE.

TAFE NSW has taken part in the NSW SDRP Pilot Design Review program as part of the preparation of the EIS. The program has been established for the NSW SDRP to provide independent and impartial advice on the design quality of the development proposal. It is intended for the early review process to provide both applicants and decision-makers a degree of progressive certainty and supports better design outcomes.

Design refinements that have been made to the development in response to comments received during the NSW SDRP process are discussed at Section 8.1.

6.1.7 Sydney's Cycling Future 2013

Sydney's Cycling Future 2013 (Cycling Strategy) outlines how cycling will be planned for and prioritised in Sydney. Its overarching goal is to make cycling a safe, convenient and enjoyable transport option for short trips. The Cycling Strategy outlines the need for bicycling infrastructure and end-of-trip facilities to be integrated into urban development projects.

The development is consistent with the Cycling Strategy as the requirements for people utilising bicycles to travel to and from the campus will be included in the planning, design and construction of the Multi-Trades and Digital Technology Hub. The development will include end of trip facilities including showers, lockers and change rooms to encourage the integration of cycling for short trips.

6.1.8 Sydney's Walking Future 2013

Sydney's Walking Future 2013 (Walking Strategy) focuses on promoting walking as a viable and attractive option, especially for travel to and from work and school. Its overarching goal is to encourage people to walk through actions that make it a more convenient, better connected and safer mode of transport. The Walking Strategy aims to prioritise the needs of pedestrians in the planning, design and construction of new urban development.

The proposal is consistent with the Walking Strategy as the primary pedestrian access route to the campus via Constitution Road is located adjacent to Meadowbank Train Station, making walking viable for the short trip from the station to the campus. This aligns with the Walking Strategy's aim to increase walking trips to schools and universities. Further, the development is committed to improving the quality and consistency of wayfinding signage to further encourage walking as a safe alternative transport mode.

6.1.9 Sydney's Bus Future 2013

Sydney's Bus Future 2013 (Bus Strategy) focuses on delivering simpler, faster and better connected bus services. This involves providing fast, frequent and reliable connections on high demand routes and ensuring bus services connect seamlessly with other transport modes. The Bus Strategy also aims to provide new and upgraded rapid routes in Parramatta and surrounding areas to support the growth of Parramatta as Sydney's second CBD. The overarching aim of the Bus Strategy is to make Sydney's bus network more efficient, convenient and cost-effective.

The campus is currently serviced by a number of public bus services that provide connection to surrounding local centres and the Parramatta and Sydney CBDs. The proposal is consistent

with and supports the Bus Strategy as it is likely to increase patronage on key bus routes surrounding the campus, increasing the viability and effectiveness of bus transport investments.

6.2 Other relevant plans and policies

6.2.1 Meadowbank Education and Employment Precinct Masterplan

To ensure the most efficient use of public infrastructure, the GSC is coordinating the planning of education, infrastructure and employment projects in the Meadowbank Education and Employment Precinct. The GSC is developing a Masterplan to ensure the precinct is an integrated, accessible and liveable place.

The (preliminary) Masterplan sets out sets out a precinct-level strategic framework for the future land uses and key developments within the Precinct, including the Multi-Trades and Digital Technology Hub and the new Meadowbank Education Precinct Schools.

The key objectives and considerations for the precinct, as outlined in the draft Master Plan, include:

- the successful operation of the new schools and improved TAFE within the community
- mobility through the precinct
- a new east-west public pedestrian connection linking to the precinct
- pedestrian and cycle access improvements to serve both the community and the schools
- bus routes for schools, TAFE and public services
- student drop-off locations for the schools and TAFE students
- street modifications to improve vehicle access in and out of the precinct
- public domain improvements
- interface opportunities between the schools, TAFE and the community
- renewal and reuse options for recreation, community, and employment uses of the Sydney Water site and the area surrounding Meadowbank Railway Station
- transformation of the employment lands to closely integrate with the expansion of the TAFE program on the Meadowbank Campus.

The draft Masterplan will also deliver on the GSC's District Plan priorities in relation to infrastructure and collaboration, liveability, productivity and sustainability.

The draft Masterplan is currently on public exhibition and is shown in Figure 25.

Figure 25: Draft Meadowbank Education and Employment Precinct Master Plan (Source: GSC)

6.2.2 Economic Development Plan 2015–2019

The City of Ryde Council's *Economic Development Plan 2015-2019* (Economic Plan) has been prepared to stimulate the local economy and to support jobs and business growth. The Economic Plan was adopted by Council in March 2015 and sets out the vision, goals and objectives to foster new small business, support employment and training and encourage investment in the City of Ryde LGA.

The proposed development is consistent with the Economic Plan as it supports the growth of construction and technology based businesses and delivers new and improved training and education facilities. Further, the proposal supports the City of Ryde LGA as an important employment and education hub through the creation of jobs and capital investment in the Meadowbank Education and Employment Precinct.

The proposal will enable further vocational training and work experience opportunities for students and job seekers. The proposal strengthens employment pathways through broader course delivery and colocation of the expanded Meadowbank Public and Marsden High Schools.

6.2.3 Draft Local Strategic Planning Statement

All councils in the Greater Sydney region have been tasked by the NSW Government to prepare a Draft Local Strategic Planning Statement (LSPS). The City of Ryde Council released its *Draft Local Strategic Planning Statement 2019* (Draft LSPS) for public exhibition from 1 July 2019 to 12 August 2019. The Draft LSPS is a 20-year plan which sets out Council's vision and planning priorities for the City of Ryde LGA and the actions Council will take to achieve them.

The TAFE Meadowbank site is identified within the Shepherds Bay, Meadowbank precinct of the Draft LSPS. The vision for desired future character of the precinct, as described in the Draft LSPS, is as follows:

Meadowbank will continue to evolve as a Transit Oriented Development (TOD) with higher density housing within a five-minute walk of the train station and ferry wharf, in a desirable riverfront location. Much of the centre has been recently developed, remaining sites will need to ensure that an appropriate mix of uses support the precinct. Infrastructure improvements will increase safety, manage traffic flow and improve access to open space and services. In particular, the Meadowbank Education Precinct will deliver a new school and revitalised TAFE facilities with supporting open space also accessible and connected to the residential precinct. Meadowbank will complement strategic employment centres at Macquarie Park, Rhodes, Olympic Park and Parramatta.

Planning Priority IN1 of the Draft LSPS is requires sufficient infrastructure to support current and future population growth. The proposal is consistent with this priority as it will deliver a new educational facility in the form of a Multi-Trades and Digital Technology Hub, providing an active and engaging learning environment to support the current and future population.

The Draft LSPS also sets out key targets including the provision of key community infrastructure that is accessible within 30 minutes by either private or public transport. The development is strategically located close to Meadowbank Railway Station and is serviced by a number of public bus routes.

6.2.4 TAFE NSW Strategic Plan 2016–22

The *TAFE NSW Strategic Plan 2016-22* (Strategic Plan) outlines initiatives required to ensure TAFE remains a competitive business leading the market in skills provision for future jobs and industries.

The Strategic Plan sets out four strategic goals to drive the modernisation of TAFE establishments in NSW. These include:

- Goal 1: Skill the State's workforce of the future as the provider of choice
- Goal 2: Be a contemporary, commercial and sustainable business
- Goal 3: Serve our local communities
- Goal 4: Develop a customer-driven proud and productive TAFE NSW team.

The development is consistent with the Strategic Plan as the proposed works will respond to the cultural change and strategic goals TAFE NSW aims to achieve.

The Meadowbank Education and Employment Precinct will benefit from a new state-of-the-art facility and the delivery of new vocational training and work experience opportunities for students. This will contribute to the Precinct more broadly being a contemporary, commercial and sustainable educational facility.

6.2.5 Healthy Urban Development Checklist

The *Healthy Urban Development Checklist* (Checklist) was developed by NSW Health in 2009 assist health professionals, planners and assessors to understand the health effects of a planning proposal and how they can be improved to provide better health outcomes. The Checklist plays a key role in realising health, sustainable communities across NSW.

The proposal is consistent with the key outcomes of the Checklist as outlined below.

Physical Activity

The development is in close proximity to public transport and within walking distance of a mixed-use retail and commercial area encouraging incidental physical activity. The development promotes opportunities for walking, cycling and other forms of active transport through the provision of end of trip facilities and Green Travel Plan that outlines the initiatives to reduce the need and reliance on private vehicles.

Quality Employment

The development helps to increase access to appropriate job training within the Central City to increase the skills of workers to access a range of quality employment opportunities. The location of the TAFE aligns with the checklist objective for places of education to be in close proximity of employment centres, residential areas and public transport nodes.

Safety and Security

The development utilises CPTED principles to promote natural surveillance, clear sightlines and easy movement across the campus.

Social Infrastructure

The development has reasonable access to a mix of facilities including local shopping, services, community, health, recreation, leisure, entertainment and cultural facilities. It responds to community needs by delivering a better-quality educational establishment with improved facilities.

Social Cohesion and Connectivity

The development encourages social interaction and connection by promoting equitable access to educational resources and equipping local residents with the skills to work within their local communities.

7 Statutory planning context

7.1 Environmental Planning and Assessment Act 1979

The EP&A Act sets out the statutory planning framework for NSW. The Act aims to promote the orderly and economic use and development of land, facilitate ecologically sustainable development and integrate economic, environmental and social considerations as part of the decision-making processes for environmental planning and assessment matters.

Section 4.36 of the EP&A Act enables particular developments to be declared SSD by means of a State Environmental Planning Policy or by order of the Minister for Planning and Public Spaces (the Minister). The development meets the criteria for SSD as it is for the purpose of a tertiary institution and has a CIV in excess of $30 million, as defined under Schedule 1 of the SRD SEPP (discussed further at Section 7.4.1).

This report responds to the requirements of section 4.12(8) of the EP&A Act which requires a development application for SSD to be accompanied by an EIS.

7.1.1 Objects of the EP&A Act

Development under the EP&A Act must have regard to the objects of the Act, as set out under Section 1.3 of the Act. The development is considered to be consistent with the objects of the Act, as outlined in Table 5 below.

Requirement	Consideration
(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,	The development promotes the social and economic welfare of the community by providing enhanced educational facilities and through the provision of employment opportunities during construction and operation of the development. The development will not significantly impact on 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,	This EIS provides information on the relevant economic, environmental and social impacts of the development to enable the consent authority to undertake a thorough environmental assessment and assist in its decision-making on the application.
(c) to promote the orderly and economic use and development of land,	The development promotes the orderly and economic use of the land by proposing a permissible use (being for an educational establishment) in the SP2 Infrastructure (Educational Establishment) zone.
(d) to promote the delivery and maintenance of affordable housing,	Affordable housing does not form part of the application.
(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,	A BDAR waiver has been granted under the *Biodiversity Conservation Act 2016* on the basis that the development is "not likely to have any significant on biodiversity values" (Section 7.3 and Appendix S).
(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),	Heritage assessments carried out at the site have determined there to be no significant European or Aboriginal cultural heritage

Requirement	Consideration
	features at the site, as discussed at Section 8.5.
(g) to promote good design and amenity of the built environment,	The built form of the development is consistent with the surrounding locality, presenting as a two storey building to See Street and responds to the issues raised by the NSW SDRP. The development is considered to promote good design and amenity, as discussed at Section 8.1.
(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,	The development will be constructed in accordance with any conditions of consent issued by the consent authority and the relevant requirements that relate to health and safety, construction and maintenance.
(i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,	This EIS is submitted to DPIE to enable an environmental assessment of the application. It is expected that the EIS will be referred by DPIE to Council and other State agencies for further assessment and comment.
(j) to provide increased opportunity for community participation in environmental planning and assessment.	As part of DPIE's assessment of the application, the EIS will made publicly available with the community, Council and State agencies invited to provide a submission on the proposal. Any submissions received will be addressed as part of a Response to Submissions Report.

Table 5: Objects of the EP&A Act

7.1.2 Section 4.15 Matters for Consideration

The consent authority is required to take into consideration the matters listed under section 4.15 of the EP&A Act when determining a development application. An evaluation of the proposed development against the provisions of Section 4.15(1) of the EP&A Act is provided in Table 6 below.

Requirement			Consideration
(a) the provisions of:			
	(i)	*any environmental planning instrument, and*	The environmental planning instruments relevant to the site are addressed at Section 7.4.
	(ii)	*any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Planning Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and*	Draft environmental planning instruments relevant to the site are addressed at Section 7.4.
	(iii)	*any development control plan, and*	Under clause 11 of the SRD SEPP, development control plans do not apply to SSD. Notwithstanding, certain provisions under the Ryde Development Control Plan 2014 have

Requirement	Consideration
	been considered in the preparation of the development design, specifically in relation to car parking, stormwater management and waster sensitive urban design.
(iiia) any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4, and	No planning agreement or draft planning agreement has been entered into as part of this application.
(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph),	The EP&A Regulation is addressed at Section 7.2.
(v) (Repealed)	N/A
that apply to the land to which the development application relates,	
(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts I the locality,	The likely impacts of the development, including environmental impacts on both the natural and built environments, social and economic impacts are addressed at Section 8.
(c) the suitability of the site for the development,	The suitability of the site for the development is considered at Section 0.
(d) any submissions made in accordance with this Act or the regulations,	Any submissions received on the application will be considered and addressed as part of a Response to Submission report.
(e) the public interest.	The development is in the public interest as it will provide for a major new tertiary educational facility on a site that is zoned for such purposes and will contribute to the broader vision of the Meadowbank Education and Employment Precinct as a world-class education precinct.

Table 6: Section 4.15 Matters for Consideration

7.2 Environmental Planning and Assessment Regulation 2000

The EP&A Regulation sets out the key operational provisions for the NSW planning system. These provisions relate to the making of development applications, requirements for environmental impact assessments, notification requirements, building regulations and other miscellaneous matters.

This EIS has been prepared in accordance with form and content requirements of Schedule 2 of the EP&A Regulation. An overview of how the requirements of the EP&A Regulation have been satisfied is included in Table 7 below.

Environmental Planning and Assessment Regulations 2000	EIS Reference
An environmental impact statement must also include each of the following:	
(a) a summary of the environmental impact statement,	Executive Summary
(b) a statement of the objectives of the development, activity or infrastructure,	Section 4
(c) an analysis of any feasible alternatives to the carrying out of the development, activity or infrastructure, having regard to its objectives, including the consequences of not carrying out the development, activity or infrastructure,	Section 4
(d) an analysis of the development, activity or infrastructure, including: *(i) a full description of the development, activity or infrastructure, and*	Section 3 and Section 8

Environmental Planning and Assessment Regulations 2000	EIS Reference
(ii) a general description of the environment likely to be affected by the development, activity or infrastructure, together with a detailed description of those aspects of the environment that are likely to be significantly affected, and *(iii) the likely impact on the environment of the development, activity or infrastructure, and* *(iv) a full description of the measures proposed to mitigate any adverse effects of the development, activity or infrastructure on the environment, and* *(v) a list of any approvals that must be obtained under any other Act or law before the development, activity or infrastructure may lawfully be carried out,*	
(e) a compilation (in a single section of the environmental impact statement) of the measures referred to in item (d) (iv),	Executive Summary
(f) the reasons justifying the carrying out of the development, activity or infrastructure in the manner proposed, having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development set out in subclause (4). *Note. A cost benefit analysis may be submitted or referred to in the reasons justifying the carrying out of the development, activity or infrastructure.*	Section 8
(1) Subclause (1) is subject to the environmental assessment requirements that relate to the environmental impact statement	N/A
(2) Subclause (1) does not apply if:	
(a) the Secretary has waived (under clause 3(9)) the need for an application for environmental assessment requirements in relation to an environmental impact statement in respect of State significant development, and	N/A
(b) the conditions of that waiver specify that the environmental impact statement must instead comply with requirements set out or referred to in those conditions.	N/A

Table 7: Requirements of the EP&A Regulation

7.3 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) aims to maintain the diversity and quality of ecosystems and enhance their capacity to adapt to change and provide for the needs of future generations.

In accordance with section 7.9(2) of the BC Act, SSD applications are required to be accompanied by a BDAR. However, a BDAR waiver may be granted should it be determined by the Planning Agency Head (DPIE) and the Environment Agency Head (Environment, Energy and Science Group (EESG)) that the proposed development is not likely to have any significant impact on biodiversity values.

A BDAR waiver request was prepared by a qualified ecologist in accordance with the requirements of the BC Act and submitted to DPIE as part of the request for SEARs (EMM, May 2019). The BDAR waiver request confirmed that there are no naturally occurring threatened flora, fauna or ecological communities on the site and that there is no suitable habitat for any threatened species that are predicted to occur in the locality. The report confirmed that the development is unlikely to have a significant impact on biodiversity.

On 22 August 2019, a BDAR waiver was granted by DPIE and EESG. In its letter to the Applicant, DPIE advised that any amendments to the development may require a further waiver to be sought and issued.

Following the changes to the project description to include the Digital Technology Hub and the subsequent reissuing of the SEARs, DPIE advised the Applicant that a new BDAR waiver request was required. Consequently, a revised BDAR waiver request was prepared by EMM (dated September 2019) and was lodged with DPIE on 16 September 2019.

A new BDAR Waiver was granted by DPIE and EESG on 25 September 2019. In its letter to the Applicant, DPIE advised that the development is "not likely to have any significant on biodiversity values" and does not require a BDAR.

7.4 Environmental planning instruments

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

The SRD SEPP aims to identify development that is SSD, State significant infrastructure, critical State significant infrastructure and regionally significant development.

The proposal meets the criteria of SSD under Schedule 1, clause 15(3) of the SRD SEPP as it is development for the purpose of a tertiary institution (within the meaning of *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017*) that has a CIV of more than $30 million.

As the development meets the criteria of the SRD SEPP, the application will be assessed as SSD and determined by the Minister (or nominated delegate).

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

State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 (Education SEPP) aims to facilitate the effective delivery of educational establishments across NSW. The Education SEPP has been established to make it easier for education providers to build new facilities and improve existing facilities through a streamlined approval process.

Part 6 of the Education SEPP sets out the development controls that apply to TAFE establishments including works permitted with and without development consent and exempt and complying development provisions. The development meets the criteria for SSD and therefore requires development consent.

The requirements for TAFE establishments as prescribed under Part 6, clause 52 of the Education SEPP are addressed in Table 8.

Requirement	Comment
(1) Development for the purpose of a TAFE establishment may be carried out by any person with development consent on land in a prescribed zone.	The proposal is development for the purpose of a TAFE establishment and is proposed on land zoned SP2 Infrastructure, which is a prescribed zone.
(2) Development for a purpose specified in clause 56 (1) may be carried out by any person with development consent on land within the boundaries of an existing TAFE establishment.	N/A. The proposed works are not to be undertaken as complying development.

Requirement	Comment
(3) Development for the purpose of a TAFE establishment may be carried out by any person with development consent on land that is not in a prescribed zone if it is carried out on land within the boundaries of an existing TAFE establishment.	N/A. The proposed works are to be carried out on land that is in a prescribed zone.
(4) A TAFE establishment (including any part of its site and any of its facilities) may be used, with development consent, for the physical, social, cultural or intellectual development or welfare of the community, whether or not it is a commercial use of the establishment.	Noted.
(5) Subclause (3) does not require development consent to carry out development on land if that development could, but for this Policy, be carried out on that land without development consent.	N/A. Subclause (3) does not apply. It is noted that site preparation works including demolition and bulk earthworks will be carried out as part of a separate development approval process under Part 5 of the EP&A Act and in accordance with clause 53 of the Education SEPP.
(6) Development for the purpose of a centre-based child care facility may be carried out by any person with development consent on land within the boundaries of an existing TAFE establishment.	N/A. The proposed works are not for the purpose of a centre-based child care facility.
(7) Development for the purpose of residential accommodation for students that is associated with a TAFE establishment may be carried out by any person with development consent on land within the boundaries of an existing TAFE establishment.	N/A. The proposed works are not for the purpose of residential accommodation for students.

Table 8: Requirements of clause 52 of the Education SEPP

7.4.3 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) identifies the environmental assessment category for which different types of infrastructure and services development fall under. The SEPP also defines when consultation is required to be carried out with relevant public authorities for particular development types during the assessment process.

Clause 104(3) of the ISEPP requires traffic-generating developments, as specified under Schedule 3 of the SEPP, to be referred by the consent authority to the RMS prior to the determination of a development application.

As outlined under Schedule 3 of the ISEPP, the development meets the criteria of traffic-generating development as it proposes 200 basement car parking spaces and therefore triggers the requirement for referral to RMS. It is anticipated that the SSD application and EIS will be referred from DPIE to RMS for its consideration and comment as part the development assessment process.

7.4.4 State Environmental Planning Policy No. 64 – Advertising and Signage

State Environmental Planning Policy No. 64 – Advertising and Signage (SEPP 64) sets out specific requirements in relation to outdoor advertising and signage. The primary objectives of SEPP 64 are to ensure that signage (including advertising):

- is compatible with the desired amenity and visual character of an area
- provides effective communication in suitable locations
- is of high quality and finish.

SEPP 64 applies to all signage and advertisements that can be displayed with or without development consent under another environmental planning instrument and is visible from any public place or private reserve.

The development proposes building identification signs at the main See Street entry and at the northern plaza entry. The proposed signage will be compatible with the existing and future character of the surrounding area and will allow for the easy identification of the facility.

All signage incorporated as part of the development will comply with the relevant provisions of SEPP 64.

7.4.5 State Environmental Planning Policy No. 55 – Remediation of Land

State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55) aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment by specifying when consent is required, and when it is not required, for a remediation work any by requiring remediation works to meet certain standards and notification requirements.

In accordance with SEPP 55, a consent authority must not consent to the carrying out of any development on land unless it has considered whether the land is contaminated and, if the land is contaminated, it is satisfied that the land is suitable in its contaminated state for the purpose for which the development is proposed to be carried out.

The EIS includes a Preliminary Site Investigation (PSI), Limited Detailed Site (Contamination) Investigation (DSI) and Remediation Action Plan (RAP) at Appendices P, P1 and P2 respectively.

The RAP ensures the site can be made suitable for its continued use as an educational establishment, subject to the implementation of the recommendations that are provided in the RAP. Contamination is further discussed at Section 8.7.

7.4.6 Draft State Environmental Planning Policy (Remediation of Land)

Draft *State Environmental Planning Policy (Remediation of Land)* aims to ensure the better management of remediation works by aligning the need for development consent with the scale, complexity and risks associated with the proposed works.

Once adopted, the Draft SEPP will:

- provide a state-wide planning framework for the remediation of land
- require consent authorities to consider the potential for land to be contaminated when determining development applications
- clearly list the remediation works that require development consent

- introduce certification and operational requirements for remediation works that can be undertaken without development consent.

The EIS includes a Remediation Action Plan (RAP) at Appendix P. The RAP ensures the site can be made suitable for its continued use as an educational establishment, subject to the implementation of the recommendations that are provided in the RAP. Contamination is further discussed at Section 8.7.

7.4.7 Draft State Environmental Planning Policy (Environment)

Draft *State Environmental Planning Policy (Environment)* aims to promote the protection and improvement of key environmental assets for their intrinsic value and the social and economic benefits they provide. Once adopted, the Draft SEPP will consolidate the following existing EPIs:

- *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*

A BDAR Waiver Report has been prepared by EMM Consulting (EMM) which confirms that there are no naturally occurring threatened flora, fauna or ecological communities present on the site and that there is no suitable habitat for any threatened species that are predicted to occur in the locality. Biodiversity is further discussed at Section 8.10.

7.4.8 Ryde Local Environmental Plan 2014

The *Ryde Local Environmental Plan 2014* (RLEP 2014) sets out the local environmental planning provisions and development controls for land in the City of Ryde LGA.

Zoning

The development is proposed on land zoned SP2 Infrastructure (Educational Establishment) under the RLEP 2014. The objectives of the SP2 zone are to:

- *provide for infrastructure and related uses;*
- *prevent development that is not compatible with or that may detract from the provision of infrastructure; and*
- *ensure the orderly development of land so as to minimise any adverse effect of development on other land uses.*

The development is consistent with the objectives of the SP2 zone as it involves the development of educational infrastructure associated that is associated with the existing operations at the TAFE Meadowbank campus. The development ensures the orderly development of the land and would not have significant adverse impacts on the surrounding land uses. Impacts on the environmental amenity are discussed further at Section 8.2.

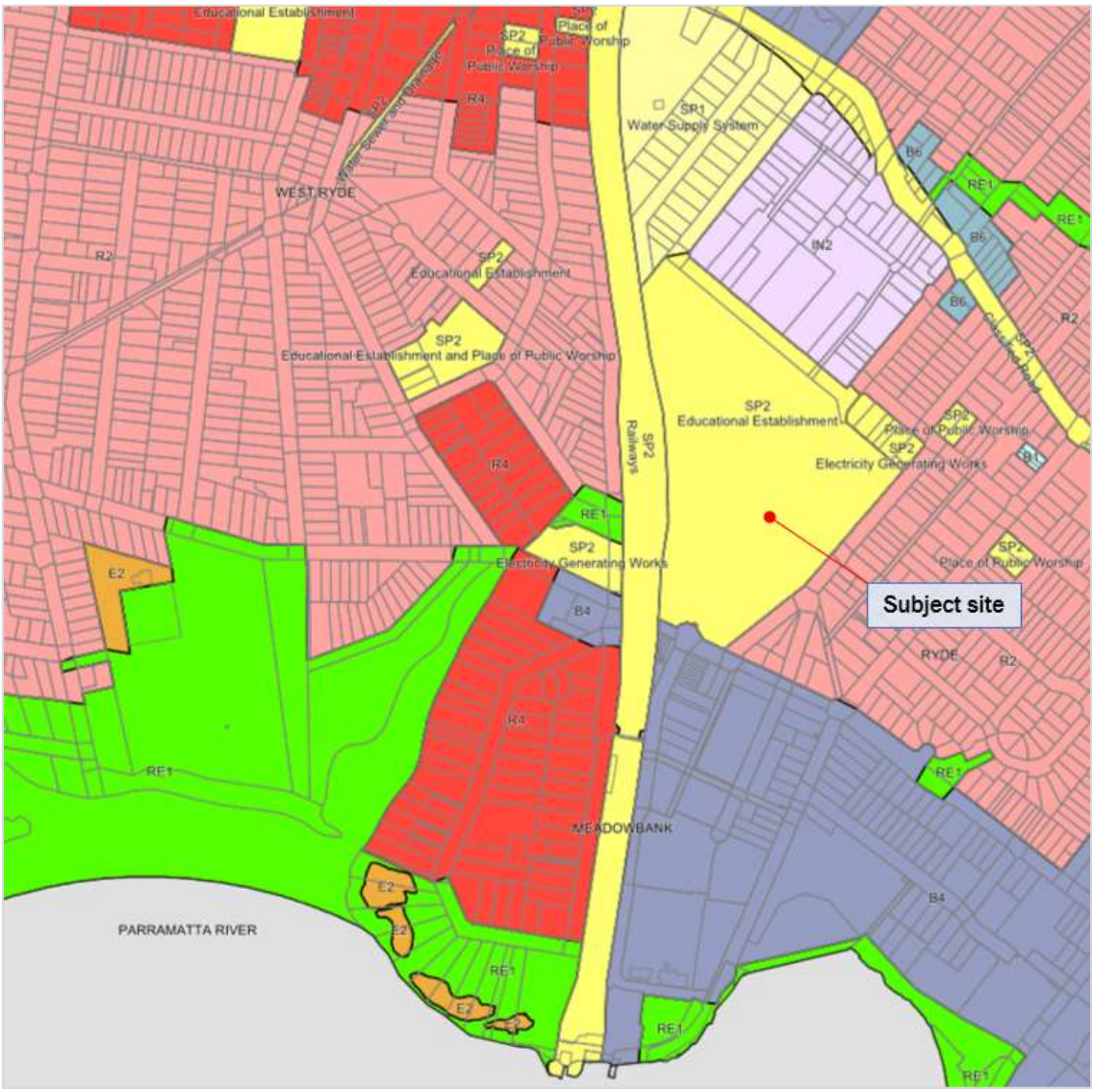

Figure 26: Land use zones under the RLEP 2014 (Base source: RLEP 2014)

Permissibility

The Land Use Table in the RLEP 2014 sets out the types of development that are permitted with and without consent. In the SP2 zone, the purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose, is permitted with consent.

The Land Zoning Map (extract shown at Figure 26) shows the purpose of the subject site as being for an 'Educational Establishment'. The proposed development is an education facility that will be used by TAFE NSW. The development is therefore permissible in the SP2 land use zone.

Other provisions

Clause 4.3 – Height of Buildings

Clause 4.3 aims to ensure street frontages of development are in proportion with and in keeping with the character of nearby development and to minimise the impact of development on the amenity of surrounding properties.

The Height of Buildings Map in the RLEP 2014 does not specify a maximum building control for the TAFE Meadowbank site.

The development is consistent with the objectives of clause 4.3 as the proposed building is consistent with the character of surrounding development as it will present as a two storey building at its frontage to See Street and is consistent with the height of other established buildings on the TAFE Meadowbank campus.

Impacts on the amenity of the surrounding properties, including visual impacts and overshadowing are found to be minimal and acceptable. Environmental amenity is discussed further at Section 8.2.

Clause 4.4 – Floor space ratio

Clause 4.3 provide effective control over the bulk of future development and allow appropriate levels of development for specific areas.

The Floor Space Ratio (FSR) Map in the RLEP 2014 does not specify a maximum FSR control for the TAFE Meadowbank site.

The development is consistent with the objectives of clause 4.4 as the proposed building design is of an appropriate bulk and scale that proportionate to the bulk and scale of other established buildings on the TAFE Meadowbank campus.

Clause 5.10 – Heritage conservation

Clause 5.10 aims to conserve the heritage significance of heritage items and heritage conservation areas. The clause also provides for the conservation of archaeological sites, Aboriginal objects and Aboriginal places of heritage significance.

Schedule 5 of the RLEP 2014 sets out the listed heritage items and heritage conservations area in the Ryde LGA. There are no listed heritage items on the TAFE Meadowbank site and the site is not located in a heritage conservation area. Further, the development would have no impact on any listed heritage items that are located in proximity to the site.

An extensive search identified 46 previously recorded Aboriginal sites within the local area, but none within the study area itself. The site has undergone extensive historical disturbance and land modification, which is likely to have removed any in situ archaeological deposits. An Aboriginal Cultural Heritage Assessment (Appendix L) found no Aboriginal sites, places of objects, or areas of potential Aboriginal archaeological sensitivity are within the study area.

European heritage and Aboriginal heritage are further discussed at Section 8.5.

7.5 Development Control Plan

7.5.1 City of Ryde Development Control Plan 2014

The *City of Ryde Development Control Plan 2014* (RDCP 2014) provides detailed planning and design guidelines and development controls for the City of Ryde LGA.

Under clause 11 of the SRD SEPP, development control plans do not apply to SSD. Notwithstanding, certain provisions under the RDCP 2014 have been considered in the preparation of the development design, specifically in relation to car parking provisions (Part 9.3 of the RDCP 2014), stormwater management and waster sensitive urban design (Part of 8.2 the RDCP 2014).

8 Environmental assessment

8.1 Built form and design

The Multi-Trades and Digital Technology Hub building responds to the environmental and contextual qualities of the site which has influenced its overall design. The building concept provides an appropriate response to the following site constraints and challenges:

- a significant east to west cross fall over the site
- existing TAFE buildings on three sides of the site
- existing services infrastructures including an electrical substation to the north
- mature trees and other vegetation across the site
- a significant sandstone foundation beneath the site
- right of way movements and site access constraints
- the presence of single storey residential development on the opposite side of See Street.

The built form and design of the building provides an appropriate response to the above listed constraints, as discussed further below.

The building includes the following built form and design elements:

- a maximum building height of 27.4 metres (six storeys) at the western elevation
- presentation as a 12 metre (two storey) building at the eastern elevation fronting See Street
- a total GFA of 13,930 m^2
- a rectangular, grid-style structure with an axial east-west connection through a central three level atrium and single plane trapezium roof
- activation of the laneway and courtyard space between the western extent of the building and existing campus Building P
- loading, services and car park entry points at the northern extent of the building, accessed via See Street.

Indicative montages of the building are provided at Figure 27 to Figure 29.

Figure 27: Montage of the main public entry from See Street, view looking south (Source: Gray Puksand)

Figure 28: Montage of the main public entry from See Street, view looking north (Source: Gray Puksand)

Figure 29: Montage of the development, view from the northern plaza (Source: Gray Puksand)

Response to See Street frontage

The See Street frontage will be the main civic space and public entry point to the building. The building will present as a highly articulated, yet low-scale development that has been designed to step back from its frontage to See Street.

The development design has undergone careful consideration in how it responds and relates to the adjoining residential area to the east of See Street in order to minimise its visual

impact. The building is considered to sensitively respond to the adjacent single story residences by incorporating the following design elements:

- a limit of two storeys at its frontage to See Street
- the integration deep angled setbacks to reduce the overall mass of the structure
- careful consideration of the building materiality including sympathetic colour selections and the inclusion of transparent materials including large glass planes
- incorporation of highly articulated façade treatment to provide a fine grain scale
- angled facades that sit beneath a unifying roof which shades large glazed areas and eliminates sun angle reflections
- materials colour selections that relate to the vegetation and geology of the site
- design of civic forecourt landscaping that is inviting, open and inclusive.

The east-west contextual elevation at Figure 30 shows the height of the development in context to the existing residential development on the opposite side of See Street.

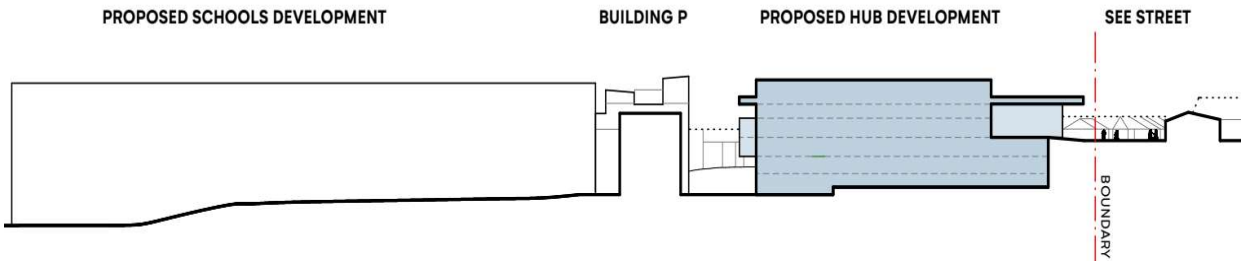

Figure 30: East-west contextual elevation (Source: Gray Puksand)

Interaction with Building P

The siting of the structure and its interaction with Building P to the west was a key focus of the building design and addresses the comments received during TAFE NSW's consultation with the NSW SDRP.

The built form of the Multi-Trades and Digital Technology Hub allows for an open atrium-style design that will ultimately create a dynamic and stimulating interior that provides shelter from the external environment while maintaining a visual link from See Street through to Building P. This design feature helps to breakdown the overall mass of the building while making use of space and natural light.

Summary

The built form and design of the development is considered appropriate in the context of the site and the surrounding locality on the basis that:

- the development is of an appropriate height and scale, noting that the RLEP 2014 does not specify a maximum building height or a maximum GFA for the TAFE Meadowbank campus
- the height of the proposed building is consistent with existing larger-scale buildings located across the TAFE Meadowbank campus
- the building will present as a two storey structure from See Street and provides an appropriate response to the sloping east-west topography of the site
- the building provides an appropriate response and interaction with Building P by maintaining a visual link from See Street through to Building P

- the building makes use of space and natural light through its atrium-style design
- the access point to the basement car park and loading dock area is shielded from view from See Street.

8.1.1 State Design Review Panel

TAFE NSW has taken part in the NSW SDRP Pilot Design Review program as part of the preparation of the EIS. The program has been established for the NSW SDRP to provide independent and impartial advice on the design quality of the development proposal.

The SDRP has provided comment on the following aspects of the development design:

- built form, bulk and building height
- public domain and landscaping
- architectural expression
- sustainability and environmental aspects.

In response to comments received by the SDRP, the development design has been refined to incorporate the following key elements:

- further activation of the laneway space between the Multi-Trades and Digital Technology Hub and Building P
- design improvements eastern façade of the building to enhance the streetscape along See Street
- improvements to the architectural expression of the building
- ensuring maximum transparency between spaces linking on various levels across the central spine
- updated landscape design

A detailed response to the to SDRP comments is contained in the Design Statement at Appendix C.

8.2 Environmental amenity

Potential impacts of the development on the environmental amenity of the surrounding area have been considered, including:

- solar access and overshadowing
- visual impacts
- wind impacts
- crime prevention through environmental design (CPTED)
- lighting.

The above listed issues are addressed in Sections 8.2.1 to 8.2.4.

8.2.1 Solar access and overshadowing

Shadow diagrams are included in the Architectural Design Statement for the winter solstice between the hours of 9 am and 4 pm (Appendix C). The extent of shadow impacts specifically between the hours of 12 pm and 3 pm is shown in Figure 31.

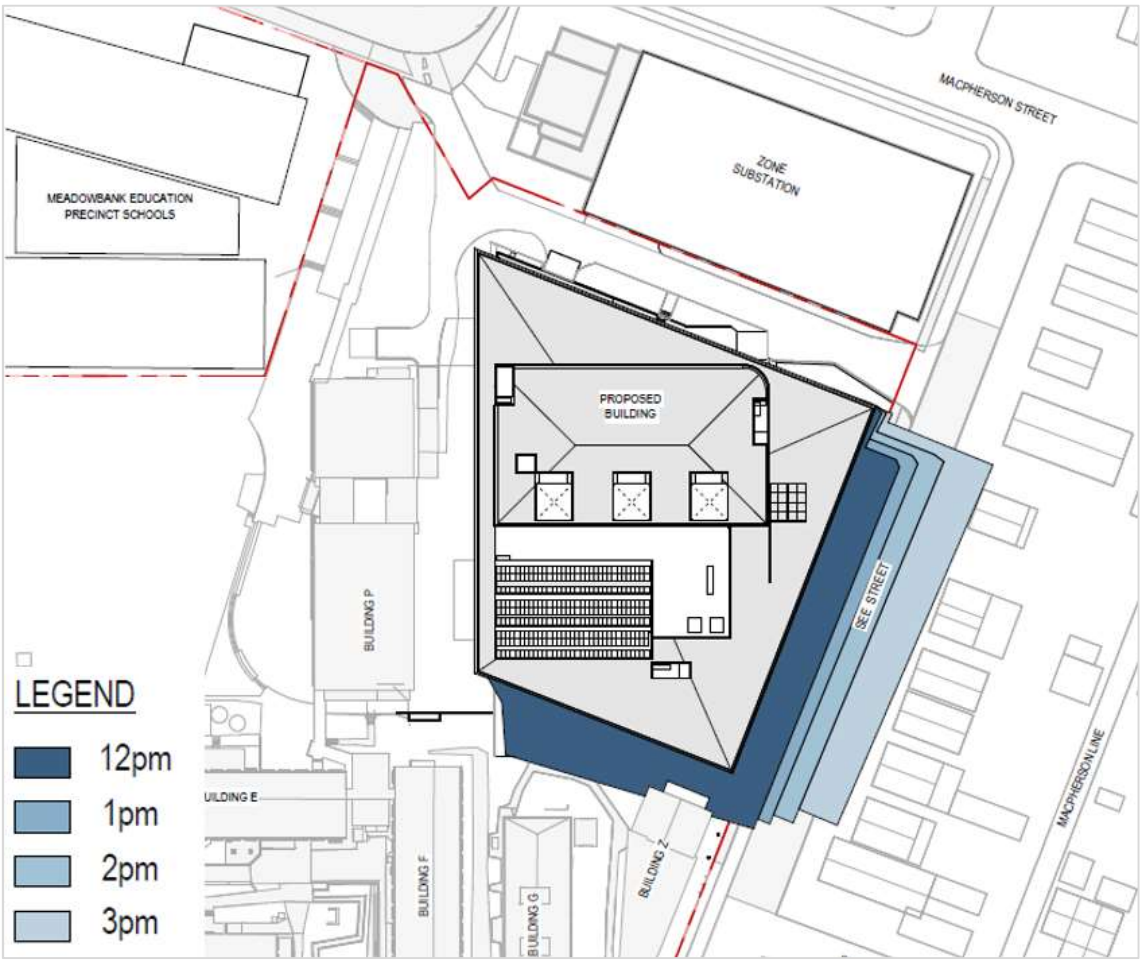

Figure 31: Shadow diagram for the winter solstice between 12 pm and 3 pm (Source: Gray Puksand)

The overshadowing analysis finds that at 12 pm (winter solstice) the development will cast shadow across the front setback to See Street including the adjacent footpath. By 3 pm (winter solstice) the development will cast shadow across the full width of See Street and within the front setback of approximately five residential properties that are located adjacent to the development site.

The overshadowing analysis finds that solar access will be maintained to these properties for a minimum of 3 hours during the winter months. The development will have no shadow impacts on any of the surrounding TAFE buildings, the future Meadowbank Education Precinct Schools or existing open space areas including the TAFE Green located to the west of the development.

8.2.2 Visual

The visual impact analysis has considered the visual exposure of the development from five different vantage points around the site. These locations have been selected as they provide a representative sample of the key areas form which the development will be visible.

The selected vantage points are shown in Figure 32. The existing and indicative (future) views from each of the five key vantage points are shown in Figure 33 to Figure 37.

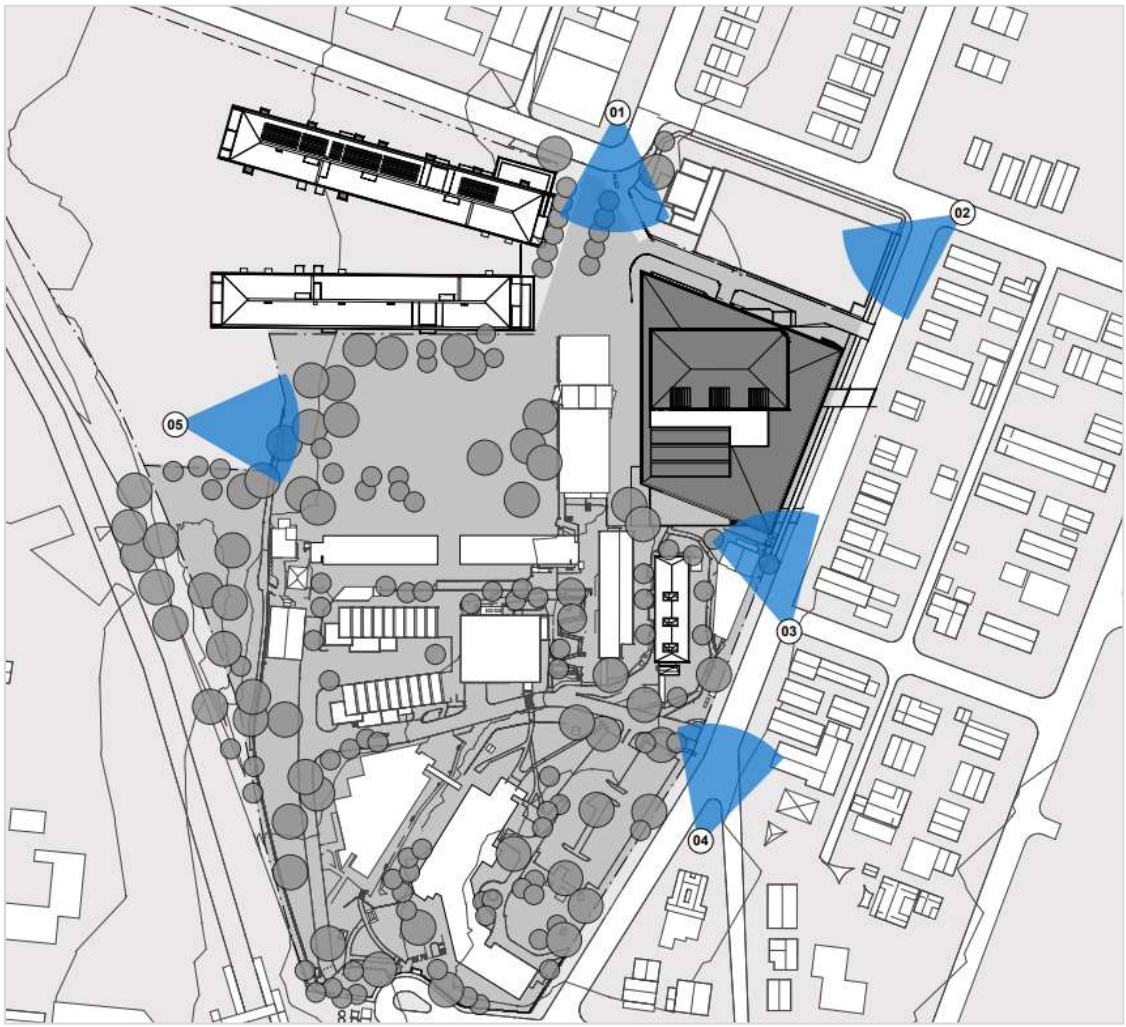

Figure 32: Vantage points for visual impact assessment (Source: Gray Puksand)

Figure 33: View 01 – northern entry plaza – before and after (Source: Gray Puksand)

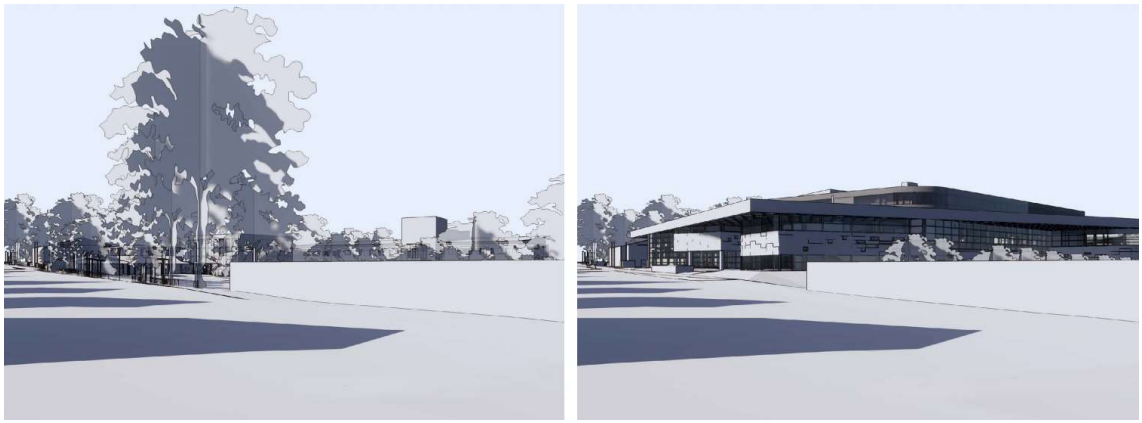

Figure 34: View 02 – Macpherson Street perspective – before and after (Source: Gray Puksand)

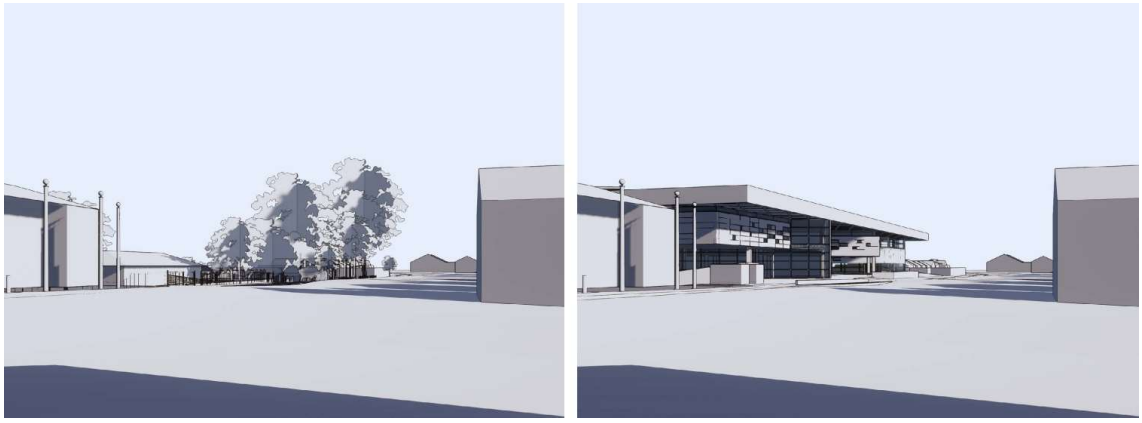

Figure 35: View 03 – Stone and See Street Perspective – before and after (Source: Gray Puksand)

Figure 36: View 04 – Thomas (Granville William) White monument perspective – before and after (Source: Gray Puksand)

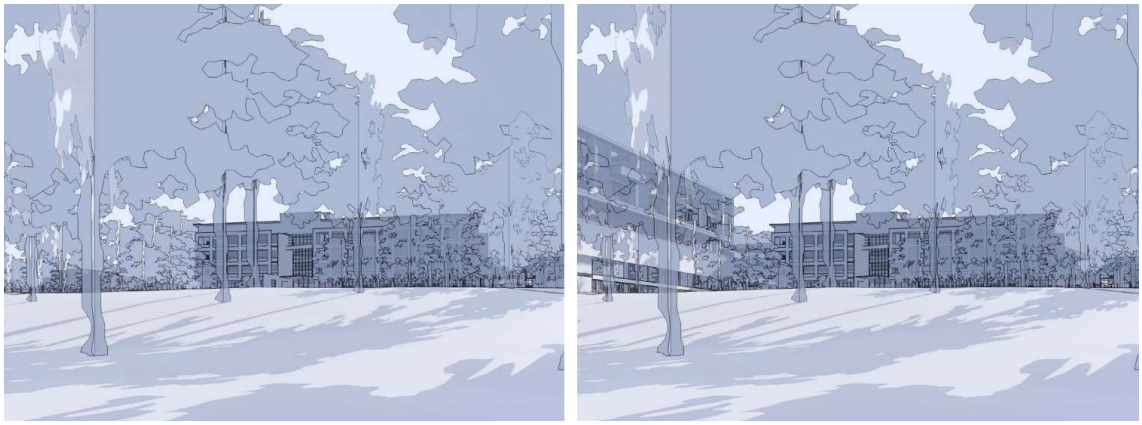

Figure 37: View 05 – Campus Green and bikeway perspective – before and after (Source: Gray Puksand)

The visual impact analysis finds that the development is acceptable on the basis that:

- the building has been appropriately sited and designed having considered the site constraints and surrounding low density residential development
- the height and bulk of the building is generally consistent with the built form of other developments within the grounds of the TAFE Meadowbank campus, as well as the proposed new Meadowbank Education Precinct Schools located adjacent to the campus
- the development will not impact on the privacy of any surrounding residences
- the development will not obscure any scenic or significant views from the surrounding residences.

8.2.3 Wind

A Pedestrian Wind Environment Statement has been prepared by Windtech Consultants and is included at Appendix G.

The Wind Statement has assessed the effects of wind activity for the three prominent wind directions (north-easterly, south to south-easterly and westerly winds). The analysis of winds potentially affecting the development was carried out in consideration of the local wind climate, building morphology and land topography.

The Wind Statement finds that the site is relatively exposed to three prevailing wind directions affecting the site, and as a result, there is a possible impact on the wind comfort within the various outdoor workshop areas and pedestrian spaces.

Notwithstanding the above, the Wind Statement considers that the anticipated wind effects can be ameliorated through the implementation of the following treatment strategies as part of the development design, as outlined in Table 9.

Location	Treatment strategy
Ground Level Thoroughfare	• retention of existing and proposed densely foliating evergreen tree planting • additional densely foliating evergreen tree planting at various critical locations along the site
Outdoor Workshop Areas on Level 3 and the External Loading Yard	• 1.5 m high impermeable balustrade on the western aspect of the southern outdoor workshop

Location	Treatment strategy
	• 1.5 m – 2 m high impermeable screen around the northern and western aspects of the northern outdoor workshop • retention of existing and proposed densely foliating evergreen tree planting • additional densely foliating evergreen tree planting along the path to the south of the development between the subject development and Building G
Pedestrian Footpaths along See Street and the Entrance to the Subject Development on the Eastern Aspect on Level 4	• densely foliating evergreen hedge planting or bushes along the eastern aspect adjacent to the Level 4 entrance. These should be at least 1 m high
Outdoor Workshop Area on the Roof Level	• 2 m high impermeable screen along the eastern, southern and western aspects of the outdoor workshop • standard height impermeable balustrade adjacent to the south-western mechanical vents
The Atrium through the Centre of the Subject Development	• inclusion of an airlock at either the Level 4 entrance or the Ground Level entrance

Table 9: Wind treatment strategies (Source: Windtech Consultants)

8.2.4 Crime Prevention Through Environmental Design

The key principles of CPTED and how they are addressed by the development are outlined in the CPTED Report prepared by Mecone at Appendix H. The key principles contained in the CPTED Report are summarised below.

Natural Surveillance

Natural surveillance is a CPTED strategy that can be achieved by providing ample opportunity for normal users of space to observe the space around them and be seen by others, helping enhance a perceived sense of safety. Natural surveillance can be achieved by placing physical features, activities and people in a manner that maximises natural visibility or observation.

The development encourages natural surveillance through its orientation enabling surveillance of See Street. Glazed facades allow for the natural surveillance of entry points, the surrounding campus and public domain areas within and around the building.

Access Control

Access control is a CPTED strategy that aims to decrease crime opportunity through restricting, channelling and encouraging people and vehicles into, out of and around the development. Access control can be achieved by using design features that clearly guide the public to and from entrances and exits whilst discouraging public access to or from dark or unmonitored areas.

The development aims to control access through limiting pedestrian entry to two primary locations, serving to channel people into the desired lobby areas, positioning building entrances to allow clear and direct access to the surrounding pedestrian network and formalising vehicular movements into and out of the site through a sole driveway off See Street.

Territorial Re-enforcement

Territorial re-enforcement is a CPTED strategy that uses actual and symbolic boundary markers, spatial legibility and environmental cues to connect people with space and encourage a communal responsibility for public areas and facilities, helping to discourage crime. Territorial re-enforcement can be achieved by design features that enhance the feeling of legitimate ownership, designing space to allow for its continued use and intended purpose and using landscaping, screening and fences to define ownership of space.

The development employs the principle of territorial re-enforcement through its intended use for educational purposes and the provision of a strong and defined street wall to See Street which will serve to demarcate the building from the public domain.

Space/Activity Management

Space/activity management is a CPTED strategy that involves the formal supervision, control and care of the development to ensure spaces are effectively used and maintained to maximise community safety. Space/activity management can be achieved by ensuring premises are well maintained and cared for and ensuring the rapid repair of vandalism and replacement of lighting.

The development will be owned and maintained by TAFE and it is anticipated that a management plan/strategy will be put into place to ensure proper and ongoing building maintenance as part of the development.

8.2.5 Lighting

A Specialist Lighting Report has been prepared by JHA and is included at Appendix Y. The report addresses the potential impacts of exterior lighting from the development on the surrounding locality, particularly from the main public entrance of the building at See Street and from the landscaped areas surrounding the site.

The following measures are proposed to be incorporated as part of the development to minimise the effects of the obtrusive lighting:

- ensuring an appropriate location position and aiming of luminaries to reduce light spill and glare
- using specifically designed lighting equipment that will minimise the upward spread of light near or above the horizontal plane
- the use of light fixtures that with relatively low level LED luminaries to avoid flood or broad area high intensity lighting where it is not required
- compliance with Australian Standard AS4282:2019 – Control of the obtrusive effects of outdoor lighting.

8.3 Traffic and transport

A Transport and Accessibility Impact Assessment (TAIA) has been prepared by GTA and is included at Appendix I.

The TAIA considers the existing traffic conditions surrounding the site, assesses the potential traffic and transport implications of the development, assesses the cumulative traffic impacts in consideration of surrounding development and considers the car parking requirements that will be generated by the proposal.

8.3.1 Campus visitation

TAFE Meadowbank currently has approximately 13,559 enrolments and 595 staff. The campus generally operates during the following hours:

- Monday to Thursday 7:00 am to 10:30 pm
- Friday 7:00 am to 7:00 pm
- Saturday 8:00 am to 5:30 pm

GTA undertook pedestrian and vehicle counts at all access points to the campus on Tuesday, 20 August 2018 between 6:30 am and 10:30 pm to understand the existing visitation profile throughout the day. The surveys were carried out on a Tuesday as this is considered the busiest day of the week at the campus.

The survey data in the TAIA indicates that the peak number of people on-site (at one time) is estimated at approximately 1,600 which occurred around 11:30 am and again around 2 pm.

GTA notes that the greatest number of people movements per hour (inbound and outbound) occurred between 8:30 am and 9:30 am with approximately 1,137 people movements per hour, while the PM peak hour occurred around 2:15 pm to 3:15 pm with 809 people movements per hour.

The TAIA has assumed the same vehicle and pedestrian arrival and departure profile in the future, with this data being used in conjunction with the 2018 travel mode surveys (shown in the campus visitation graph at Figure 38 below) to develop the future traffic and parking estimates.

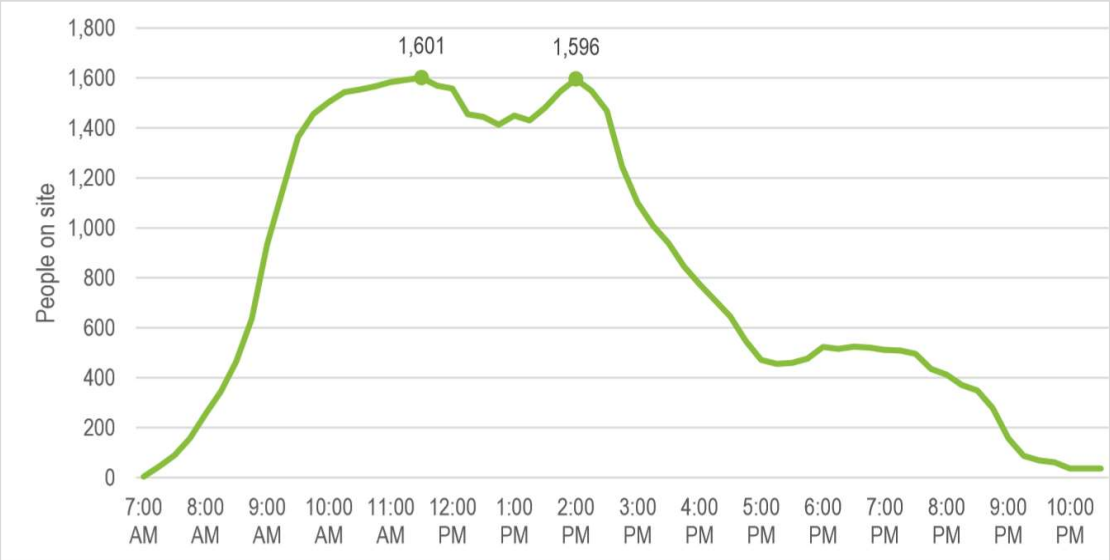

Figure 38: TAFE Meadowbank daily campus visitation (Source: GTA Consultants)

8.3.2 Existing traffic conditions

Vehicular access to the TAFE Meadowbank campus is primarily via See Street and Rhodes Street. Connections to the wider, classified road network including Victoria Street is provided primarily via a number of surrounding local roads including Hermitage Road, Mellor Street, Forsyth Road and Constitution Road.

The road network surrounding the site is shown in Figure 39. A summary of the surrounding roads and their functions within the broader road network in proximity to the campus is provided in Table 10.

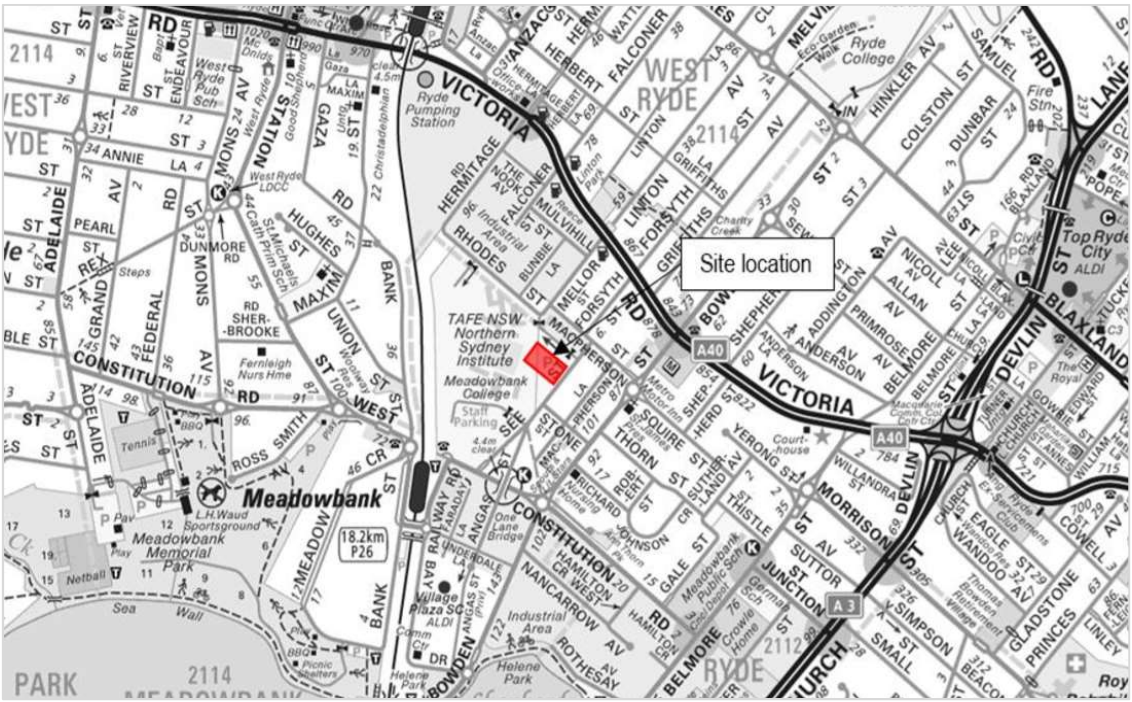

Figure 39: Surrounding road network (Source: GTA)

Street name	Description
See Street	*See Street functions as a local road and near the campus and is aligned in a north-south direction. It is a two-way road configured with one travel lane and one parking lane in each direction within an 11-metre wide carriageway.* *Kerbside parking is permitted on both sides of See Street.*
Rhodes Street	*Rhodes Street functions as a collector road and is aligned in an east-west direction. It is a two-way road configured with one traffic lane and one parking lane in each direction within a 11-metre wide carriageway.* *Rhodes Street carries approximately 1,100 vehicles per day in the eastbound direction and 1,400 vehicles per day in the westbound direction.* *Kerbside parking is permitted on both sides of Rhodes Street.*
Hermitage Road	*Hermitage Road functions as a collector road and is aligned in a north south direction. It is a two-way road configured with one travel lane and one parking lane in each direction.* *Hermitage Road intersects Victoria Road at a signalised intersection, permitting all turning movements and carries around 1,700 vehicles per day in the southbound direction and 1,900 vehicles per day in the northbound direction.* *Kerbside parallel parking is permitted on both sides of Hermitage Road.*
Victoria Road	*Victoria Road is a classified State Road and is aligned in an east-west direction. Near the campus, it is a two-way road configured with three travel lanes in each direction.* *Kerbside parking is not permitted on Victoria Road.*
Bowden Street	*Bowden Street functions as a collector road and is aligned in a north south direction.* *Bowden Street is a two-way road configured with one travel lane in each direction that intersects Victoria Road at a signalised intersection, permitting all turning movements.* *Kerbside parking is permitted on both sides of Bowden Street.*
Macpherson Street	*Macpherson Street functions as a local road and near the campus and is aligned in an east-west direction. It is a two-way road configured with one travel lane and one parking lane in each direction.* *Kerbside parking is permitted on both sides of Macpherson Street.*
Mellor Street	*Mellor Street functions as a local road near the campus is aligned in a north-south direction. It is a two-way road configured with one travel lane and one parking lane in each direction and provides left-in, left-out access to Victoria Road.* *Kerbside parking is permitted on both sides of Mellor Street.*
Forsyth Street	*Forsyth Street functions as a local road near the campus is aligned in a north-south direction. It is a two-way road configured with one travel lane and one parking lane in each direction.* *Kerbside parking is permitted on both sides of Forsyth Street.*
Constitution Road	*Constitution Road functions as a local road near the campus is aligned in an east-west direction. It is a two-way road configured with one travel lane in each direction.* *No stopping is permitted on Constitution Road, between Railway Road and Bowden Street.*

Table 10: Summary of the surrounding road network at TAFE Meadowbank (Source: GTA)

8.3.3 Public transport

The TAIA describes the public transport options that currently service the site as follows:

Meadowbank Railway Station will provide a key transport mode to support the proposal. Under existing conditions, the rail services operating through this station are over capacity. Under the NSW Government's Future Transport Strategy, the More Trains, More Services program is targeting capacity increases and upgrades to improve peak hour crowding on rail services. Improvements to the capacity and reliability of the T1 Northern Line will be critical for encouraging and facilitating public transport use for the proposed schools, noting that the Sydney Metro CBD and Southwest currently under construction is expected to relieve some pressures on the T1 Northern Line. On the above basis, the TAIA finds that sufficient rail capacity will be available to service the requirements of both the TAFE and Meadowbank Schools.

High-frequency bus services, including the M52, currently operate along Victoria Road. It is understood that there is sufficient capacity on these existing services to accommodate the likely increase in patronage from the operation of the Multi-Trades Hub and Meadowbank Schools. Available bus stops are generally within a five-minute walk of the Multi-Trades Hub, with existing footpaths along Forsyth Street and Mellor Street providing appropriate pedestrian accessibility.

8.3.4 Active transport

The TAIA describes the active transport options as follows:

The proposed schools are likely to generate an increase in pedestrian volumes of about 60 pedestrians per hour including walking trips linked with train and bus trips. The main pedestrian movements will approach to/ from the south of the campus, given the surrounding residential catchment and the location of Meadowbank Railway Station, with an estimated total of about 50 pedestrian movements during the peak hour.

An Education Precinct pedestrian spine is proposed as part of a separating planning pathway which connects Meadowbank Station with a northern Precinct Plaza between the Multi-Trades Hub and Meadowbank Schools. This will provide a direct, high amenity connection to Meadowbank Station and represents a significant improvement over the existing on-street route. There are limited cyclist provisions surrounding the campus, which is not considered sufficient to support the cyclist demand associated with the proposed schools and TAFE. It is recommended that shared paths are constructed along the key pedestrian and cyclist desire lines to support the broader precinct.

8.3.5 Pedestrians and cyclists

The TAIA describes the environment for pedestrian and cyclists as follows:

The proposed schools are likely to generate an increase in pedestrian volumes of about 75 pedestrians per hour including walking trips linked with train and bus trips. The main pedestrian movements will approach to/ from the south of the campus, given the surrounding residential catchment and the location of Meadowbank Railway Station, with an estimated total of about 75 pedestrian movements during the peak hour.

An Education Precinct pedestrian spine is proposed as part of a separating planning pathway which connects Meadowbank Station with a northern Precinct Plaza between the multi-trades and digital technology hub and Meadowbank Schools. This will provide a direct, high

amenity connection to Meadowbank Station and represents a significant improvement over the existing on-street route.

There are limited cyclist provisions surrounding the campus, which is not considered sufficient to support the cyclist demand associated with the proposed schools and TAFE. It is recommended that shared paths are constructed along the key pedestrian and cyclist desire lines to support the broader precinct.

8.3.6 Traffic impact assessment

Impacts of the development on the surrounding intersections were assessed in the TAIA using SIDRA Intersections modelling. Intersection survey counts were used to develop the traffic demand during both the **AM peak** (8:00 am to 9:00 am) and **PM peak** (2:30 pm to 3:30 pm) time periods. Further, the results of a previous traffic survey (discussed at Section 8.3.1), have been used to inform the assessment of the future traffic generation.

Three scenarios were modelled:

- **Base** – the existing road network conditions
- **Future Base** – future (2021 and 2031) road network conditions with background growth and the new Meadowbank Education Precinct Schools
- **Future with Development** – future (2021 and 2031) road network conditions with background growth, the new Meadowbank Education Precinct Schools and the development traffic.

The TAIA notes that 2021 and 2031 are typical future modelling years for which background traffic forecasts are available. The anticipated additional TAFE traffic in the opening year for the proposed development (being 2022) and the 10-year planning horizon (being 2032) have therefore been added to 2021 and 2031 background traffic forecasts (to avoid minor interpolations).

Traffic generation of the Multi-Trades and Digital Technology Hub

The anticipated traffic generation of the development during the AM and PM peak periods (for the years 2022 and 2032) using the future mode shares and trip generation assumptions, is outlined in Table 11.

User	2022			2032		
	AM peak hour	PM peak hour	Daily trips	AM peak hour	PM peak hour	Daily trips
Staff	16	15	70	27	24	107
Student	45	40	192	76	67	305
Total	**61**	**55**	**262**	**103**	**91**	**412**

Table 11: Traffic generation during peak periods – years 2022 and 2032 (Source: GTA)

Traffic generation of the new Meadowbank Schools

The TAIA acknowledges that as part of the broader Meadowbank Education and Employment Precinct, the new Meadowbank Public School will be delivered concurrently and will also be operational by early 2022.

The traffic generation arising from new Meadowbank Public School has been included in the relevant traffic models to ensure that a comprehensive and cumulative traffic impact assessment has been undertaken.

A summary of the anticipated trip generation of the new Meadowbank Schools for the years 2022 and 2032 is outlined in Table 12.

Year	Peak Hour	Staff		Secondary Students		Primary Students	
		Occupancy	Car Trips	Occupancy	Car Trips	Occupancy	Car Trips
2022	AM	1.0	28	1.7	169	2.0	24
	PM	1.0	10	1.7	101	2.0	120
2032	AM	1.0	41	1.7	293	2.0	116
	PM	1.0	15	1.7	164	2.0	187

Table 12: Anticipated trip generation of the new Meadowbank Schools (Source: GTA)

Impacts on surrounding intersections

In assessing the traffic impacts of the development, the TAIA has considered the degree of saturation, average delay (seconds), average queue length (metres) and overall Level of Service (LoS) at the following key intersections located in proximity to the site:

- Victoria Road / Hermitage Road (signalised)
- Macpherson Street / Rhodes Street (unsignalised)
- Macpherson Street / See Street (unsignalised)
- Macpherson Street / Bowden Street (unsignalised)
- Bowden Street / Stone Street (unsignalised)
- Bowden Street / Squire Street (unsignalized – roundabout)
- Bowden Street / Victoria Road (signalised)
- Bowden Street / Constitution Road (unsignalised – roundabout)
- Railway Road / Bay Drive / Bank Street (unsignalized – roundabout)
- Church Street / Morrison Road (signalised)
- Belmore Street / Constitution Road (signalised)

The SIDRA modelling results for the **Future Base** scenario including school traffic (for the years 2021 and 2031) and the **Future with Development** scenario (for the years 2021 and 2031) are comprehensively outlined in the intersection performance tables at Section 9 of the TAIA.

A summary of the LoS findings of the SIDRA traffic modelling is provided in Table 13 (AM peak) and Table 14 (PM peak).

Intersection	Control	Future Base	Future with Development	Future Base	Future with Development
		2022	2022	2032	2032
Macpherson Street/ Mellor Street	Priority	A	A	A	A
Macpherson Street/ See Street	Priority	A	A	A	A
Macpherson Street/ Bowden Street	Priority	A	B	B	B
Bowden Street/ Squire Street	Roundabout	A	A	A	B
Constitution Road/ Bowden Street	Signals	B	B	C	D
Victoria Road/ Bowden Street	Signals	D	D	E	F
Victoria Road/ Hermitage Road	Signals	D	E	F	F
Bowden Street/Stone Street	Priority	D	C	E	D
Constitution Road/ Belmore Street	Signals	B	B	B	B
Church Street/ Morrison Road	Signals	B	B	B	B
Banks Street/ Bay Drive/ Railway Road	Roundabout	A	A	A	A

Table 13: Intersection performance – 'Future Base' and 'Future with Development' scenarios, AM peak (Source: GTA)

Intersection	Control	Future Base	Future with Development	Future Base	Future with Development
		2022	2022	2032	2032
Macpherson Street/ Mellor Street	Priority	A	A	A	A
Macpherson Street/ See Street	Priority	A	A	A	A
Macpherson Street/ Bowden Street	Priority	A	A	A	B
Bowden Street/ Squire Street	Roundabout	A	A	A	A
Constitution Road/ Bowden Street	Signals	B	B	C	C
Victoria Road/ Bowden Street	Signals	B	B	C	C
Victoria Road/ Hermitage Road	Signals	D	D	F	F
Bowden Street/Stone Street	Priority	E	D	F	E
Constitution Road/ Belmore Street	Signals	B	B	C	D
Church Street/ Morrison Road	Signals	B	B	B	B
Banks Street/ Bay Drive/ Railway Road	Roundabout	A	A	A	A

Table 14: Intersection performance – 'Future Base' and 'Future with Development' scenarios, PM peak (Source: GTA)

From the results presented in Table 13 and Table 14, the TAIA provides the following traffic impact analysis:

For the 2022 Future Base traffic conditions including background growth only in 2022:

- *all intersections are observed to perform at acceptable level of service D or better, except for the Victoria Road and Hermitage Road intersection in the AM peak hour*
- *the phasing at Victoria Road and Hermitage Road is set as single diamond overlap with through movements at Hermitage Road running in one phase with filtered right turns. With the additional traffic, the right turn (southbound) into Victoria Road is observed to experience a high delay and queues*
- *a high degree of saturation (>1) is observed at Victoria Road and Bowden Street intersection for AM peak traffic conditions indicating that this intersection is operating at capacity.*

For the 2032 Future Base conditions:

- *all intersections are observed to perform at acceptable level of service D or better except for the following intersections:*
  - *Victoria Road and Hermitage Road*
  - *Victoria Road and Bowden Street.*
- *With the additional schools and TAFE traffic, the key access intersections on Victoria Road at Hermitage Road and Bowden Street experience higher delays and queue lengths compared to future base scenario results for both future years assessed.*
- *The modelling indicates that the intersection of Bowden Street and Stone Street would improve with the additional traffic. However, this intersection is impacted by the upstream and downstream queues at Bowden Street and the highest delay movement is reported. Slow moving traffic and Bowden street provides opportunities for turning traffic to find gaps and therefore intersection operation would be consistent with or without the schools and TAFE.*

- *Church Street and Morrison Road operates satisfactorily at level of service B however a high degree of saturation (~1) indicates that some movements are operating at capacity*
- *The future traffic signals at the intersection of Constitution Road and Bowden Street operates at an acceptable LoS D or above for both future years.*

The TAIA acknowledges that, from the results indicated above, it can be observed that the new school and TAFE traffic will have a marginal impact on critical intersections along Victoria Road. However, the road network as a whole is observed to operate at satisfactory levels for the 2022 traffic conditions with the additional traffic generated by the Multi-Trades and Digital Technology Hub.

The TAIA notes that the forecast future 2031/32 traffic volumes (without the proposed Multi-Trades and Digital Technology Hub and/or the new Meadowbank Education Precinct Schools) would result in intersections along Victoria Road exceeding capacity. With the addition of the proposed school traffic, the two key precinct access intersections from Victoria Road at Hermitage Road and Bowden Street, operate at or above capacity.

It is noted that the minor roads intersecting with Victoria Road experience existing and future delays (and do not necessarily clear queues in a single signal cycle) due to limited green time as a result of significant traffic volumes and congestion on Victoria Road.

The TAIA therefore recommends for a corridor upgrade strategy to be developed in conjunction with RMS and TfNSW, as part of the broader precinct master planning work to address the future traffic impacts.

8.3.7 Car Parking

Construction of the development will require the removal of 212 existing at-grade car parking spaces that are attributed to the TAFE campus. The development includes the provision of 200 basement car parking spaces.

The TAIA notes that an additional 100 car parking spaces have recently become available on the western side of the campus.

The RDCP 2014 has been used as a guide to establish car parking rates for the proposal. By 2032, it is expected that enrolments will increase to approximately 16,603 students, or an increase of approximately 25 per cent. Adopting this percentage increase to the daily peak number of people on-site suggests that there will be an increase of approximately 410 people on-site at any one time by 2032. This is estimated to include 75 staff and 330 students (using the existing staff to student ratio).

To accord with the RDCP 2014, a total of 104 spaces would be required, as outlined in the summary at Table 15.

Use	Description	Size	Car parking rate	Car parking requirement
Educational Establishment – other than schools	Staff	75 staff	1 space / two employees	38 spaces
	Students	330 students	1 space / five students	66 spaces
			Total	**104 spaces**

Table 15: Car parking requirements – RDCP 2014 (Source: GTA)

In summary, the TAIA states that the development requires the removal of 212 parking spaces, while the development will include approximately 200 parking spaces. An additional 100 spaces will be made available in late 2019 on the western side of the campus following completion of existing construction works for a separate component of the Meadowbank TAFE redevelopment. This will result in a net increase of 88 spaces and therefore results in a minor shortfall of 16 spaces against the RDCP 2014 requirements.

The minor shortfall in car parking spaces to comply with the RDCP 2014 is considered acceptable given there will be day-to-day variation in parking demand. Proposed travel planning and management initiatives will also assist in reducing future car parking demand.

The car parking layout within the building is designed to meet the requirements of the Australian Standard for Off-Street Car Parking.

The Building Code of Australia requires that disabled spaces be provided at a rate of one space for every 100 car parking spaces, or part thereof. Based on the proposed parking provision of 200 car parking spaces, at least two disabled spaces are required. This is met with the provision of four accessible spaces on Level 2.

8.3.8 Pick-up and set-down arrangements

The existing kerbside parking along the See Street frontage to the site is proposed to be converted to a pick-up and set-down area. The TAIA states that the proposed arrangement will require the removal of approximately eight on-street car parking spaces. The development provides opportunity to integrate a formal pick-up and set-down for the TAFE campus, noting that the Meadowbank campus is currently lacking such facilities.

The proposed location of the pick-up and set-down on See Street would also provide adequate separation between the Meadowbank Education Precinct Schools pick-up and set-down area which will be located on Rhodes Street, ensuring any cumulative impacts between the two development are minimised.

8.3.9 Bicycle parking

Bicycle parking requirements are also set out in the RDCP 2014. Bicycle parking for new buildings in excess of 600 sqm of GFA is required to be provided at a rate equivalent to 10 per cent of the required car parking spaces, of part thereof.

Considering the required car parking provision of 104 spaces (as discussed in Section 8.3.7) the development requires a total of 11 bicycle parking spaces to meet the provisions of the RDCP 2014. Bicycle parking provisions will be incorporated as part of the development including a dedicated, secure bicycle storage space within the building that will include a minimum of 11 bicycle parking spaces.

8.3.10 Construction Traffic Management Plan

A preliminary Construction Traffic Management Plan (CTMP) has been prepared as part of the TAIA.

The expected duration of the construction works is approximately 20 months, with some overlap between the construction stages. The preliminary CTMP assumes construction will commence in February 2020 and be completed by November 2021. A description of the construction works and the anticipated timing is included at Table 16 (note that demolition and excavation will be carried out as part of a separate development approval process under Part 5 of the EP&A Act).

Stage	Description	Dates	Duration
2	Demolition and excavation	February 2012 to June 2020	5 months
3	Building structure	July 2020 to March 2021	9 months
4	Façade and fit out	April 2019 to September 2021	6 months
5	Landscaping and civil works	June 2021 to September 2021	4 months
6	Commissioning	October 2021 to November 2021	2 months

Table 16: Construction works stages (Source: GTA)

Construction traffic generation

During peak construction activity, it is anticipated that the site will generate up to 80 trucks per day (160 two-way movements), or an average of nine trucks per hour (18 two-way movements). This activity is expected to occur during the demolition and excavation stage which will form part of a separate development approval process as part of a Review of Environmental Factors under Part 5 of the EP&A Act.

As the traffic modelling for the post development scenarios has been completed, subsequently indicating that the surrounding intersections will operate satisfactorily (with higher traffic volumes), the impacts of additional construction traffic is expected to be minor. Further to this, 9 construction vehicles per hour would equate to less than one vehicle in every second traffic signal cycle.

Concrete pours during the building structure stage are expected to result in lower vehicle movements with approximately 50 vehicle movements per day (or five vehicles per hour) which have a negligible impact on the existing local road network conditions.

Construction vehicle access routes

Construction vehicle access to the site is proposed from See Street and egress via Rhodes Street. The proposed construction vehicle routes to and from the site have been selected to minimise the use of local roads and use arterial roads where possible, as shown in Figure 40.

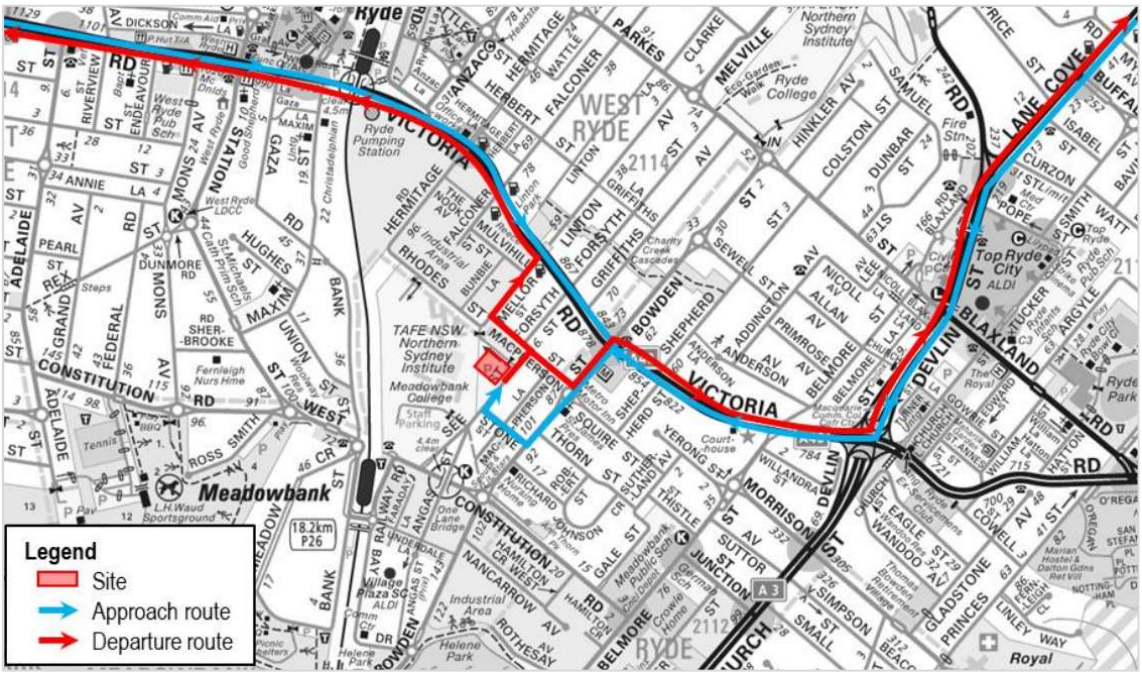

Figure 40: Construction vehicle access and egress (Source: GTA)

Construction staff car parking

The anticipated average and peak number of workers during the construction works is anticipated to be between 100 to 200 personnel per day. It is estimated that there will be approximately 200 car parking spaces available to construction workers related to the Meadowbank Education Precinct Schools and the Multi-Trades Hub and Digital Technology Hub until July 2020. Travel arrangements for construction workers will be refined once a contractor is appointed.

Notwithstanding the above, due to the site's proximity to high frequency public transport services, including Meadowbank Train Station, all construction staff will be encouraged to make use public transport with appropriate tool/equipment drop-off arrangements to be made once a contractor is appointed.

8.4 Ecologically sustainable development

An Ecologically Sustainable Design Report (ESD Report) has been prepared by JHA and is included at Appendix J.

The ESD Report has been prepared in accordance with the best practice design principles, Green Star Design and As-Built Submission Guidelines v1.2 and the National Construction Code (NCC) 2019 (Section J – Energy Efficiency).

The proposal includes a range of sustainable design initiative, including:

- sustainability benchmarking, including targeting a 4 star Green Star Design and As Built certification
- building envelope performance, building fabric and glazing
- shading and daylighting
- natural ventilation

- energy efficiency, including heating, cooling and ventilation systems, lighting, controls, electricity metering, renewable energy and vertical transport
- ventilation systems in accordance with AS 1668.2 for mechanically ventilated spaces
- water conservation, including fixtures, alternative water network and metering
- sustainable material, including low volatile organic compounds and low formaldehyde materials, and recycled content
- ecological conservation
- waste management plan
- water sensitive urban design.

An assessment of the development against the principles of ESD as defined in clause 7(4) of Schedule 2 of the EP&A Regulation is provided in Table 17 below:

ESD Principle	Response provided by JHA
The precautionary principle	*This development is being designed in accordance with a wide range of ESD goals that pertain to the design, construction and operational stages. The development team will ensure that the building minimises the impact on the environment in the areas of energy, water and materials. A strong focus on electrical and mechanical strategies, including the use of renewable energy contributes to significant strides toward minimising climate change impacts.*
Inter-generational equity	*This development will not cause any significant impact on the health, diversity and productivity of the environment and will provide a community benefit in the form of increased student capacity, upgraded teaching and learning facilities. The project will contribute to a lively community environment and add architectural interest to the surrounding area.*
Conservation of biological diversity and ecological integrity	*This development is proposed on a previously developed area of land adjacent to a train station, surrounded in an urban residential environment in a north-western suburb of Sydney.* *The existing through-site access will be improved by minor upgrade works, subject to a separate approval process. The project will aim to maintain a connection with nature, ensuring the wellbeing of not just people but fauna as well.*
Improved valuation, pricing and incentive mechanisms	*The design of this development has considered not just capital upfront but operational and maintenance costs to determine the optimum strategy with regards to not only meeting Green Star but also develop an innovative building for the future.*

Table 17: Assessment against ESD Principles (Source: JHA)

On this basis of the above assessment, the proposal is considered to be consistent with the principles of ESD.

8.5 Heritage

8.5.1 European heritage

The TAFE Meadowbank campus does not contain any items of State or local heritage significance. However, there are a number of heritage items that are of local heritage significance and a heritage conservation zone (listed under Schedule 5 of the RLEP 2014) that are in proximity to the campus. There is also one item of State heritage significance in proximity to the campus.

The location of these items are shown in Figure 41 and are described in Table 18.

Figure 41: Surrounding heritage items (Source: RLEP 2014)

Identification Number	Item	Significance level
20	Church	Local
21	House	Local
37	Meadowbank Shops	Local
51	Houses	Local
64	Church	Local
69	Church	Local
70	Milton (house)	Local
71	House	Local
115	Fountain	Local
116	Attached dwellings	Local
117	House	Local
118	“Uplands” (house)	Local
155	Ryde Pumping station and site	State
156	House (Former engineer’s residence)	Local
222	House and garden	Local
C2 (conservation area)	Maxim Street, West Ryde	Local

Table 18: Surrounding heritage items (Source: RLEP 2014)

All works associated with the development are wholly contained within the boundaries of the campus and, therefore, will not impact on the significance or values of the surrounding listed heritage items.

A Heritage Impact Assessment (HIA) has been prepared by AMBS Ecology & Heritage and is included at Appendix K. The HIA has been prepared in accordance with the principles and guidelines of the *Burra Charter: The Australian ICOMOS Charter for the Conservation of Places of Cultural Significance 2013* and the current best practice guidelines as identified in the *NSW Heritage Manual* (1996).

The HIA states there are no listed heritage items within the study area. However, a previous heritage assessment (David Scobie Architects, 2017) identified the TAFE Meadowbank precinct as locally significant with a number of contributing heritage items including:

- Buildings A and B
- the central College Green
- the former quarry and rock cutaway.

The 2017 heritage assessment identified the following buildings and items located in proximity to the where the Multi-Trades and Digital Technology Hub will be sited and their level of significance:

Building/Item No.	Significance rating
Building N	Moderate (Stage 4, child care centre, 1990s accommodation)
Building K, staff car park	Little

Table 19: Significance rating (Source: David Scobie Architects)

The HIA prepared by AMBS Ecology & Heritage determined that no items listed in Table 19 above warrant heritage listing and do not present significant heritage fabric or any specific architectural techniques that aren't represented in other built items throughout NSW.

The HIA also concludes that the staff car park and Building N (child care centre), proposed to be removed under a separate development approval process to facilitate the construction of the development, do not contain any built or archaeological heritage significance.

In summary, the Multi-Trades and Digital Technology Hub will not impact on the heritage values of the campus or the surrounding precinct. The HIA recommends that the design and scale of the building should be sympathetic to the precinct's heritage values and incorporate materials that help interpret the surrounding environment while minimising further cumulative impacts to campus Buildings A and B.

8.5.2 Aboriginal heritage

An Aboriginal Cultural Heritage Assessment (ACHA) has been prepared by AMBS Ecology & Heritage and is included at Appendix L.

The site has been extensively cleared of any native vegetation. The existing vegetation on the site currently comprises regrowth vegetation, garden plantings, weeds and grasses. Further, the site has undergone extensive historical disturbance and land modification, which is likely to have removed any in-situ archaeological deposits.

An Aboriginal archaeological survey and assessment of the study area was undertaken on Monday, 19 August 2019. The survey and assessment found there to be no Aboriginal sites, places of objects, or areas of potential Aboriginal archaeological sensitivity within the study area or immediate surrounds.

The ACHA finds that, due to the considerable disturbance of the study area, it is unlikely that Aboriginal heritage objects remain within the study area.

Aboriginal community consultation was carried out to include relevant aboriginal communities as stakeholders in decisions concerning any heritage objects, archaeological places or sacred sites within a study area. A draft of the assessment was provided to all registered aboriginal parties on the 3 September 2019 for their review and comment by 1 October 2019. No additional community feedback or input on aboriginal heritage within the site was provided by the parties.

In summary, the ACHA finds that the proposal is unlikely to impact Aboriginal heritage values within the study area and finds that no further Aboriginal heritage assessment is required as part of the development.

The ACHA recommends that, should any Aboriginal objects be exposed during construction works, disturbance of the area should cease and the Cultural Heritage Division of DPIE be informed in accordance with section 89A of the *National Parks and Wildlife Act 1974*. Works should not continue on the site without the written consent of DPIE.

8.6 Noise and vibration

A Noise and Vibration Impact Assessment (NVIA) has been prepared by JHA and is included at Appendix N. The NVIA addresses the potential noise and vibration impacts during construction and operation of the development.

8.6.1 Existing noise conditions

The NVIA describes the local area surrounding the site as comprising a mix of uses varying from residential, light industrial, educational and local scale retail. A substation shares the northern boundary of the site with associated easements to the TAFE site. A large light industrial area is located to the north of the campus and a minor holding to the south behind the local retail outlets.

The existing ambient noise environment surrounding the site is variable with road traffic noise and rail noise the primary noise sources.

The surrounding noise sensitive receivers are shown in Figure 42 and includes residential receivers (yellow), educational receivers (orange), light industrial receivers (purple) and the proposed new Meadowbank Education Precinct Schools (green).

Figure 42: Surrounding noise sensitive receivers (Source: JHA)

Attended and unattended noise surveys were conducted in the locations near the site to establish the ambient and background noise levels at the site and the surrounding area.

Long term unattended noise monitoring was carried at location 'L1' shown on Figure 43 (below) while the short term attended noise monitoring was carried out at locations 'S1', 'S2' and 'S3', also shown on Figure 43.

Figure 43: Location of long term (attended) and short term (unattended) noise monitoring (Source: JHA)

The unattended noise monitoring (L1) was carried out approximately 15 m form the nearest residential property on See Street which provides an accurate representation of the existing noise conditions at this property.

The results of the long term (unattended) and short term (attended) noise monitoring is shown in Table 20 and Table 21, respectively.

The rating background levels (RBLs) for the development are outlined in Table 20.

Date	L_{A90} Background Noise Levels, dB(A)			L_{Aeq} Ambient Noise Levels, dB(A)		
	Day 0700-1800	Evening 1800-2200	Night 2200-0700	Day 0700-1800	Evening 1800-2200	Night 2200-0700
Friday 26 July 2019	n/a	43	37	n/a	50	46
Saturday 27 July 2019	41	40	37	52	49	47
Sunday 28 July 2019	39	41	35	52	48	47
Monday 29 July 2019	41	Weather	Weather	54	Weather	Weather
Tuesday 30 July 2019	44	43	Weather	53	52	Weather
Wednesday 31 July 2019	42	42	35	53	50	47
Thursday 1 August 2019	40	42	37	54	52	48
Rating Background Levels (RBLs) / Assessment Background Levels (ABLs)	**41**	**42**	**37**	**53**	**50**	**47**

* As stated in the NSW NPI methodology, any data likely to be affected by rain, wind or other extraneous noise has been excluded from the calculations (referenced as 'Weather' in the table)

Table 20: Results of long term noise monitoring (Source: JHA)

Location	Date and Time	Parameter	Sound Pressure Level, dB re 20μPa								
			Overall dB(A)	Octave Band Centre Frequency, Hz							
				63	125	250	500	1k	2k	4k	8k
S1	26/07/2019 11.20 – 11.35	$L_{90,15min}$	**49**	58	51	46	43	42	38	34	27
		$L_{eq,15min}$	**53**	60	56	53	50	48	44	42	39
		$L_{10,15min}$	**59**	65	61	60	56	54	51	48	45
S2	02/08/2019 11.03 – 11.18	$L_{90,15min}$	**44**	50	44	39	39	36	33	32	22
		$L_{eq,15min}$	**49**	55	51	44	46	47	42	40	33
		$L_{10,15min}$	**51**	58	53	47	47	44	43	41	34
S3	02/08/2019 11.24 – 11.39	$L_{90,15min}$	**49**	51	48	42	42	44	37	34	25
		$L_{eq,15min}$	**57**	57	53	50	48	49	47	52	46
		$L_{10,15min}$	**59**	58	54	49	48	50	49	55	47

Table 21: Results of short term noise monitoring (Source: JHA)

8.6.2 Construction noise

Construction activities on the site will be managed in accordance with the *Interim Construction Noise Guideline* (ICNG) (DECCW, 2009). The ICNG encourages works to be carried out during the recommended standard construction hours and outlines feasible and reasonable work practices that may be implemented to minimise construction noise impacts. The ICNG recommends construction works be carried out between the hours of 7 am and 6 pm Monday to Friday, 8 am to 1 pm on Saturdays and for no works to be carried out on Sundays or public holidays.

The ICNG includes quantitative noise management levels (NMLs) and sleep disturbance criteria for residences and other sensitive land uses. A NML of 10 dB above the RBL for residential receivers is specified. It is at this point that all potentially impacted residences should be informed of the nature of the works to be carried out, the anticipated noise levels and the duration of works.

Based on the results of a preliminary construction noise impact assessment in the NVIA, noise associated with the normal construction works is expected to exceed the noise limits specified in the ICNG. The NVIA therefore recommends a detailed acoustic analysis be carried out as part of a Construction Noise and Vibration Management Plan, with noise control measures specified within the plan in order to minimise the construction noise impacts on the nearest noise sensitive receivers.

Notwithstanding the above, the construction noise levels are not expected to exceed the ICNG's highly noise affected criteria. This criterion represents the point at which there may be strong community reaction to noise.

A minor variation to the standard construction hours in the EPA's ICNG are proposed in order to align with the proposed construction hours of the adjoining school development and to ensure the timely completion of construction works. Notwithstanding, the higher noise generating activities will be undertaken only within the standard hours of construction, as outlined in the ICNG.

It is noted that majority of the high noise-generating activities, including demolition and site preparation works such as bulk earthworks, will be undertaken as part of a separate development approval process. The construction noise impacts associated with these activities will be assessed as part of a Review of Environmental Factors under Part 5 of the EP&A Act.

8.6.3 Operational noise

Operational noise impacts generated by the development will potentially include noise emissions from the following sources:

- mechanical plant
- use of power tools in the outdoor workshops
- the external loading dock
- traffic generated by the development.

The NVIA has assessed each of the above listed noise sources and has considered the following:

- noise levels have been considered as continuous over the assessment time period to provide the worst-case scenario
- lowest estimated background noise levels at the nearest noise sensitive receiver have been used to provide a worst-case scenario
- distance attenuation, building reflections and directivity.

The findings of the NVIA has determined the following:

- at this stage the mechanical plant selections have not been made and, therefore, a detailed assessment has not been able to be carried out (recommendations have been provided to minimise the impact of external noise emissions associated with the

mechanical plant of the proposed development to the nearest sensitive receivers including in-duct attenuation, noise enclosures, acoustic louvers, noise barriers, etc.)
- for activities associated with the external loading dock, the noise level criteria will be met at the nearest noise sensitive receiver during typical semi-trailer loading / unloading operations during the day-time and evening-time periods
- traffic noise impacts due to vehicle movements to the basement carpark via See Street will not have an adverse impact on the nearest residential receivers.

The NVIA provides the following mitigation measures to address the potential operational noise impacts associated with the development:

- plant noise be controlled to ensure external noise emissions are not intrusive and do not impact on the amenity of neighbouring receivers (a detailed assessment should be carried out once the final location for mechanical plant has been selected)
- the operation of power tools and construction plant used in the outdoor workshops shall be limited to between the hours of 7 am to 6 pm on weekdays
- waste collection and external loading movements are recommended to occur during the day-time period only.

The NVIA provides further detailed assessment of the operational noise impacts.

Based on the findings of the NVIA, it is considered that the development will not have a significant adverse impact on the surrounding residential receivers, subject to the implementation of the recommended mitigation measures.

8.7 Contamination

The following documentation is provided as part of the application to address any potential contamination issues that may arise during the construction of the development:

- Preliminary Geotechnical Investigation (PGI)
- Preliminary Site Investigation (PSI)
- Limited Detailed Site (Contamination) Investigation (DSI)
- Remediation Action Plan (RAP).

8.7.1 Preliminary Geotechnical Investigation

A PGI has been prepared by Douglas Partners and is included at Appendix O. The PGI has assessed the likelihood of acid sulphate soils being present on the site.

The PGI finds that the site is located in an area with no known occurrence of acid sulphate soils. Given that the lowest ground surface level at the site is at approximately RL 17 m AHD and noting that acid sulphate soils typically occur below RL 5 m AHD and rarely above this level it is considered that there is no risk of acid sulphate soils at this site.

8.7.2 Preliminary Site Investigation

A PSI has been prepared by Greencap and is included at Appendix P. The PSI included a desktop study to collect site information, identify certain site characteristics including existing land uses, site layout, geological and hydrogeological settings, historical land uses and activities, etc.

It is noted that the PSI relates to the TAFE Meadowbank campus in its entirety and not specifically the north-eastern portion of the site that is proposed to contain the Multi-Trades and Digital Technology Hub.

The conclusions made in the PSI include the following:

- historical uses of the site include the presence of a manufacturing company, the demolition of former infrastructure and the potential former use of the site for military operations
- current and historical chemical and waste storage that provides a moderate contamination risk due improper storage (identified during the site walkover)
- four petrol stations that were identified within 400 m up-gradient from site. Due to the distance from the site contamination risk is low
- a laundrette identified 35 m downgradient from site that poses a low contamination risk as it appears to be a commercial shop and is down-gradient
- there is a low potential for students, administrative and teaching staff to access the soils on site
- existing pavement and clayey soils would limit the potential leaching of contamination and migration of contaminated groundwater.

The PSI recommended a detailed site investigation be undertaken prior to any future development (discussed at Section 8.7.3).

8.7.3 Limited Detailed Site (Contamination) Investigation

A Limited DSI has been prepared by Douglas Partners and is included at Appendix P1. The primary objective of the Limited DSI is to assess the suitability of the site for the proposed development and to identify contamination (or potential contamination) issues that will require remediation or ongoing management as part of the proposed development.

The results of soil sampling at the site found there to be detectable concentrations of metals, Total recoverable hydrocarbons (TRHs), Polycyclic aromatic hydrocarbons (PAHs) and Polychlorinated biphenyls (PCBs). However, the concentrations within these samples were found to be below the adopted site assessment criteria.

In summary, the results presented in the Limited DSI finds that there are not likely to be any significant contamination risks to human health or the ecology associated with the site. The site is therefore considered suitable, from a contamination perspective, for the proposed development.

The Limited DSI recommends that an unexpected finds protocol be developed for implementation during the future civil, and construction works such that any finds of suspected contamination are appropriately investigated and managed.

8.7.4 Remediation Action Plan

A RAP has been prepared by Douglas Partners and is included at Appendix P2. The RAP provides:

- appropriate remedial options (if required) to render the site suitable, from a site contamination perspective, for the proposed development
- sets out the remediation acceptance criteria (if required) to be adopted for the remediation of the site and the validation requirements (if required) to verify the successful implementation of the remediation strategy

- identifies appropriate environmental safeguards required to complete the remediation works (if required) in an environmentally acceptable manner
- identifies appropriate occupational, health and safety procedures required to complete the remediation works (if required) in a manner that would not pose a threat to the health of site workers or users.

The RAP has been prepared in accordance with the requirements of the EPA's statutory guidelines and has determined that the site can be made suitable for the proposed development subject to the following:

- completion and finding of the data gap analysis
- appropriate management of off-site disposal of fill/soil in accordance with the RAP
- proper implementation of unexpected finds protocols during basement excavation and other civil works on the site
- consideration of remedial options and procedures in the event of finding significant site contamination.

The development is considered to be consistent with the requirements of SEPP 55 as the RAP confirms that the site can be made suitable for its intended use as an educational establishment.

8.8 Social impact

A Social Impact Assessment (SIA) has been prepared by Elton Consulting and is included at Appendix M. The SIA was prepared in consideration of the DPIE's Social Impact Assessment Guideline.

The SIA provides a detailed summary of the social impacts associated with the proposal and assesses the significance and severity of each impact. The SIA includes mitigation measures for likely negative social impacts, and enhancement measures for positive social impacts.

The SIA identifies the following positive social impacts that would result from the development:

- extensive improvement to vocational teaching and learning standards
- extensive opportunity for advanced educational outcomes in trades and technology disciplines
- significant value-addition to integrated and contemporary education facilities nationwide;
- improved local social capital and on-campus cohesion.

The SIA identifies the following potential negative social impacts to include:

- amenity and accessibility disruption caused during construction activities
- loss of the on-campus child care facility.

The positive social impacts of the proposal can be enhanced by establishing a multi stakeholder working group during and post construction in order to monitor and realise the positive social impacts. The working group will establish an integrated approach, connecting stakeholder groups, including TAFE Meadowbank, the new Meadowbank Education Precinct Schools, TAFE NSW, industry partners and alumni, and local government.

To address the negative impacts, the SIA has recommended the following mitigation measures and strategies be incorporated as part of the development:

- adoption of a comprehensive Construction Management Plan, which considers matters of noise, safety, traffic and transport congestion, and continued accessibility to site facilities and services; and
- encourage participation, engagement and feedback from key stakeholder groups as part of a management plan.

The SIA concludes that while some stakeholder groups will experience change to their established way of life, the majority of directly affected stakeholders will experience benefit from the proposal.

8.9 Flooding and drainage

A Flood Impact Report (FIR) has been prepared by TTW and is included at Appendix R. The FIR addresses the following:

- the existing flood regime throughout the site
- flooding and overland flow analysis design
- consistency with Council's Floodplain risk management study and plans;
- potential flood impacts of the proposal and impact on the flood affectation of adjacent properties/road;
- compatibility with the flood hazard of the land;
- safety of future occupants and visitors shall be carefully considered;
- provision of protection of underground elements (such as basement carparks) for flood events up to the Probable Maximum Flood (PMF);
- evacuation and emergency access for events up to the PMF
- recommendations made in the Parramatta River Ryde Sub Catchments Flood Study Report (SKM, Jan 2015)

8.9.1 Existing site conditions

The site is located within the Charity Creek catchment which has an area of 247 ha and incorporates parts of Denistone, West Ryde and Meadowbank. The location of the site in context to the Charity Creek catchment and surrounding flood catchments is shown in Figure 44.

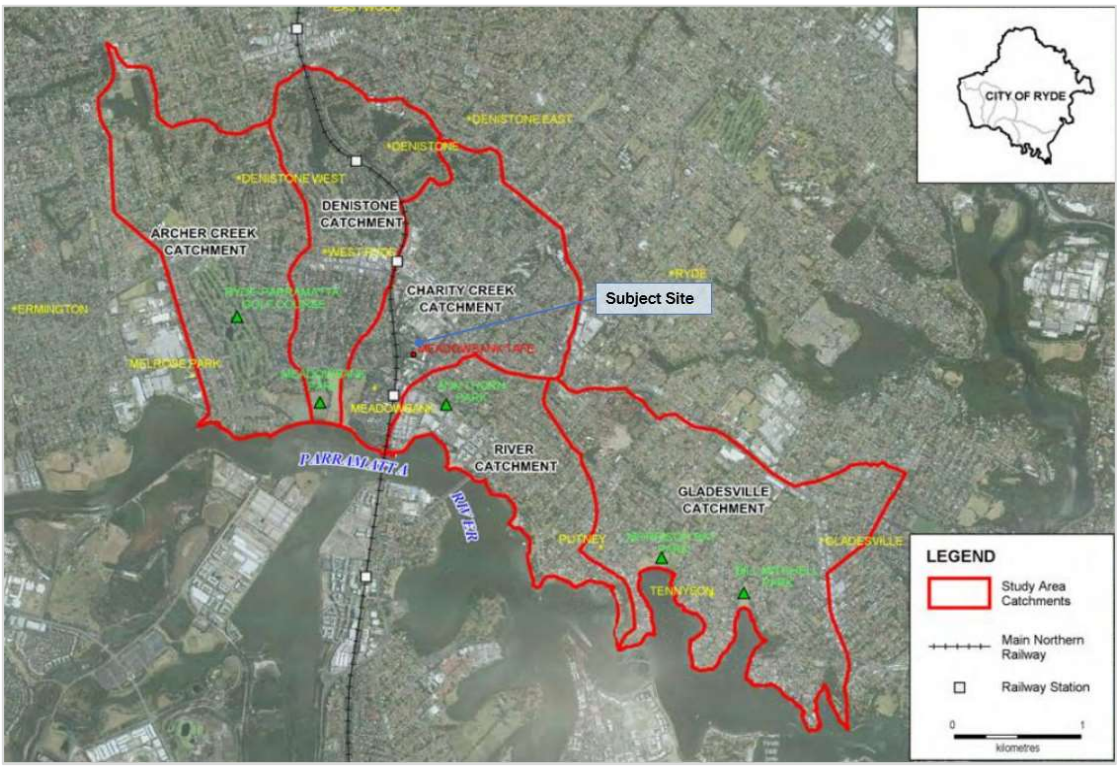

Figure 44: Ryde sub-catchments of the Parramatta River – SKM Flood Study 2015 (source: TTW)

According to the FIR, development is classified as a 'Low Flood Risk' as it is located outside the mainstream flooding extent for the 1% AEP (1-in-100 year) flood event but is partly within the extent of the PMF.

The existing 1% AEP and PMF flood extent in proximity to the site are shown in Figure 45 and Figure 46, respectively (the development footprint outlined in yellow.

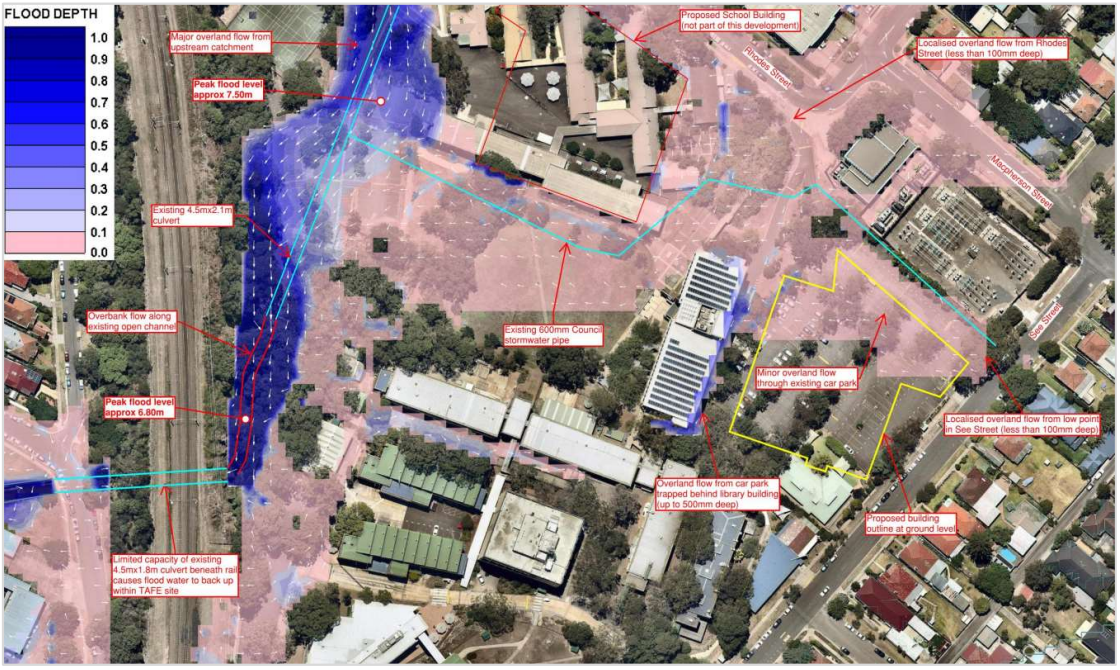

Figure 45: Existing 1% AEP flood extent (Source: TTW)

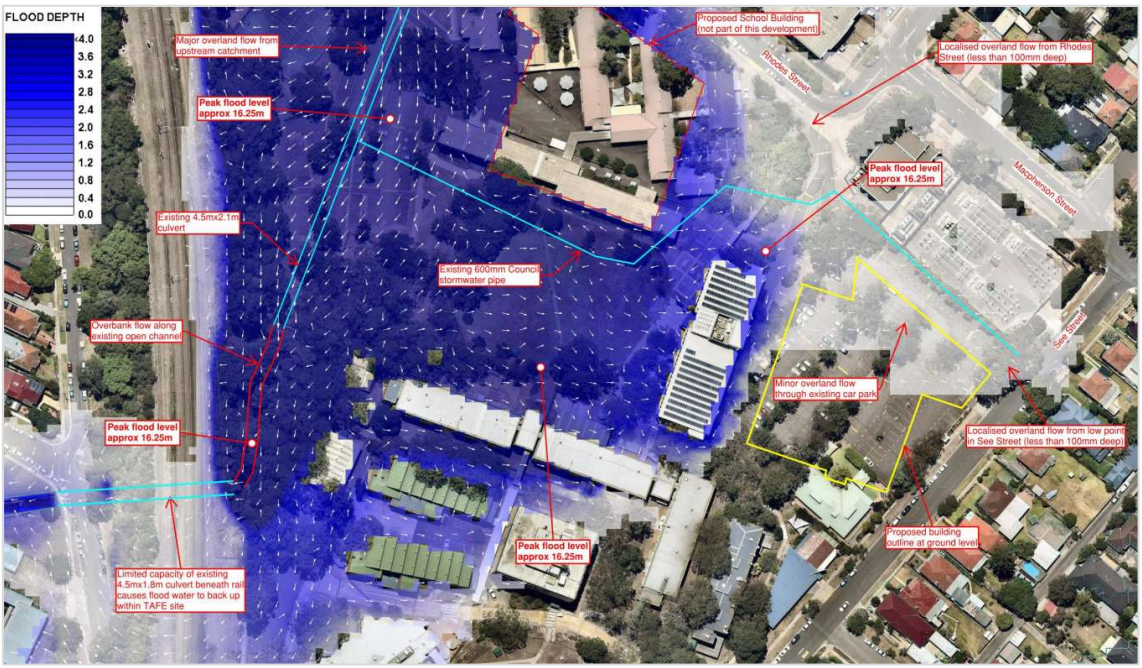

Figure 46: Existing PMF flood extent (Source: TTW)

The FIR includes information obtained the flood model from Enstruct who were engaged by the DoE to complete a flood study for the new Meadowbank Education Precinct Schools. This model includes the original flood model used for Council's flood study. TTW has modified this flood model to use current topographical survey data within the TAFE Meadowbank precinct and included adjustments for the proposed model includes the site grading for the new Multi-Trades and Digital Technology Hub building.

The flood modelling provided in the FIR was completed using TUFLOW. Hydrological modelling of rainfall-runoff processes was completed using the DRAINS modelling software in determining the storm event flows across the catchment.

The FIR states that there are two mechanisms of flooding across the site during 1% AEP flood event:

- Major flooding in excess of 5 m deep along the western boundary of the site along the existing culvert and open channel. This overland flow from the upstream catchment is restricted by the capacity of the existing culvert beneath the railway line and allows flood water to back up and flood the TAFE site to a peak flood level of approximately 7.50 m
- Minor overland flow less than 100 mm deep that enters the site from a low point in See Street and Rhodes Street (refer Figure 45). This localised overland flow is a result of insufficient capacity in the existing stormwater network to convey the 1% AEP flows.

In the PMF event, the major overland flow is restricted at the rail culvert and backs up to flood most of the site to a peak flood level of approximately 16.25 m. The peak PMF level occurs around 90 minutes after the start of the storm and around 70 minutes after the 1% AEP flood level (7.50 m) is reached. However, the minor overland flow from See Street and Rhodes Street remains less than 100mm during the PMF.

8.9.2 Flooding impact

The FIR states that the location of the Multi-Trades and Digital Technology Hub building is within a minor overland flow path (through the existing on-site car park). The proposed site grading and stormwater drainage infrastructure incorporated as part of the development will redirect and convey flows away from the building and along the northern access driveway (towards an open landscaped area).

The development will have no impact on the areas of major flooding that occur to the west of the building footprint and will have no impact on any existing buildings or structures that are located within the campus or any buildings or structures that are outside of the campus boundaries.

The indicative 1% AEP and PMF Peak flood depths through the TAFE Meadowbank campus once the development is constructed is shown in Figure 47 and Figure 48, respectively (the development footprint outlined in yellow).

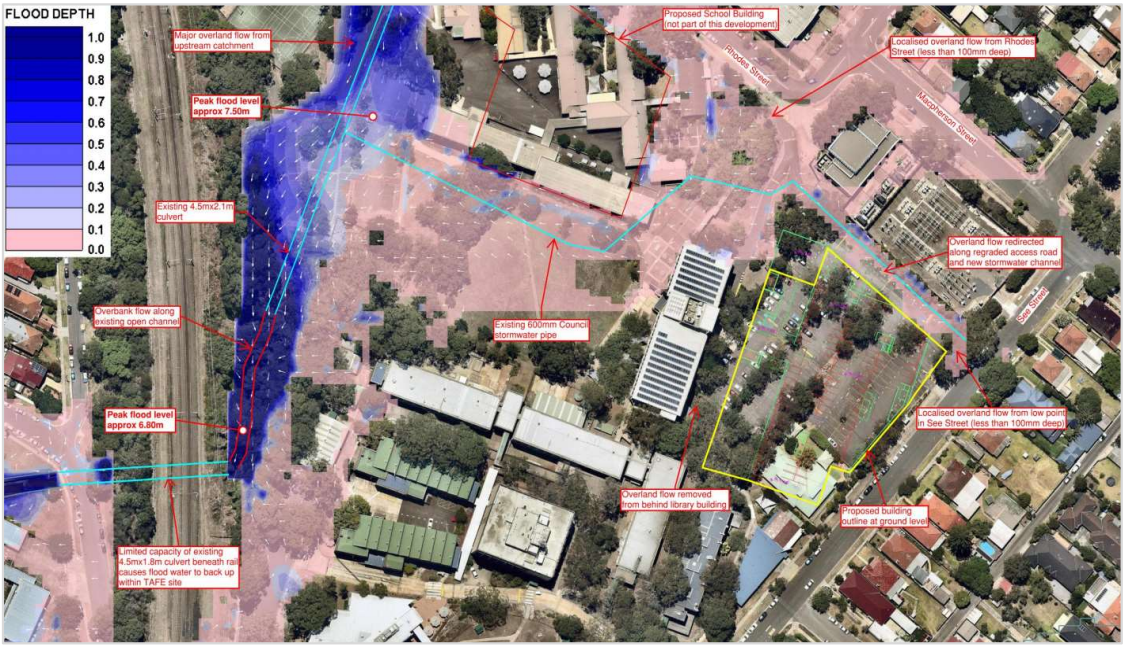

Figure 47: Proposed 1% AEP peak flood depths (Source: TTW)

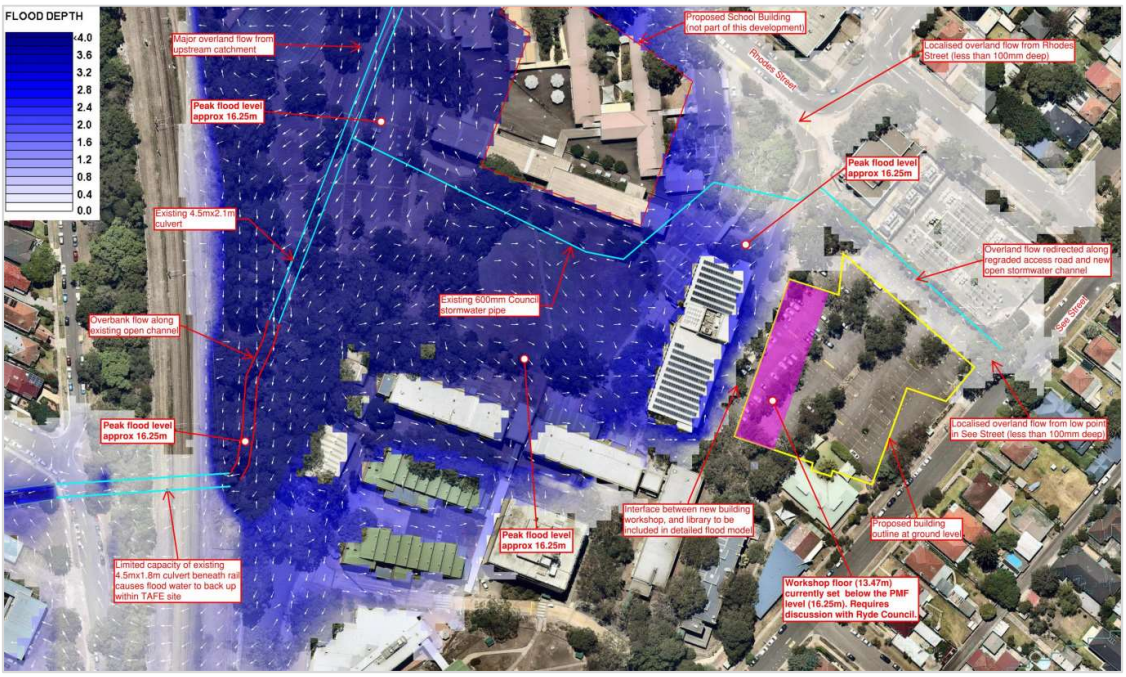

Figure 48: Proposed PMF peak flood depths (Source: TTW)

The proposed flood model results demonstrate that the minor overland flow from See Street during both the 1% AEP and PMF can be managed through adequate site grading and the implementation of appropriate stormwater management measures incorporated as part of the development design.

The area of major flooding from the west of the site will have no impact on the development during the 1% AEP flood event which is at RL 7.50 m. However, flows will impact the development during the peak of the PMF event which is at RL 16.25 m (to the west of the development). To address the flood impacts during the PMF event, the FIR recommends for a flood evacuation plan be prepared as part of the development design.

8.9.3 Drainage

Stormwater from new roof areas will be captured within the building downpipes and treated prior to discharge into the existing 600 diameter line at the base of the site, inclusive of a 1.5m wide grass lined swale proposed to capture any overland flow along the northern boundary and driveway flow.

For this specific site, on-site detention is not required as per RDCP, Part 8.2 – Stormwater and Flood plan Management, Section 1.4.1 (d).

The site will see existing stormwater drainage system maintained and connected via a water quality treatment process. An erosion and sediment control plan has been prepared for construction on site.

The proposal in its current form meets Council's civil design requirements for stormwater drainage.

8.10 Biodiversity

A BDAR Waiver Request was prepared by EMM Consulting (EMM) as part of the Request for SEARs, in accordance with the requirements of the BC Act. The BDAR Waiver Request is provided at Appendix S.

8.10.1 Flora and fauna

The BDAR Waiver Request states that the site consists of planted endemic, non-endemic and exotic tree, shrub and grass species located within the existing at-grade car park. The existing vegetation does not comprise of a native vegetation community due to the high level of disturbance and extensive landscape plantings. Further, none of the trees or shrubs present within the site have identifiable habitat features such as hollows or nests.

The BDAR Waiver Request confirms that there are no naturally occurring threatened flora, fauna or ecological communities present on the site and that there is no suitable habitat for any threatened species that are predicted to occur in the locality.

Further, ecological habitat connectivity is negligible due to the site's highly disturbed nature and current use as an educational establishment and surrounding land uses including a light industrial estate to the north and established residential development to the east and south. Any species which may currently utilise the site for occasional foraging would be highly mobile. The BDAR Waiver Request confirms the proposed development is unlikely to have a significant impact on biodiversity.

8.10.2 Threatened microbat bat species

EMM undertook daytime roost searches for threatened microbat species in two existing buildings on the site including Building N (Child Care Centre, to be demolished as part of a separate development approval process) and small substation. The search was undertaken in accordance with *Species credit threatened bats and their habitats, NSW survey guide for the Biodiversity Assessment Metho*d (OEH 2018).

A handheld bat detector (EchoMeter) was carried for the duration of the inspection to record any calling bats. A visual inspection was also made of all cracks and crevices in the buildings to search for roosting microbats, or evidence of their presence (urine stains, droppings, remains and bat fly casings).

EMM acknowledged that, although some potentially suitable areas for microbat roosting were observed at the childcare centre, no microbats or evidence of their presence was recorded. The substation does not contain suitable microbat roosting habitat.

The conclusions made by EMM confirms the development will not impact on threatened microbat species (refer Appendix S).

8.10.3 Biodiversity Development Assessment Report waiver

Following the submission of the BDAR Waiver Request and subsequent surveys for threatened microbat species, DPIE and the Environment, Energy and Science (EES) Group issued a BDAR waiver on 22 August 2019.

Subsequent to the issue of the BDAR waiver, the SEARs for SSD 10349 were reissued to account for the inclusion of the Digital Technology Hub within the Multi-Trades Hub building as well as minor amendments to the overall building footprint. The project scope was also revised to remove the site preparation activities from the SSD application (including the

removal of demolition works, vegetation clearing, removal of all hardstand areas including car parking infrastructure and bulk earthworks activities).

As a result of the changes to the project scope and the reissuing of the SEARs, DPIE requested that a new BDAR waiver request be submitted. Accordingly, EMM undertook additional assessment of the potential biodiversity impacts in an updated BDAR waiver request (dated 10 September 2019) which was submitted to DPIE for consideration.

The new BDAR waiver request confirmed that the revised scope of the project will not impact on any additional native tree species or fauna habitat features. Consequently, the revised building footprint will not result in any additional biodiversity impacts and will not impact on any threatened species, populations or communities.

A new BDAR Waiver was granted by DPIE and EES Group on 25 September 2019. The Multi-Trades and Digital Technology Hub at TAFE Meadowbank has been reviewed as 'not likely to have any significant on biodiversity values' and therefore does not require a BDAR to be provided as part of the application.

8.11 Construction

A preliminary Construction Management Plan (CMP) has been prepared by GHD and is included at Appendix U. The preliminary CMP provides measures to ensure the impacts of sediment and erosion control and waste are appropriately managed.

8.11.1 Sediment and erosion control

The preliminary CMP notes that the Principal Contractor is required to prepare an Erosion and Sediment Control Plan. The Erosion and Sediment Control Plan will be prepared in accordance with the required standards and codes, including the 'Blue Book'.

The preliminary CMP identifies the following measures for consideration by the Principal Contractor that may be adopted in the Erosion and Sediment Control Plan:

- approved runoff and erosion controls installed before site vegetation is cleared (other than that associated with the construction of the controls)
- topsoil to be stripped only from approved areas and stockpiled for re-use during site rehabilitation and landscaping
- stockpiles of topsoil, sand, aggregate, spoil or other material to be stored clear of any drainage line, easement, waters, footpath, kerb or road surface and shall have measures in place to prevent the movement of such materials onto the areas mentioned
- all stockpiled materials to be retained within the property boundaries
- runoff detention and sediment interception measures applied to the land. These measures will reduce flow velocities and prevent topsoil, sand, aggregate, or other sediment escaping from the site or entering any downstream drainage easements or waters
- the capacity and effectiveness of runoff and erosion control measures shall be maintained at all times to conform to the specifications and standards quoted and to any conditions of approval of those measures
- provide a wash down area behind sediment control measures for washing and cleaning activities, brick cutting, etc
- maintaining all erosion control measures for the duration of works until the land is effectively stabilised

- demarcating / controlling areas for construction activities and traffic movements – to minimise disturbance on-site
- locating stockpiles / material storage areas away from flood-prone land, drainage paths, water bodies and stormwater systems
- regular street-sweeping (or similar) of roadways adjacent to, and within, the site during the course of construction - to ensure they are kept free and clear of mud and sediment

8.11.2 Waste

A Construction and Demolition Waste Management Plan (CDWMP) and an Operational Waste Management Plan (OWMP) have been prepared by Waste Audit & Consultancy Services and are included at Appendix T.

Construction

The proposed works will comprise the generation, handling, storage and disposal of construction and demolition waste. The CDWMP identifies, quantifies and classifies the likely waste streams to be generated during the construction and demolition phases of the proposal.

The CDWMP also recommends management strategies for each type of material, including whether the material is reused or recycled onsite or offsite, or if the material is disposed of at an appropriate landfill facility.

Operation

The OWMP has been prepared in accordance with relevant legislation, standards and guidelines, including the NSW EPA *Waste Classification Guidelines 2014*. The OWMP identifies appropriate servicing arrangements, including storage facilities and equipment, access and waste management and recycling.

The waste storage area is located on Level 3 of the proposal, in proximity to the building's external loading yard. There are no grade changes between the waste storage area, loading yard, or the internal circulation area. The waste storage area has been designed to accommodate bins for all waste and recycling generated on the premises between collections.

General waste and recycled material will be manged as follows:

- staff and students dispose of material into designated bins
- cleaners collect materials and transfer to the bins within the waste storage area
- waste and recycling contractor services bins to designated schedule

TAFE Meadowbank will monitor, measure and report on operational waste management performance. Annual performance and contract reviews will be conducted with campus' facilities management, waste contractor and cleaning manager to assess waste targets.

8.11.3 Construction hours

The Preliminary CMP outlines the following construction hours for the proposed works:

- Monday to Friday: 7 am to 7 pm
- Saturday: 8 am to 4 pm

- Sunday/Public Holidays – No work

A minor variation to the standard construction hours in the EPA's ICNG are proposed in order to align with the proposed construction hours of the adjoining school development and to ensure the timely completion of construction works.. Notwithstanding, the higher noise generating activities will be undertaken only within the standard hours of construction, as outlined in the ICNG.

After hour permits may be sought from the relevant authorities, for reasons such as:

- to reduce impact on public or nearby residents;
- emergency event/incident;
- authority shutdowns or disconnections; and
- other reasons as required.

8.12 Contributions

The *City of Ryde Section 94 Development Contributions Plan 2007* (Contributions Plan) applies to all land within the City of Ryde LGA. The purpose of the Contributions Plan is to:

- *Provide an administrative framework under which specific public facilities strategies may be implemented and coordinated.*
- *Ensure that adequate public facilities are provided for as part of any new development.*
- *Authorise the council to impose conditions under section 94* (now Section 7.11) *of the Environmental Planning and Assessment Act 1979 (EPA Act) when granting consent to development on land to which this plan applies.*
- *Provide a comprehensive strategy for the assessment, collection, expenditure accounting and review of development contributions on an equitable basis.*
- *Ensure that the existing community is not burdened by the provision of public amenities and public services required as a result of future development.*
- *Enable the council to be both publicly and financially accountable in its assessment and administration of the development contributions plan.*

The Contributions Plan states that a contribution must be payable to Council at the time specified in the condition that imposes the contribution. However, it is considered that as the proposed development relates to public authority social infrastructure it should not be subject to the levying of contributions.

The development will provide the local community with:

- increased enrolment capacity at the TAFE Meadowbank campus
- facilities for practicable training experiences and learning
- a modern, flexible and future-proofed educational establishment
- increased opportunities for industry partnerships and collaboration on-site.

The development is, therefore, considered to provide a significant public benefit and is in the public interest. Further, the development forms part of the NSW Government's investment to transform the TAFE Meadowbank into a technology-focused campus. Consequently, an exemption from the requirement to provide a development contribution is considered justified as part of the application.

8.13 Services and Infrastructure

A Service Infrastructure Management Plan Report has been prepared by JHA Services and is included in Appendix Q. The report addresses the following:

- the existing electrical services throughout the site
- proposed electrical works – relocation of substation and new substations
- the protection of the existing easements
- the existing hydraulic services – sewer system, water services, fire services, gas services
- proposed hydraulic services – sewer system, water services, fire services, gas services

8.13.1 Existing Site Conditions

Existing substations on the site will be retained. A strategic distance between the zone substation and the development to allow for the required zone substation easement.

The existing fibre cable is connected to the site via See Street (Block J), with the sewer system located within the north eastern carpark and water services connected to the site via See Street and Rhodes Street. Multiple gas mains are connected to the site from See Street, Constitution Road and Rhodes Street.

8.13.2 Proposed Utilities

The proposal will see two kiosk substations installed to serve the new combined Multi Trades and Digital Technology Hub. The existing substation and switch board are to be relocated (proposed locations shown in Appendix Q).

New fibre cables will be run underground in conduit and pits along the spine (proposed location shown in Appendix Q). Maintenance to the existing sewer is required for the works, including the decommissioning of a sewer main located in the existing northern carpark.

Finalisation of design approach will satisfy the conditions for incoming water supply and a masterplan strategy will be developed regarding gas services.

8.14 Electromagnetic fields

An Electromagnetic Field Study has been prepared by JHA Services and is included in Appendix X. The report addresses the following:

- sources of electrical and magnetic fields
- standards and industry documents
- health effects of ELF magnetic fields
- design considerations for new installations and elf magnetic field mitigation options
- site specific elf magnetic field distribution

The summary of findings concludes the perceived ELF levels generated from existing AusGrid Zone Substation will be less than the maximums set for public exposure, as per the governing bodies in the industry listed in the report.

The Electromagnetic Fields Study concludes the field records of ELF exposure are considered within acceptable limits for interference of electronic equipment.

9 Environmental Risk Assessment

This section provides an environmental risk analysis to identify potential environmental impacts associated with the proposal and proposed mitigation measures, as required by the SEARs.

Risk Type	Potential Impact/s and Risk/s	Mitigation Measures
Built form, urban design and visual impacts	The proposed works will adversely impact on the built form and surrounds of the Meadowbank TAFE and negatively impact on views from the surrounding residential area	• Built form of the Multi-Trades and Digital Technology Hub allows for an open atrium style design to create a dynamic and stimulating interior and exterior when viewed from See Street • Design has undergone careful consideration regarding its materials and colour selection, roof form and facades visible from the streetscape • Generous landscaping and open space areas to soften the built form
Environmental Amenity	Impacts upon visual amenity, solar access and overshadowing, wind impacts, crime and lighting	• Shadow diagrams (Appendix C) have been prepared to show limited extent of overshadowing to residential properties along See Street during the winter solstice (between 12pm – 4pm) • Height and bulk of the building is consistent with existing buildings across the TAFE Meadowbank campus and the surrounding locality • Treatment strategies are proposed to mitigate any adverse wind impacts, including landscaping and impermeable screening • Crime Prevention Through Environmental Design Report (Appendix H) targets natural surveillance, access control, territorial re-enforcement and space/activity management to reduce risks of crime • appropriate location position and aiming of luminaries to reduce light spill and glare • compliance with AS4282:2019 – Control of the obtrusive effects of outdoor lighting
Traffic and Transport	Impacts on network efficiency, surrounding amenity and pedestrian circulation	• General public access will be maintained via alternative pedestrian access • Active transport networks within Meadowbank reduce traffic congestion • A Construction Traffic Management Plan will be prepared by the successful contractor • Construction vehicle access is proposed from See Street and egress via Rhodes Street to minimise the use of local roads and use arterial roads where possible

Risk Type	Potential Impact/s and Risk/s	Mitigation Measures
Ecologically Sustainable Development	Negative impacts on the environment, resources and human health	• The proposal is compliant with the Ecologically Sustainable Development design principles • Minimise use of energy, water and materials during the construction phase
Heritage conservation	Works impact on the heritage values of nearby heritage conservation area and items of heritage significance	• All design details are to be carefully coordinated, resolved and detailed as part of the design development and documentation process • New works will be sympathetic to the surrounding heritage conservation area and heritage items
Noise and Vibration	Works impact on the amenity of neighbouring properties	• Works will be scheduled to minimise impacts on the on-going operations within the TAFE Meadowbank campus • Measures to mitigate construction noise impacts will be detailed in a Construction Management Plan • Operational noise will be carefully managed through mitigative measures including waste collection, external loading movements and operation of outdoor workshops during the day-time and evening-time hours only
Contamination	The site may be contaminated	• A Remediation Action Plan (Appendix P) has been prepared to detail measures to be taken for remediation of the site, if required prior to construction
Social Impact	Amenity and accessibility disruption during the construction stages and the loss of the on-campus childcare facility	• Adoption of a comprehensive construction management plan, which considers matters of noise, safety, traffic and transport congestion • Address the matter by encouraging participation and feedback from key stakeholder groups as part of the management plan
Flooding and Drainage	Flooding of the site in the case of extreme weather events	• The works are consistent with council's floodplain risk management study and plans • Flood Impact Report (Appendix R) considers evacuation and emergency access in the case of events up to the maximum probable flood • A Flood Evacuation Plan to be prepared as part of the development design
Biodiversity	Disruption to existing biodiversity on site, including further clearing of land and loss of wildlife	• The site is currently utilised as an at-grade car park and existing biodiversity on the site is minimal • The BDAR Waiver confirms the proposed development is unlikely to have a significant impact on biodiversity
Construction	Sediment and erosion, noise, traffic, waste	• Sediment and erosion control plan have been prepared to detail mitigative measures to be taken

Risk Type	Potential Impact/s and Risk/s	Mitigation Measures
		• These include appropriate sediment and erosion fencing, runoff detention and sediment inception measures and ensuring materials storage is located away from flood-prone land, drainage paths, water bodies and stormwater systems • Construction vehicle routes to minimise the use of local roads and maximise the use of arterial roads where possible • Construction noise control measures to be refined as part of a Construction Management Plan
Services and Infrastructure	Appropriate services and infrastructure will not be provided for the site	• Existing utilities will be upgraded and replaced to meet the increasing demands of the TAFE Meadowbank campus • New utilities are proposed to provide appropriate services and infrastructure
Electromagnetic Fields	High levels of ELF exposure	• The Electromagnetic field study (Appendix X) concludes the records of ELF exposure are considered within acceptable limits

Table 22: Environmental Risk Assessment

10 Conclusion

This EIS has been prepared by Keylan Consulting Pty Ltd on behalf of TAFE NSW (the Applicant) to support a SSD application for a new Construction and Buildings Trade Facility (the Multi-Trades and Digital Technology Hub) at the TAFE NSW Meadowbank Campus in the City of Ryde LGA.

The SSD application is submitted to DPIE pursuant to Part 4 of the EP&A Act. This EIS has been prepared in accordance with the revised SEARs issued on 28 August 2019 and provides a comprehensive assessment of the potential impacts associated with the development.

The development will provide a significant public benefit through the provision of a major new tertiary educational facility on a site that is appropriately zoned for such purposes. The development will contribute to the broader vision of the Meadowbank Education and Employment Precinct as a world-class education precinct that will provide a continuous pathway for students from school to vocational training or higher education.

The conclusions and recommendations provided in the accompanying technical reports confirm the development will not have a significant or detrimental impact on the amenity of the surrounding locality or upon the existing environment.

Further, the EIS demonstrates the development has strategic merit as it is consistent with the aims and objectives of the relevant strategic plans that apply to the site including the Greater Sydney Region Plan, North District Plan and the draft Meadowbank Education and Employment Precinct Masterplan.

Based on the above, the development is considered to be in the public interest and therefore warrants approval.

Appendix A

Secretary's Environmental Assessment Requirements

Appendix B

Capital Investment Value

Appendix C

Architectural Design Statement

Appendix D

Architectural Plans

Appendix E

Landscaping Plans

Appendix F

Survey Plan

Appendix G

Wind Statement

Appendix H

Crime Prevention Through Environmental Design Report

Appendix I1

Transport and Accessibility Impact Assessment

Appendix I2

Travel Plan

Appendix J

Ecologically Sustainable Development Report

Appendix K

Heritage Impact Assessment

Appendix L

Aboriginal Cultural Heritage Assessment

Appendix M

Social Impact Assessment

Appendix N

Noise and Vibration impact Assessment

Appendix O

Preliminary Geotechnical Investigation

Appendix P

Preliminary Site Investigation

Appendix P1

Limited Detailed Site (Contamination) Investigation

Appendix P2

Remediation Action Plan

Appendix Q

Services infrastructure Management Plan

Appendix R1

Flood Impact Report

Appendix R2

Civil Design Report

Appendix S

BDAR Waiver Request

Appendix T1

Construction Waste Management Plan

Appendix T2

Operational Waste Management Plan

Appendix U

Preliminary Construction Management Plan

Appendix V

Stakeholder Engagement Outcome Report

Appendix W

Accessibility Design Review Report Report

Appendix X

Electromagnetic Field Study

Appendix Y

Specialist Lighting Report

Appendix Z

Section 10.7(2) and (5) Planning Certificates